



Faculty of Sciences

**The Features of Large-Scale Transnational Land
Deals and their Effects on Environment and
Livelihood: Evidence from Western Ethiopia**

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Cover: Partial views the study area. The Karinchachi ranges located between mount Belaya and mount Dangure with Gumuz farmlands in front (top), and partial topographic view of the lowlands with commercial farming at the front (bottom). Photo taken by the author (2014)

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In loving memory of my best heroes:
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List of Acronyms and Symbols

ADLI	Agricultural Development Leads to Industrialization
AfDB	African Development Bank
ANOVA	Analysis of variance
AO	Agricultural Outsourcing
ASTER	Advanced Spaceborne Thermal Emission and Reflection
BIO	Belgian Development Bank
BoFED	Bureau of Finance and Economic Development
BRICS	Brazil, Russia, India, China and South Africa
CBD	Convention on Biological Diversity
CL	Cropland cover
Cp	Peak discharge coefficient for a particular catchment
CSA	Central Statistical Agency [of Ethiopia]
DEG	German Investment and Development cooperation
DEM	Digital Elevation Model
EAIF	Emerging Africa Infrastructure Fund
EAILAA	Ethiopian Agricultural Investment and Land Administration Agency
EBA	Everything But Arms
EcS	Economic Sustainability.
EIA	Ethiopian Investment Agency
EIC	Ethiopian Investment Commission
Ens	Environmental Sustainability
EPFL	Ecole Polytechnique Federale De Lausanne
EU	European Union
EWCA	Ethiopian Wildlife Conservation Authority
FAO	Food and Agriculture Organization of the United Nations
FDI	Foreign Direct Investment
FMO	Fédération des Maladies Orphelines
GBGR	Government of Benishangul Gumuz Region
GCP	Ground Control Point
GDP	Gross Domestic Product

GERD	Grand Ethiopian Renaissance Dam
GIS	Geographic Information System
GLP	Global Land Project
GNI	Gross National Income
GNSS	Global Navigation Satellite System
GOE	Government of Ethiopia
Gov	Host country government
GSE	Geological Survey of Ethiopia
GTP	Growth and Transformation Plan
Gwh	Gigawatt-hours
ha	hectare
HAGL	Hoàng Anh Gia Lai
HDI	Human Development Index
HI	Hard infrastructure
ICF	Infrastructure Crisis Facility
ICT	Information Communication Technology
IDC	Industrial Development Cooperation
IFAD	International Fund for Agricultural Development
IFC	International Finance Corporation
IFPRI	International Food Policy Research Institute
IGE	Imperial Government of Ethiopia
ILC	International Land Coalition
ILD	Inclusive Land Deal
ILPI	Investor-Local People Interaction
ILUM	Integrated Land Use Management
Inv	Investor(s)
ISA	International Seabed Authority
IUCN	International Union for Conservation of Nature
Kcv	Forest distribution index
Kcal	Kilocalorie
LD-PIC	Land deal power-interest clustering
LIP	Legitimacy, Interest, and Power
Loc	Host country local communities
LSTLD	Large-scale transnational land deals

m a.s.l	metres above sea level
MoA	Ministry of Agriculture [of Ethiopia]
MODIS	Moderate Resolution Imaging Spectroradiometer
MoFED	Ministry of Finance and Economic Development [of Ethiopia]
NASA	National Aeronautics and Space Administration
NBE	National Bank of Ethiopia
NFFC	National Family Farm Coalition
ORM	Ordinal Regression Model
PASDEP	Plan for Accelerated and Sustained Development to End Poverty
PLC	Private Limited Company
PRSP	Poverty Reduction Strategy Papers
PRAI	Principles for Responsible Agricultural Investment
Qp	Peak discharge
RCD	Integrated index of forest cover and its distribution
REDD	Reduced emissions from deforestation and Forest Degradation
RLALUP	Rural Land Administration and Land Use Proclamation, Proclamation
RMSE	Root-Mean-Square Error
Rn	Ruggedness number
SD	Social Differentiation
SDPRP	Sustainable Development and Poverty Reduction Program
SEZ	Special Economic Zones
SI	Soft Infrastructure
SLD	Sustainability of Land Deals
SoS	Social Sustainability
SSA	Sub-Saharan Africa
SSC	Suspended Sediment Concentration
STWR	Share The World's Resources
TA	Tenure Arrangements
TLD	Transnational land deal
TNI	Transnational Institute
UNCHS	United Nations Centre for Human Settlements
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme

UNHCR	United Nations High Commissioner for Refugees
USGS	United States Geological Survey
WBG	World Bank Group
WHRC	Woods Hole Research Center

List of Publications

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Chapter 1 Introduction

1.1 Background

The appearance of common expressions such as ‘land grabbing’ or ‘land deal’ appear on a regular basis across the mainstream media and popular presses is an indicator of everlasting concern about land markets. According to literature, large-scale acquisition of land is not only considered as a transnational transaction, i.e., ‘global land grabbing,’ but also as ‘inland’ acquisition or ‘domestic land grabbing’ (Cotula, *et al.*, 2009; Borras *et al.*, 2011; Deininger *et al.*, 2011; Osabuohien, 2014). Although the term ‘land grabbing’ is more of ‘activist’ terminology, ethically controversial large-scale land acquisitions could help in resolving food shortages in developing countries (Schiermeier, 2014). The global land acquisition is much stronger and more sophisticated than perceived.

While migrants from Africa, Asia, and Latin America migrate to the USA, Europe, and the Gulf States, there is a rush for land in the opposite direction: foreign investors are attracted by the land markets in the South (Zoomers, 2010:442).

Large-scale land acquisitions are the contentious issue which involves the buying or leasing of large tracts of land mainly in developing countries, either by domestic or transnational companies, individuals, and governments. In broader terms, ‘land grabbing’ as contextualized in the 21st century refers to large-scale land acquisitions following the 2007-2008 global food price crisis (Cotula, *et al.*, 2009; Borras *et al.*, 2011). Securing water resources is usually critical to the land acquisitions, and hence has subsequently led to an associated trend of ‘water grabbing’ (Mehta *et al.*, 2013; Rulli *et al.*, 2013). Recent literature associate the term ‘land grabbing’ as a contemporary phenomenon caused by the combined effects of the global stock market crash and the food and energy crisis of 2008/2009 (Cotula, *et al.*, 2009; White *et al.*, 2012). However, the expression was also mentioned in earlier works by Karl Marx probably for the first time but with a different context associated with the enclosures in England:

The laborers are first driven from the land, and then come the sheep. Land grabbing on a great scale, such as was perpetrated in England, is the first step in creating a field for the establishment of agriculture on a great scale (Marx, 1887: 505).

Some tried to explain that 'land grabbing' has emerged as a result of power and production shifts. For instance, Margulis *et al.* (2013: 1) argued that 'the character, scale, pace, orientation, and key drivers of the recent wave of land grabs is a distinct historical phenomenon closely tied to major shifts in power and production in the global political economy.'

Soaring global prices for agricultural commodities coupled with the desire for meeting domestic consumption among net food importing countries exacerbated the demand for large swatches of arable land (Cotula *et al.*, 2009; Osabuohien, 2014). Likewise, the rising need for clean energy sources among carbon markets as a response to climate variability (Corson & MacDonald, 2012) drove companies and governments from advanced and emerging economies to mobilize capital and acquire land on large scale basis. Thus, the conflux of financial markets, the rising demand for food and energy sources, and the desire to tackle climate crises through biofuel have fuelled the growing interest for land (Hassan & Kalam, 2013). On the other side, governments of developing countries offer land on a large-scale basis to attract foreign direct investment (FDI) to speed up their national economic growth (Lavers, 2012b).

All life, including the life of human beings, ultimately depends on land and its resources. From land, food is grown, through and across it, the fresh water people drink is purified and delivered, on land protective shelters are raised. Land provides people with the means to live, and from the initial steps tread upon it, has been a patient-provider of fundamental resources. In addition to its economic significance, land is a central social asset which has an intense attachment with the socio-cultural setups of communities (Sani, 2002; Stephenson, 2008; Tengberg *et al.*, 2012; Zeppel, 2009). For many governments, the land is a source of state revenue and a means to boost gross domestic product (GDP) and national prosperity (Adams & Tiesdell, 2010; Boone, 2007). Therefore, land-related decisions and transactions are usually sensitive and sometimes became part of the paramount reasons for societal regime changes (Paige, 1975; Campbell, 2005; Bahru, 2014).

It is however known on the other hand, that our earth's lands are no longer in a situation to keep up with the pressures placed on its limited resources and. Growing misuse and demands for its goods and services are resulting in rapidly intensifying land degradation and land desertification globally (Wisner, 1988; Humi, 1990; Nyssen *et al.*, 2004; Mitiku, 2006). Environmental changes induced by stressors (e.g., climate change) and dissolution of ecosystem stability are further dwindling the ability of the land to respond resiliently to both natural and anthropogenic pressures. According to recent reports, our earth loses 24 billion tons of fertile soil and 15 billion trees per annum, which costs the global economy about \$40 billion (UNEP, 2016).

Rising large-scale transnational agricultural farmland acquisition results in additional pressure to host countries in developing countries such as Ethiopia where it is becoming evident that 'the limits of lands, which are suitable for agriculture are being reached' (Mitiku *et al.*, 2006:15). The demand for further swatches of arable land persists, both the figures and concerns related to on land deals keep rising. The large-scale commercial land acquisition, however, is full of debate, hype and scepticism fearing that it may not provide results as intended (Hall, 2011).

The mere reflections concerning the land deals are much rhetoric and hype which lack analysis of the real situation on the ground. In addition to the usual term 'land grabbing', such as in Cotula *et al.* (2009) and many others, it is stated in many other different forms. For instance, 'neo-colonialism'(Robertson & Pinstrup-Andersen, 2010), 'foreignisation of space' (Zoomers, 2010), 'green grabbing'(James *et al.*, 2012), and 'security mercantilism' (McMichael, 2013). Transnational Institute, i.e., TNI (2009) associated the phenomenon with a continent and described it as 'agrarian colonialism' and 'another scramble for Africa'. Peluso & Lund (2011) associated the term with the broader navigation for power and dubbed it 'control grabbing'. Others also described it as 'developmental outsourcing'(Hofman & Ho, 2012), 'the global farms race'(Collins, 2013), and 'global land and water grabbing'(Cristina *et al.*, 2012). Though much is already described from ideological perspectives and relatively better information about its drivers, preliminary evidence is lacking especially from countries considered as destinations for the global land deals. Therefore, there is a need for empirical investigation particularly on the features of land acquisitions, the interactions between commercial companies and local communities, and the post-deal environmental and socio-economic effects (Cotula *et al.*, 2009; Azadi *et al.*, 2013).

1.2 Research into large-scale transnational land acquisition

Studies on the contemporary large-scale commercial land acquisitions are part of emerging areas of study which follow the 2007-2008 world food price crisis. It was first articulated in October 2008 when GRAIN (2008) published a report known as ‘Seized! The 2008 land grab for food and financial security’, and today it is among the interdisciplinary thematic areas of investigation. A substantial overview of the literature appeared (e.g., Cotula *et al.*, 2009; James *et al.*, 2012; Zoomers, 2010; Borras *et al.*, 2011) and those stated in the background section of this dissertation). Besides, chapters in this dissertation summarized pertinent issues of the existing literature, for instance, the chapter on transnational land deals and the quest for inclusive land governance. Therefore, the general literature review presented in this initial chapter focuses only on the relevant issues of the dissertation which deals with the effects of large-scale transnational commercial land deals on environment and livelihood.

1.2.1 Land deal or land acquisition: What is it?

In this dissertation, a transitional land acquisition is expressed as 'land deal' or simply 'land acquisition.' According to the available plethora of literature, the term is represented using a controversial phrase of ‘land grabbing’ with many and different explanations. However, the most comprehensive one is provided by Borras *et al.* (2012:851) as:

...the capturing of control of relatively vast tracts of land and other natural resources through a variety of mechanisms and forms involving large-scale capital that often shifts resource use to that of extraction, whether for international or domestic purposes, as capital’s response to the convergence of food, energy and financial crises, climate change mitigation imperatives and demands for resources from newer hubs of global capital.

Although ‘land grabbing’ is commonly assumed to happen only in the global South, some analyses show that it also prevails in the global north, for instance Europe (TNI, 2013), USA (NFFC, 2012), Latin America and the Caribbean (Borras *et al.*, 2012) and Canada (Khamla & Alexandre, 2015). One of the points of contention is about the size of land involved in the transactions to be large-scale land deals. Some considered an area of 1000 hectares and above such as Borras *et al.* (2012), while other stick to 200 ha and above (Anseeuw *et al.*, 2012; Joshua *et al.*, 2013; Rulli *et al.*, 2013). Some associate the term ‘mega’ as the denotation for land greater than 10,000 ha while assigning the term ‘large-scale’ to 500-10,000 ha

(Deininger *et al.*, 2011). Therefore, the size depends on research objectives, context, and scope. Besides, those who acquire land may not only be companies, but they could also be individuals with or without ancestral origin in the country where land is dealt. In the dissertation, the focus is on large-scale transnational land acquisition where the term ‘large-scale’ refers to the size of land dealt, and it is greater than or equal to 200 ha (Anseeuw *et al.*, 2012; Joshua *et al.*, 2013; Rulli *et al.*, 2013).

1.2.2 Drivers of land acquisition

Many points are stated in the literature about what drives land acquisition. Unlike the features and impacts of land acquisition, its drivers have better explored.

Driver 1: Offshore farming. ‘Food insecure’ governments viz. China and the Gulf States that depend on imports to feed their citizens, lease or buy vast farmlands abroad. The destinations are mainly in Africa, Latin America, and some parts of Asia including countries such as in Madagascar, Ethiopia, Uganda, Philippines, Indonesia, Laos, Thailand, Cambodia, Burma, Argentina, Ukraine, Kazakhstan etc (GRAIN, 2008; Cotula *et al.*, 2009; Zoomers, 2010).

Driver 2: FDI in biofuel and non-food agricultural commodities. The global demand for non-food agricultural products and biofuels is the second leading cause for the acquisition of land on a large-scale basis (Afionis, 2012; GRAIN, 2008; McMichael, 2012). Private investors were interested in biofuel and actively involved for securing land in Brazil, Argentina, Malaysia, Indonesia, Tanzania, Ethiopia, Madagascar, Laos, Mozambique, Zambia (Locke & Henley, 2013; Sulle & Nelson, 2009). According to EPFL (2012), for instance, more than 140,000 ha of land was outsourced in Ethiopia for biofuel plantations such as jatropha, palm, castor, candlenut, and sugarcane-for-ethanol though how much efficient the sector currently is still an attractive area of investigation.

Driver 3: Ecotourism, development of nature reserves and protected areas. International organizations and private individuals have actively engaged in dealing large tracts of land in ‘empty or free’ areas for the conservation of nature and ecotourism. Many of the projects and schemes associated with initiatives such as REDD (Reduced emissions from deforestation and Forest Degradation). For instance, in Africa (e.g., Ghana, Ethiopia, Kenya), Asia (e.g.

Indonesia, Laos, and Vietnam), Latin America (e.g. Brazil, Mexico and Costa Rica) (WHRC, 2009; Zoomers, 2010).

Driver 4: Urban extensions, large-scale infrastructure, and SEZs. The rise in investment and internationalization of business operations, many governments are freeing large tracts of land to establish Special Economic Zones (SEZs) and associated infrastructures such as ring-roads and transport stations (Gopalakrishnan, 2007; Seshadri, 2012). Such pressures for land already happened before the recent surge in large-scale land transactions though they created further pressure. For example, in 2000 about 10 million people were displaced in Cambodia, China, Thailand, and India (Cernea, 2000). According to Zoomers (2010), the greatest pressure is in peri-urban zones, and it is kept rising.

Driver 5: Rapidly growing large-scale investment in tourist complexes. Many of the developing nations are encouraging investments in the tourism sector as there is a belief that the sector contributes to accelerated economic growth. On the other side, corporates in global hotel chains are active in looking attractive strategic business locations to establish large-scale all-inclusive resorts (Hirsch, 2011). For instance, Hall (2011) explained how Gulf states were engaged in massive hunting safari deals, and encroached village lands in Africa where there were ongoing land negotiations with the government of South Africa which resulted in the displacement of local communities.

Driver 6: Land acquisition by diasporas, i.e., migrants in their countries of origin. Although it is susceptible to arguments, international migrants who reside either permanently or temporarily in the developed regions of the north such as in USA and Europe are active in purchasing or leasing land in countries of their origin (Aderanti *et al.*, 2008; Lavers, 2012a). For instance, the Asian diaspora which was estimated around 60 million people (the leading ones are China with 35 million, India and the Philippines with 20 and 7 million respectively). Latin America and Caribbean diasporas were numbered over 25 million. Similarly, African states with millions of diaspora have contributed to the increasing amount of land acquisitions back home (Aderanti *et al.*, 2008).

Driver 7: Rapid increase in retirement and residential migration. Despite the fact that it is not like the rest of the driving forces which acquire land on a large-scale basis, the increasing retirement (or residential migration) has contributed for the rising rush to land (Zabel, 2012).

As a response to the surging costs of living, people who are aged seek comparably comfortable places to stay, mostly in a 'cheap and sunny environment that has a friendly and caring population...large groups from the USA settle every year in Central and South America' (Zoomers, 2010: 439). The preferences of living and other factors that influence lifestyle decisions could contribute to the further demand for land (Lawton *et al.*, 2013).

According to the Transnational Institute, TNI (2016), the convergence of several crises (food, fuel and energy, climate and financial) amid the rise of new hubs of global capital (BRICS economies and some middle-income nations) have paved the way for the rise of 'flex crops and commodities'. Flex crops and products are those that have multiple or flexible uses: food, fodder, fuel, and other commercial-industrial purposes. Destinations for large-scale land deals tend to produce those flex crops, e.g. soya, sugarcane, palm oil, corn, cassava and industrial trees (Borras *et al.*, 2016; TNI, 2016).

1.2.3 Features, scale and trends of global land acquisition

Much has not yet been known about the exact level of land acquisition and distribution regarding continent, crop type, and modes of acquisition. The foremost reason for this is that most of the land deals were not reported; they were not covered by the media, or they took place in secret fearing blames and protection of company goodwill (Edelman, 2013). However, even if each land deal were reported, it would still be hardly possible to pin down exact numbers for many reasons.

There are meaningful variations among sources regarding the amount of land acquired on the transnational basis that is varied among sources even if the timing of data compilation is one of the causes for the difference. As one of the first attempts to bring a comprehensive data, GRAIN (2008) published a report known as "Seized! The 2008 land grab for food and financial security", it disclosed how an emerging wave of a transnational land acquisition was sweeping the world in the name of responding to the global food and financial crises. Accordingly, it reported for 491 land deals covering about 30 million hectares (ha) spanning over 78 countries. According to the International Food and Policy Research Institute, IFPRI (2009), 25 million ha of land was transacted between 2006 and 2009. World Bank (2010) estimated 45 million ha for the period 2007-2008, Oxfam (2011) had estimated 227 million ha

since 2000 till the time of its report, and Land Matrix (2015) reported 38.92 million ha. There are also reports with much bigger figures on the total transnational land dealt. For instance, 83 million ha of land in developing countries (i.e., 1.7% of world’s agricultural area) according to Schaffnit-Chatterjee (2012). Among the prominent institutions which are developing databases about land deals includes GRAIN (<https://www.grain.org/>), Land Matrix (<http://www.landmatrix.org/>), Land Coalition (<http://www.landcoalition.org/>), and Transnational Institute (TNI) (<https://www.tni.org/en>).

Regarding the drivers of international land acquisition, it is important to put a figure on the size of each land use. From the total number of transnational land deals, the share of a particular land use driver is computed from databases. According to databases at Land Matrix (2015), while food crops (38%) and biofuel (20%) took the bigger share, other drivers constitute non-food agricultural commodities (for instance cotton and fiber) (11%), forestry (13%) and others (18%). According to recent evidence 36.5 million ha of land has dealt for food (9%), non-food(32%), and flex crops (16%), and multi-use, i.e., several crops in different categories (43%) (Land Matrix, 2016). According to Land Matrix database, the patterns of transnational land acquisitions, former land owner, land cover and land use of the deals involved are presented in Tables 1.1 and 1.2. In multinational land acquisition reports, it is indispensable to notice how the reports are made, i.e. either on the number of deals conducted or on the size of the land marketed. Interms of geographic destinations of deals, regarding total land size dealt so far, Land Matrix (2016) reported as Africa (47%), America (14.5%), Asia (15.1%), Europe (16.4%), Oceania (6.415).

Table 1.1 Global patterns of transnational land acquisitions

Size (ha)	Number of concluded deals	Concluded deals with known implementation status	Projects in start-up phase or in operation	
			Number	Percentage
200 - 2000	209	157	138	88
2001 – 5000	155	131	114	87
5001- 10,000	253	185	164	89
10001-20,000	143	107	92	86
20,000-50,000	149	120	103	86
50,000-200,000	100	81	65	80
> 200,000	34	23	17	74
No information	32	17	13	76
Total	1,075	821	706	86

Source: Data bases at Land Matrix (2015)

Table 1.2 Former landowner, land cover and land use of the global land deals involved

Former owner	Concluded deals		Concluded deals with known implementation status		Projects in start-up phase or in operation			
	Number	('000ha)	Number	('000ha)	Number	%	('000ha)	%
State	133	6,502	115	4,109	100	88	3,719	91
Private (smallholders)	64	1,293	48	674	42	88	566	84
Private (large farms)	92	5,718	85	5,288	79	93	4,656	88
Community	76	3,405	64	2,542	48	75	1,429	56
No information	710	22,000	509	14,686	437	86	11,332	77
Total	1,075	38,918	821	27,298	706	86	21,703	80
Former cover								
Cropland	169	4,529	153	3,838	138	90	3,093	81
Forest	77	6,409	71	6,057	63	89	5,914	98
Shrub/grassland	14	2,570	12	288	8	67	257	89
Marginal land	49	1,881	44	1,770	33	75	670	38
No information	766	23,528	541	15,344	464	86	11,768	77
Total	1,075	38,918	821	27,298	706	86	21,703	80
Former use								
Smallholder agri	107	4,168	103	4,109	96	93	3,712	90
Commercial agri	156	3,997	125	3,163	104	83	1,626	51
Pasture	9	556	7	554	4	57	375	68
Forestry	35	3,592	31	3,262	29	94	3,245	99
Conservation	16	273	9	247	7	78	212	86
No information	752	26,331	546	15,963	466	85	12,533	79
Total	1,075	38,918	821	27,298	706	86	21,703	80

Source: Data bases at Land Matrix (2015)

1.3 Aims and research questions

Even though our understanding of the essence and drivers of land acquisitions has relatively improved, there are opportunities for further study. The dissertation is constructed with seven specific objectives for which a separate chapter is outlined for each. First, while the concept of 'land grabbing' per se is so contested and under work-in-progress, literature on global land

acquisition or land deals has extensively described possible drivers and trajectories. Some argue for inclusive, participatory and win-win land deals without addressing which groups of stakeholders [with what power and interest] to take part in the deals. Second, irrespective of the name or labeling attached to the phenomenon, it is important to scrutinize the sustainability of ‘transnational land deals’ (TLDs) from the perspective of investors, host governments and local communities at least using the knowledge that has been generated so far. This could be done in consideration with the three dimensions of sustainability, the ‘social acceptability’, ‘economic viability’ and ‘environmental conservation’ of the TLDs.

The third objective deals with the features of large-scale transnational land deals (LSTLDs) in the South (where Ethiopia is a case in point), and their consequences. There is a usual presumption across emerging literature that large-scale transnational land deals (LSTLDs) are predominantly driven by global forces (push factors) from the developed north, and hence they are the leading in acquiring land in the developing countries of the South. To substantiate or disprove assumptions of such type, it is indispensable to explore the features of transnational land acquisition from the context of a developing economy in the global south. Ethiopia, one of the principal destinations to the translational land acquisition is the case in point. In the fourth objective, the effectiveness (i.e., the level of operational progress made by investors) is dealt with. The environmental effects of transnational land deals are explored in the fifth objective. While the investor-local people interactive (ILPI) outcome is examined in the sixth chapter, the livelihood effects of transnational land deals is investigated in the seventh chapter. The overall aim of the dissertation is:

To analyze the features and level of inclusiveness of large-scale transnational commercial land deals, and investigate their effects on environment and livelihood with cases from the Benishangul-Gumuz region (Ethiopia).

This major aim can further be refined in to seven more specific questions.

1. Which conceptual land deal framework better justify for the governance of transnational land deals?

Many have argued towards participatory or inclusive land deals without addressing which groups of stakeholders vested with which power and interests in the deals. Some empirical studies propose land deals should be carried out in a more responsible way and should

consider the interests of different stakeholders (de Graaf & Slager, 2009; Stephens, 2013). The need exists to bridge the gap between ‘generalised’ and ‘contextualised’ knowledge (and information) concerning the transnational land acquisition. Most of the generalized conceptualisations and sources neglect the importance of powerless and powerful (yet uninterested) stakeholders in deals surrounding land use (Amanor, 2012; Anseeuw *et al.*, 2012). Azadi *et al.* (2013) described possibilities for win-win land deals or ‘green deals’. A ‘win-win’ situation is a necessary but not sufficient condition for land deals to become inclusive or green deals. To end with an inclusive land deal, the need exists to broaden the groups of stakeholders (i.e., in addition to the investor and investee) according to relevant parameters of power and interest for land. The subject is dealt with in the 2nd Chapter of this dissertation.

2. Given the three dimensions of sustainability, the ‘social acceptability’, ‘economic viability’ and ‘environmental conservation’ of the TLDs have been studied, how much sustainable are transnational land deals (TLDs) for investors, host governments, and local communities?

Some scholars such as Margulis *et al.* (2013:1) argue that ‘the character, scale, pace, orientation, and key drivers of the recent wave of land grabs is a distinct historical phenomenon closely tied to major shifts in power and production in the global political economy.’ Azadi *et al.* (2013), for instance, have recently studied TLDs and divided them into four categories; i.e., loss-loss, loss-win, win-loss and win-win deals. According to them, the ‘win’ or ‘loss’ outcome relates to the two parties in TLDs: the investor(s) and investee(s). In addition to their classification, it is important to include a third party and therefore studies three main stakeholders as follows: the investor(s), the host country’s government and the host country’s local community; mainly local (small-scale) farmers. Accordingly, the ‘win’ or ‘loss’ for the different stakeholders should be discussed in the framework of sustainability, which can be decomposed into three dimensions: the political, socio-economic and environmental aspects of sustainability. This research question is investigated in chapter 3.

3. What are the features of large-scale transnational land deals (LSTLDs) in the South (where Ethiopia is a case in point), and what are the emerging consequences?

To better understand land deals in a nation, it is important to answer fundamental questions. For instance in Ethiopia, the question ‘how and how much commercial farmland has been

leased in Ethiopia so far?’ Should be answered. Some authors attempted on it, but all of them stated limitations in their pursuit of arriving at an estimated figure. For instance, World Bank *et al.* (2010) estimated a total of 1.2 million ha of Ethiopian land was transferred to transnational investors while the Global Land Project (GLP) estimated the entirety of the commercialized land in Ethiopia was between 2.9 – 3.5 million ha (GLP, 2010). Others reported 2.5 million ha (Vhugen, 2010), 1.19 million ha (Deininger *et al.*, 2011), or 3.5 million ha (Dessalegn, 2011). So, how much land is dealt in Ethiopia? With what price and modalities of acquisition? What are the major crop focus areas in the commercialization of land? The recurring transnational land acquisition is understood as part of the global agribusiness transactions which are predominantly North-South investment deals (GRAIN, 2008; Zoomers, 2010). Some presume that the decline of North-South collaborations and the ascent of South-South socio-economic cooperation is a precursor for the new configurations of global power (Margulis *et al.*, 2013). Which one takes place in the context of Ethiopia? With unveiling plenty of issues related to LSTLDs and narrated a typical lessor-lessee dispute, explanation is provided for the questions in Chapter 4.

4. How much effective is the commercialization process of farmlands so far concerning the expected payoffs from agricultural investment in the Benishangul-Gumuz region of Ethiopia?

According to initial databases at the Ministry of Agriculture in Ethiopia in 2013 (MoA, 2013), 2.11 million ha of the total 11.5 million ha potential land was already given to investors. From the amount stated, 600,254 ha is the share of the Western Ethiopian lowland state called the Benishangul-Gumuz region (EIA, 2012). From the perspective of the stated region, the following key research questions are considered: (i) What are the key institutional frameworks which shaped the contemporary land governance in Ethiopia? (ii) How effective would the integration and harmonization of large-scale commercial farming with other development projects be?, and (iii) How much effective is the land lease process regarding integrated land use, and economic, social, and environmental payoffs of agricultural investment? All these are issues discussed in Chapter 5.

5. What are the environmental responses on land deals? That is, what are the effects of commercial farms on peak discharge and suspended sediment concentration (SSC)?

Sustainable hydroelectric power development requires conservation of upstream catchments because sediment deposition can be a threat to downstream reservoirs (Adams, 1989; Devi *et al.*, 2008). The Government of Ethiopia is constructing Africa's largest hydroelectric power station on the Blue Nile River called the Grand Ethiopian Renaissance Dam (GERD) in the region where land is on transfer to large-scale commercial farmers. On the other hand, the Nile basin is characterised by severe land degradation and variability of river discharges (Bewket & Teferi, 2009; Frankl *et al.*, 2011; Nyssen *et al.*, 2004). Given the commercialization of large tracts of land in the closer upper catchments, the effects of commercial farms on peak discharge and suspended sediment concentration (SSC) in catchments around GERD has not yet explored. This research issue is dealt with in Chapter 6.

6. What determines the investor-local people interaction (ILPI) outcomes?

According to literature, the acquisition of large-scale lands by commercial farmers or investors sparked life-and-death struggles (Borras & Franco, 2013; Tsegaye, 2015). In Ethiopia, preliminary evidence is emerging. For example, Maru & Rutten (2015) explored how commercialization of farms on large-scale basis adversely affected local people in Oromia region while Tsegaye (2015) put his preliminary observation in the Benishangul-Gumuz region. However, contributions made so far in Ethiopia or elsewhere, approached interactions in large-scale land acquisition unidirectionally. That is, the reaction of local populations towards the commercial land acquisition, focusing on 'reactions from below', i.e., missing the 'cooperation' component (Borras & Franco, 2013). However, there could be a collaboration between commercial farmers and local people which probably results in positive outcomes, for example in the case of win-win (Azadi *et al.*, 2013) and inclusive land deal conceptual scenarios (Dereje *et al.*, 2015). Besides, the types of investor- local people dyadic interactions and the factors that underpin them remain unknown. Knowledge about the local level interaction between large-scale commercial companies and residents is, therefore, necessary for a better understanding of global land deals vis-à-vis local development processes. Besides, the contribution of local governance systems (in our case a regional constitution) in addressing investor-local people interactions is, therefore, unraveled in Chapter 7.

7. What is the effect of Large-scale transnational land deals (LSTLDs) upon the livelihood of indigenous communities?

Previous studies considered the effects of the large-scale land acquisition on the food security status of local people and suggested measures. The World Bank *et al.*(2010) have argued that acquisitions can result in win-win outcomes for hosting countries and investors, provided that the inward investment is properly managed. Rosset (2011: 21) proposed ‘genuine agrarian reform and sustainable peasant agriculture’ as a solution for confronting land grabbing amid the food and climate crises. According to Golay & Biglino (2013), large-scale land acquisitions should be examined from the standpoint of a right to food as well as the responsible governance of the tenure of land, forest, and fisheries. However, even if inward investments may be managed properly, they have less poverty-reduction impact and high opportunity cost compared with the alternative uses of land by local communities (De Schutter, 2011). In the case of Ethiopia, Lavers (2012a) have reported that expropriation of land to investors can unfavorably affect the income and food security status of local people yet without quantifying the degree of the impact. The contribution from Maru & Rutten (2015) is probably the first attempt to determine the level of impacts that large-scale farming has upon local communities’ food security and income levels in the Oromia region, Ethiopia. However, the situation in one of the regions (i.e., the Benishangul-Gumuz region) which is among the prominent destinations in hosting commercial farms in western Ethiopia has not yet explored, and it is the subjects of Chapter 8.

1.4 The study area

1.4.1 Ethiopia: location and socioeconomic situation

Ethiopia is a country located in the Horn of Africa (Figure 1.1) and is recognized as one of the fastest growing countries with a total area of 1.14 million km², of which 45% is arable (EIA, 2013). With a projected population of 99.4 million in 2015, it has a population density of 87 persons km⁻² and an annual population growth rate of 2.4% (United Nations, 2015). Over the period of 2004 – 2014, the country has scored a real Gross Domestic Product (GDP) growth of 10.9% (MoFED, 2010; World Bank, 2015). Taking the national average population growth

of the country into account, the average real GDP growth per capita is 8% per annum. In the period of 2000 – 2014, the country’s human development index (HDI) has improved from 0.284 to 0.442, implying 55.6% increase with an annual incremental rate of 3.21% (UNDP, 2015).

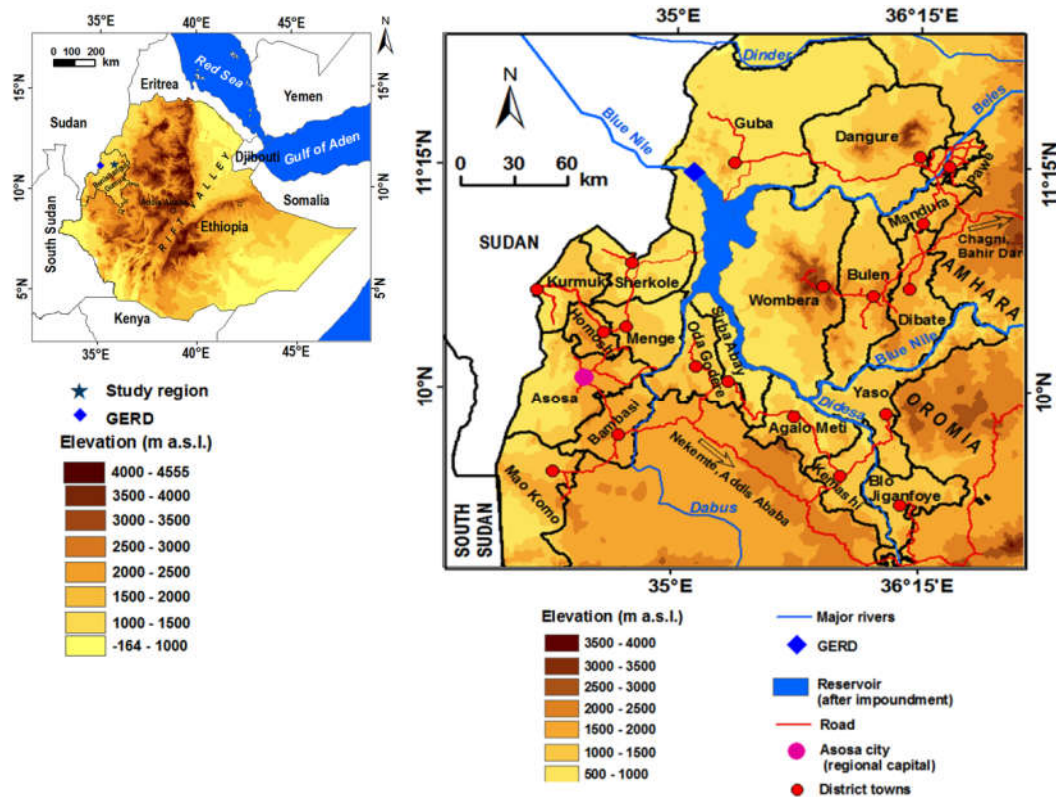


Figure 1.1 Location and altitude map the study area (the Benishangul-Gumuz region)

Especially since 2004/2005, Ethiopia is an economically fast growing country with an economic growth performance above the world average and sub-Saharan average according to the annual growth in its domestic product (GDP) (Figure 1.2). Next to the services sector, agriculture is the second largest contributor to the increase in the GDP in the country followed by industry (Figure 1.3), and it is visibly how the economy fluctuates with the performance of the agriculture sector. It is also seen that that contribution of agriculture to the growth in GDP is on the decline as the service and industry sectors are starting to contribute better. The growing national economy of the country is accompanied with a fast growing population of Ethiopia which demands further employment opportunity (United Nations, 2015). Therefore, working on more labour intensive or labour absorbing economic sectors has become necessary. The desire to speed up the economic growth of the country and to generate

employment opportunities for the growing population were among the key drivers to the government of Ethiopia to commercialise large swatches of land.

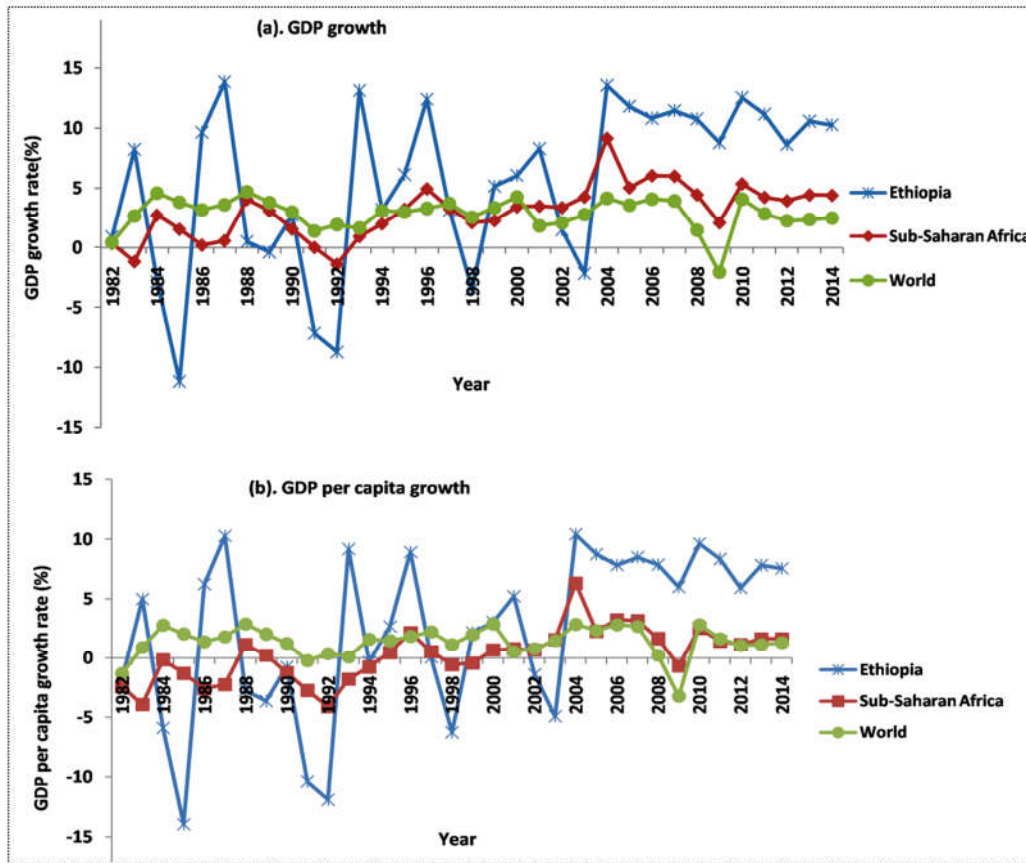


Figure 1.2 GDP and GDP per capita growth. Computed from World Bank (2016)

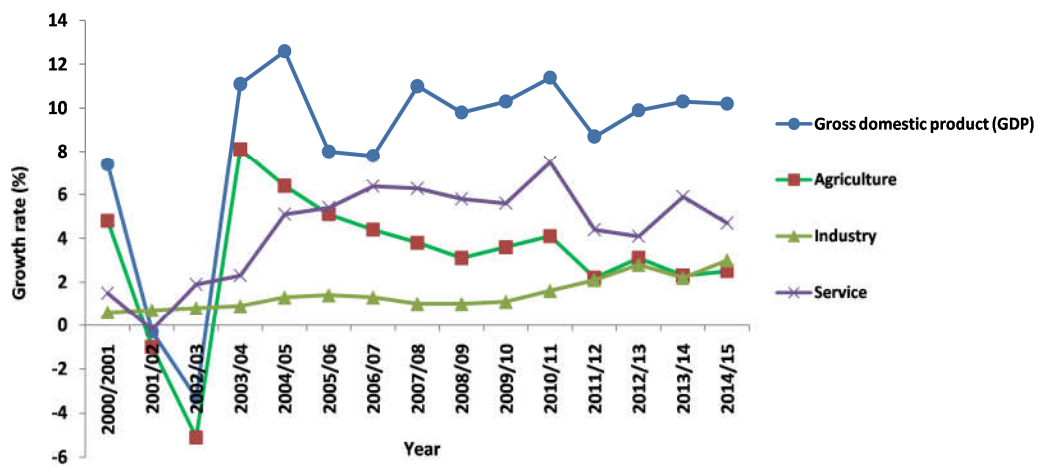


Figure 1.3 Sectoral contribution to GDP in Ethiopia. Computed from NBE (2016)

1.4.2 The Benishangul-Gumuz region

1.4.2.1 Location

The Benishangul-Gumuz region of Ethiopia is the case study region for the dissertation. It is a low-lying peripheral region, located between the plateau of *Injibara*, i.e., the western escarpment of the Ethiopian highlands, and the Sudanese and South-Sudanese borders; approximately between 11°00' – 11°30'N and 35°30' – 36°00'E (Figure 1.1). The region is one of the nine regional states which was established in 1995 according to the federal constitution of Ethiopia (GoE, 1995).

1.4.2.2 Climate and topography

The average annual rainfall of the region is 1280 mm but varies considerably between 800 – 2000 mm. The summer rainfall (July-September) accounts for the 85% of the annual precipitation. Each with an average monthly maximum temperature of 32 °C and average monthly minimum temperature of 17 °C, February, March, and April are the hottest months of the year in the region. July and August are colder months both of which with an average monthly maximum temperature of 25 °C and mean monthly minimum temperature of 15 °C. November is characterised by its lowest monthly average minimum temperature of 14 °C though its mean monthly maximum temperature is 27°C. Agro-ecologically, the Benishangul-Gumuz region is divided into lowlands (*kola*), covering about 75% with altitude below 1500 m a.s.l., midland (*woina dega*), about 24% of the region with 1,500-2,500 m a.s.l. and high land (*dega*) about 1% with altitude above 2,500 m a.s.l. Temperature reaches a daily maximum of 20 °C to 25 °C in the rainy season and rises to 35 °C to 41°C in the dry season. The daily minimum temperatures range from 12 °C to 20 °C, depending on altitude and season.

Topographically, the area consists of areas 580-3,131 meters above sea level (m a.s.l.), and it is predominantly lowland. There are few mountainous terrains such as the Belaya and Dangure mountains. Among the Ethiopian great rivers, four of them namely the Blue Nile, Beles, Dabus, and Didesa cross the region. Kuls (1962) noticed that the area is quite different from the highlands which were largely deforested and mostly occupied by bare arable land and pasture surfaces, dense savannah woodlands more or less cover the entire lowland closer

to Beles river. However, recently vegetation in the area is under severe pressure especially following large-scale agro-industrial projects and encroachment (Dereje *et al.*, 2016).

1.4.2.3 Population

Several ethnic groups inhabit the region but none of them constitutes more than 50% of its overall population. With an estimated area of 50,700 km² (BoFED, 2011), the Benishangul-Gumuz region has twenty districts. According to the census in 2007, the regional population was 784,345 forming 174, 445 households (CSA, 2010). The regional community groups, population size and regional parliamentary seats allotted for each group resided in the Benishangul-Gumuz region are summarized in Table 1.3.

Table 1.3 Community groups, population size and regional parliamentary seats allotted for each group resided in the Benishangul-Gumuz region

Community group	Population size ¹	Seats at regional parliament For the period: 2000-2015 ²		
		2000-2004	2005-2009	2010-2015
Titular communities				
Berta	199, 303 (25)	41 (41)	35 (35)	39
Gumuz	163,781 (21)	35 (35)	35 (35)	35
Shinasha	60, 587 (8)	11 (11)	10 (10)	11
Mao	15,384 (2)	2 (2)	2 (2)	2
Komo	7,773 (1)	-	2 (2)	2
Titular:total	446,828 (57)	89 (89)	84 (84)	89 (89)
Non-titular communities				
Amhara	170,133 (21.7)	11 (11)	16 (16)	10 (10)
Oromo	106, 275 (13.5)			
Agew-Awi	33,061 (4.2)			
Tigris	5,562 (0.7)			
Others	22, 487 (2.9)			
Non-Titular: total	337,517(43)	11 (11)*	16 (16)*	10 (10)*
Titular and Non-titular	784,345 (100)	100 (100)	100 (100)	99 (99)
Gender composition				
Female	385,690 (49.2)	12 (12)	10 (10)	14 (14.10)
Male	398,655 (50.8)	88 (88)	89 (89)	85 (85.90)
Total	784,345 (100)	100 (100)	100 (100)	99 (100)

Sources: ¹National Population Census Commission (2010); ²Office of the Benishangul-Gumuz regional council. Numbers in the brackets indicate percentages. *There is no seat assigned for each non-titular ethnic group but seats are assigned aggregately as ‘seats for other ethnic groups’.

According to the regional constitution, there are two groups of communities: the titular and the non-titular community (or ethnic) groups; considering the former as ‘native to the region’ and others not. Accordingly, while the Bertha, Gumuz, Shinasha, Mao, and Komo are titular

members of the region, the Amhara, Oromo, Agaw-Awi, Tigrie and many others are non-titular community groups (GBGR, 2002).

1.4.2.4 Socio-economic profile

For ages, shifting cultivation (with a slash and burn practice), subsided with gathering, hunting, fishing, and production of honey is the primary livelihood strategy of the indigenous communities (Kuls, 1962, Abdussamad, 1995; Dereje *et al.*, 2016). Besides, communities in the region engage in traditional gold mining activities and recently some employment is generated in commercial farms. Recently, communities have started to practice smallholder farming. There are also some communities in the region with full engagement on smallholder farming. The Benishangul-Gumuz region is one of the administrative states where most dramatic changes are taking place (Lavers, 2012b). Notwithstanding their age-old slash and burn land use practices they have started conventional farming methods which are free from shifting cultivation. Recently, especially following the acquisition of commercial farmlands by investors and the villagization or resettlement program in the region, the communities have started a confined and sedentary intensive cultivation.

Among the local communities land resources are communal properties and the rights to access them are originated from the clan. For ages, clans were the ultimate or real owners of land among the indigenous communities in the region. Within their clan territory, individual clan members enjoy possession right over land. They get land to be cleared and cultivated for 2-3 years, and when a decrease in yield is observed, they leave it fallow for 3-5 years. In such a land use process, sometimes clan members may abandon their village temporarily and move to a new fertile place within their clan territory.

As a communally accepted tradition, they do not move to new places indefinitely, rather they move and stay for some time and return to their original village which they abandoned and left it to regenerate. Within all such moves, though sometimes there is conflict within and between clan members, they resolve it through their customary land administration systems. The Gumuz also have a superb but almost abandoned culture of alternative (indigenous) interethnic conflict resolution techniques, called *Tenba*. Whenever the Gumuz enter into a conflict with Highlanders (Amhara, Oromo, Shinasha, and Agaw), the Gumuz called them all 'Red'; they involve in another traditional conflict resolution technique called *Michu*. *Michu*, literally mean friendship, is a historically successful traditional interethnic conflict

resolution method which seeks for the establishment of an environment of tolerance and mutual understanding.

1.5 Organization of the dissertation

The dissertation comprises seven academic papers from which six have either been published in international peer-reviewed scientific journals, on review, or submitted. One of the chapters (i.e., Chapter 8) is under preparation to be submitted to a journal. Each of the papers discusses one of the seven previously stated research questions. To assist any reader to go through the papers independently of each other, an inevitable overlap may appear in some of the chapters regarding basic introductory concepts, literature reviews, and descriptions related to study area and methodological designs. Furthermore, bear in mind that the prevalence of some differences in abbreviations, spelling, terminology and referencing style reflect the preferences of the particular journal where the paper is published or submitted. Schematically, the dissertation is organized as follows (Figure 1.6).

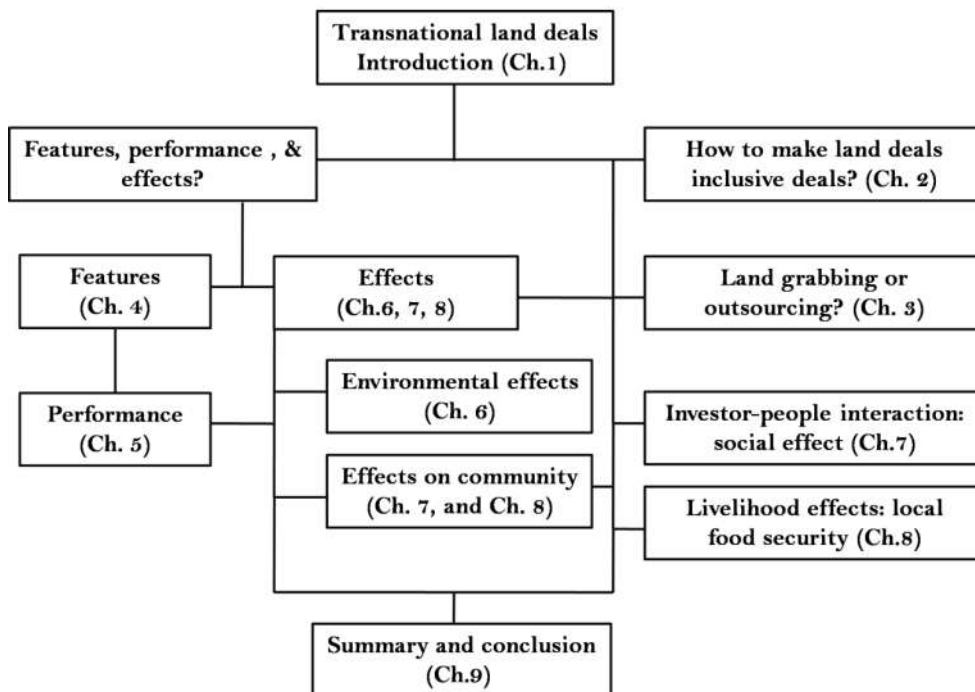


Figure 1.4 Dissertation outline

Bear in mind also that throughout the dissertation, ‘land deal’ is used interchangeably with ‘land acquisition’ or ‘land transaction’, ‘companies’ are used interchangeably with ‘investors’

or ‘commercial farmers’, and ‘transnational land deal (TLD)’ refers to ‘large-scale transnational land deal (LSTLD)’.

Chapter 2, which is published in *Land Use Policy* as Dereje *et al.* (2015), extended the stakeholders theory of management to the global governance of transnational land deals. Land acquisitions are recommended to occur via inclusive deals that will result in a ‘win-win’ outcome (Azadi *et al.*, 2013). Answering key operational questions in this process is important, i.e., Who are the key players in the deal? What are their interests? How influential are the dealers involved? Land grabbing also highlighted as ‘control grabbing’, which presages a grasping ability to control land and the accompanying basic resources to reap benefit from holding such resources (Peluso and Lund, 2011; Borrás *et al.*, 2012b). Understanding the groups of stakeholders and to what extent their interests and power influence the deal will aid in formulating inclusive and win-win land deals both in *de jure* and *de facto* contexts. Investors who acquire land usually enter into land contracts to address their strategic business interests and deal strategically, whereas actors on the side of the lessor (i.e., local government, local communities, and households) may not have such strategic intent and power. Consequently, the need exist to integrate the “power” and “interest” of the dealers in acquisition of agricultural land. Extensive review of the scientific literature is carried out both in the areas of transnational farm land acquisition and the Stakeholder Theory of Management (Freeman, 1984).

In Chapter 3, which is published in *Landscape Ecology* as Vandergeten *et al.* (2016), a comprehensive investigation is made about the (un)sustainability of ‘transnational land deals’ (TLDs). Assessment is carried out from the three dimensions of sustainability, i.e., the ‘social acceptability’, ‘economic viability’ and ‘environmental conservation’ of the TLDs have been studied. To understand whether and to what extent the TLD is sustainable in each dimension, a systematic review was conducted on 73 scientific publications.

Chapter 4, submitted for publication as Dereje *et al.*, 2016a, continues and adds to the features of large-scale transnational land acquisition. Which means, how commercial farmland has been leased in Ethiopia so far and implications to the dynamics of the conventional understanding about north-south transnational land deals? Besides, the demand for large-scale land and its supply processes, the pricing, and emerging issues between contracting parties, i.e. companies and the government of Ethiopia are investigated. Chapter 5, published in

Sustainability (Dereje *et al.*, 2016b), started with how land-related institutional and governmental frameworks have shaped the contemporary land governance and land lease contracts in Ethiopia. It also adds to the effectiveness of the land lease process regarding economic, social, and environmental expectations from agricultural outsourcing.

While chapters 3 to 5 focuses on effects of large-scale transnational land deals from the view of sustainability, the subsequent chapters (i.e., chapters 6 to 8) consider the local effects of land deals as well as interaction of investors with local people. Chapter 6 which was submitted as Dereje *et al.*, 2016c for publication and it concerns about the environmental responses to land deals and it is a case study conducted on peak discharge and sediment transport of streams. It is a comparative study of catchments with predominantly commercial farming and catchments mainly with non-commercial farming. The mission involved in the analysis of land use classes, measurement of gullies, suspended sediment sampling (SSS), and calibration of suspended sediments in a soil laboratory.

Chapter 7, based on Dereje *et al.* (2016d) and which is submitted to a journal, explores transnational land deals from a regional perspective and investigates investor-local people interactions and the factors that underpin them. The empirical analysis utilizes survey data from the Benishangul-Gumuz region, a topographically low-lying region of Ethiopia. Descriptive statistics and ordinal regression model (ORM) were used to generate results. By doing so, the chapter reveals whether commercial farmers are in a collaborative, confrontational, disputed, confirmatory or latent relationship with local people. Factors that determine investor-local people relationship are explored. Chapter 8, is a working paper and to be submitted for publication as Dereje *et al.* 2016e, analysed the effects of land deals upon the income levels and food security status of local/ indigenous communities and stated key research issues for further investigation.

Finally, chapter 9, relates the main findings of the previous chapters to the stated seven research questions. Furthermore, themes which can be considered for further analysis are described. The chapter ends with remarks for policy amendment about land use and agricultural investment management in Ethiopia in general and the Benishangul-Gumuz region, western Ethiopia in particular.

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Chapter 2 Transnational land deals: Towards an inclusive land governance framework

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Abstract The literature on global land deals or land acquisition has extensively described the possible drivers, trajectories, and their impacts. In addition, the concept of a ‘land grab’ per se is heavily contested and viewed as a work in progress. Many have argued on the topic of inclusive land deals without addressing which groups of stakeholders are vested with particular powers and interests in the deals. After reviewing this phenomena in contemporary global land deals and the stakeholder theory of management developed in the 1980s, this chapter proposes a conceptual land deal framework. Accordingly, the actors in land deals are characterised and disaggregated into seven generic groups, i.e., “inactive”, “discretionary”, “exigent”, “dominant”, “dangerous”, “dependent”, and “definitive”. The chapter concluded that to address the governance challenges in land deals, a need exists to resolve conceptualisation deficiencies related to inclusive land deal frameworks. Thus, this work suggests that extending the stakeholder theory of management to the global governance of transnational land acquisition can significantly aid in resolving conceptualisation limitations for inclusive transnational land deals. Hence, a new inclusive land deal framework was developed that attempts to integrate the biophysical environment, stakeholders, governance, and institutions. Furthermore, this chapter recommends that contextualisation of the suggested “land deal power-interest clustering (LD-PIC)” and “legitimacy-interest-power (LIP)” frameworks to those already signed and ongoing land deals using real-world data is a timely concern.

2.1 Introduction

2.1.1 Large-scale agricultural land acquisitions

Following the food and fuel price spikes in 2007-2008, a global interest in farmlands has arisen. As a result, transnational land acquisitions have gained the attention of governments, international development institutions, media, and non-governmental organisations in recent years. Aspirations for capital export, demands by food importing nations to secure reliable supplies of food, an increasing desire for alternative sources of energy, and land speculation are among the factors that contributed to the increase of agricultural production (GRAIN, 2008; Cotula *et al.*, 2009; Anseeuw *et al.*, 2012; Borras *et al.*, 2012a).

De Schutter (2011) and Azadi *et al.* (2013) restated the reasons behind large-scale land acquisitions as: (a) a rush towards alternative fuel energy extraction from agro-fuels for which developed countries have encouraged transnational land acquisitions, (b) increasing population and urbanisation accompanied by the collection of natural resource bases in certain countries, (c) access to freshwater (a scarce resource), (d) rising demand for raw materials from tropical countries (primarily fibre, wood, etc.), (e) the increasing need among companies in the developed world to earn certified emission reduction credits from carbon storage projects, and (f) continued speculation on the future market prices of farmland, regardless of location.

Large-scale agricultural land acquisitions have repeatedly raised 'land-grab' concerns and have resulted in the destruction of natural ecosystems and displacement of local communities (FAO, 2009; Deininger *et al.*, 2011; Cotula, 2011; Azadi *et al.*, 2013). Although the contemporary views on large-scale agricultural land acquisitions are contested, many of the arguments revolve around the disputed and evolving concept of 'land grabbing'. Many have argued that 'land grabs' target large-scale acquisition of land in Africa, Central America, and South and East Asia (Cotula *et al.*, 2009; Desalegn, 2011; Wilkinson *et al.*, 2012). Others argue that the geographic scope of land grabbing is not only confined to the stated regions but also extends to such areas as the previous Union of Soviet Socialist Republics (USSR), Eastern Europe, the Middle East, Melanesia, Australia, and New Zealand (Visser and Spoor, 2011; Anseeuw *et al.*, 2012). According to Amanor (2012), the acquisition of land extends beyond the phenomenon of global 'land grabbing' to the consolidation of power over the

trans-regional value chain in particular and a component of the global ‘mission’ to control food and biofuel supply chains. Others (e.g., Harvey, 2003) have conceptualised transnational land acquisitions within the widely evolving global capitalist development framework and the distinct relationships among political economies working towards the confrontation of converging global crises in food, energy, financial capital, and climate change (Hall, 2011; White *et al.*, 2012). Furthermore, land acquisition is considered a component of the combined outcome of globalisation, the international upsurge in foreign direct investment (FDI), and the liberalisation of land markets (Zoomers, 2010).

Land acquisitions are recommended to occur via inclusive deals that will result in a ‘win-win’ outcome (Azadi *et al.*, 2013). Answering key operational questions in this process is important, i.e., Who are the players in the deal? What are their interests? How influential are the dealers involved? Without at least modest answers to such questions, merely advocating ‘win-win’ land deals may not result in an actual ‘win-win’ situation. Land grabbing also highlighted as ‘control grabbing’, which presages a grasping ability to control land and the accompanying basic resources to reap benefit from holding such resources (Peluso and Lund, 2011; Borras *et al.*, 2012b). This outcome is one of the manifestations of control grabbing, implying *seizure of large tracts of agriculturally sound land, land grab, water grab/seizure of water (re)sources* (Ganho 2011; Kay and Franco 2012) and *green grabs/seizure of resources for the purpose of the natural environment* (Fairhead *et al.*, 2012). Understanding the groups of stakeholders and to what extent their interests and power influence the deal will aid in formulating inclusive and win-win land deals both in *de jure* and *de facto* contexts. Lessees who acquire land usually enter into land contracts to address their strategic business interests and deal strategically, whereas actors on the side of the lessor (i.e., local government, local communities, and households) may not have such strategic intent and power. Consequently, the need exist to integrate the “power” and “interest” of the dealers in acquisition of agricultural land.

This chapter first reviews the contested and evolving explanations offered for ‘land acquisition’ and methodologies for global land acquisition, land deals, or land grabs. Second, this work proposes the adaptation of strategic management theories, particularly the stakeholder theory of strategic management, to devise tools that are essential for responsible global governance of transnational land acquisition. This proposal attempts to develop two inclusive conceptual land deal frameworks, i.e., “land deal power-interest clustering (LD-

PIC)” and “legitimacy-interest-power (LIP)”. In addition, this approach proposes the creation and advancement of tripartite modelling of transnational land based on the power and legitimacy of the actors and the urgency of the needs that each actor strives to fulfil. Finally, this chapter suggests issues for further review and data-based investigation. In short, this work attempts to contribute to the ongoing debates on how to ensure that global agricultural land acquisition is a more ethical and responsible investment and how to establish the power of local governance and local communities within the global land deal framework. Throughout this chapter, the word “actor” is used interchangeably with “stakeholder”.

2.1.2 Land grabbing: Contested and “work-in-progress” definitions

According to a large body of literature, there is a propensity for referring to transnational land acquisitions as ‘land-grabbing’ without setting a comprehensive definition for this term. What is ‘land grabbing?’ The contested yet most commonly applied definition of land grabbing is large-scale farm land acquisition for agricultural production by non-local or foreign investors, whether through lease or purchase arrangements (GRAIN, 2008; Cotula *et al.*, 2009; Daniel, 2009). According to Borras and Franco (2010), the term ‘land grabbing’ was preferably stated as ‘transnational commercial land transactions’ because the concept includes both domestic and transnational deals, underscoring the commercialisation feature of transactions irrespective of the size and markets for production outputs. In contrast, Graham *et al.* (2011) described ‘land grabbing’ as controlling and/or possessing land for commercial or industrial agricultural production that is not proportionate in size compared with the mean landholding in a given area, country, or region.

According to Hall (2011), the phrase ‘land grabbing’ is activist terminology that conceals larger legitimate or structural differences and the broad impacts of commercial land transactions among beneficiaries, elites, government officers, partners of different powers, and various intermediaries. FAO-funded studies on land grabs in Latin America and the Caribbean arguably stated the definition of land grabbing. Accordingly, land acquisitions are considered as land grabs if three conditions exist in the deals: (a) the size of the deal is sufficiently large with a commonly accepted threshold of one thousand hectares per deal; (b) the need exists for direct participation of foreign governments/companies, and (c) investment on the newly acquired land is expected to have a negative impact on the food security status of the host country (Borras *et al.*, 2012a, b).

The majority of the literature labels and characterises transnational land acquisition as ‘land grabbing’. The characterisation of ‘land grabbing’ is also notably (food) crisis-centred and farmland-centred as well as heavily centred on emerging players of global regimes (i.e., China, India, South Korea, and the Gulf states) and excessively centred on land acquisitions in Africa. For instance, in the case of Latin America and the Caribbean region, initiatives for food security, ventures for energy security, emerging strategies for mitigating climate change, and promising trajectories for global capital mobilisation are considered as the four key mechanisms of land acquisition. Land acquisition in Latin America and the Caribbean is characterised by its intra-regional nature, i.e., many of the companies that acquired land are Latin-based and are allied with central state and international capital sources (Borras *et al.*, 2012b). Consequently, it is important to proceed broadly from the (food)-crisis-centred definition of land grabbing, but it is also important not to define it too broadly. This statement leads us to address the distinct features of contemporary transnational land acquisition.

According to Mehta *et al.* (2012), water is both the target and driver of large-scale land acquisition because its hydraulic complexity poses a challenge in describing the entire process of water grabbing and its associated impacts on the environment and different social groups. This group defined water grabbing as ‘*a situation where powerful actors are able to take control of, or reallocate to their own benefits, water resources already used by local communities or feeding aquatic ecosystems on which their livelihoods are based*’ (Mehta *et al.*, 2012: 197). However, it is quite difficult to determine the effects of water re-allocations, particularly due to inter-annual variability and surface water-ground water interactions. The absence of meaningful institutional linkages between water and land management has eased ‘encroachment’ of the two resources. The existing ambiguous processes of global land and water governance have intensified local-level complexities and uncertainties whereby the powerful actors in deals can maximise their interests through such complexities and uncertainties to the extent of expelling poor and marginalised people (Franco *et al.*, 2013).

The size or scale of land acquired is one of the points of controversy in conceptualising and reframing ‘land grabbing’. Deininger *et al.* (2011), Oxfam International (2011), and Anseeuw *et al.* (2012) couched this scale as ‘large-scale land acquisition’, implying deals greater than 1000 hectares. However, in the work of Borras *et al.* (2012b), land grabbing involves large-scale land deals in two broadly interlinked but distinct dimensions of *the size of land*

transacted and/or *the amount of capital entailed*. In addition to the size of land in deals, the amount of capital involved is considered in (re)defining land grabbing, a definition that is labelled as ‘land measurement-oriented accounting’ of farm land acquisition. For example, the figures stated are 80 million hectares in Anseeuw *et al.* (2012), 227 million hectares in Oxfam International (2011), and 45 million hectares in Deininger *et al.* (2011). None of these entities have stated a comprehensive threshold of capital that could be used to define land grabbing.

To summarise, transnational land acquisition has passed through an evolving definition and conceptualisation in the literature. Many authors preferred that these phenomena were referred to as ‘land grabbing’, a much debatable notion per se, whereas others considered this expression to be ‘activist’ terminology. Few works in the literature have set preconditions or criteria for labelling transnational land acquisition as ‘land grabbing’. Certain of the criteria considered are the size of the land in the deal, the level of participation of foreign actors, and the size of capital investment, although a threshold for the “size” of capital has not been stated. The concept is further extended to include other resources (i.e., water) and hence is known as ‘water and land grabbing’. The redefinition and (re) conceptualisation of these terms are pursued in the concept of acquiring land on transnational basis.

2.2 Method and Theory

2.2.1 Methodologies for understanding global land deals

‘Land grabbing’ is a hot socio-political issue throughout the world and ‘getting the facts right’ is crucially important. To do so, it is highly important to devise effective methodologies. Although several global efforts have been carried out to aggregate data on land deals and characterise these transactions, all have struggled with methodology (Edelman, 2013; Oya, 2013a, b; Thaler, 2013; Rulli & D’Odorico, 2013a,b; Scoones *et al.*, 2013a). The literature has identified immense uncertainty with respect to what is counted and questioned the methods used to aggregate ‘land grabs’, and hence, the need exists for development of the second phase of land deal/‘land grab’ research by abandoning the aim of solely deriving aggregate amounts of land deals (Rulli & D’Odorico 2013a,b; Scoones *et al.*, 2013a).

In their discussion on the ‘politics of evidence’, Scoones *et al.* (2013a, b) argued for a second phase of land grab research that is free from imprecise calculations and addresses important questions, i.e., what is actually occurring on the ground, who are the losers and winners, and why. Research that can extend beyond the fixation on ‘killer facts’ (i.e., those unproven grab numbers) and can provide statements accompanied with traceable datasets is sorely needed (Scoones *et al.*, 2013b). In addition to the type and frequency of data collection, the question of ‘what type of evidence is appropriate?’ is one of the long-running methodological points of debate in the global land deal discourse (Scoones *et al.*, 2013a), and researchers must think beyond qualitative versus quantitative debate. Although mixed methods/approaches are duly acknowledged, general rethinking of the form, reliability, medium for collection, and portrayal of evidence is required. Researchers must share their data in a transparent manner, become accountable for their findings, reach out to different audiences, and facilitate dialogue and debate among concerned parties (Edelman *et al.*, 2013; Scoones *et al.*, 2013).

2.2.2 Extending the Stakeholder Theory to land use

Extensive review of the scientific literature is carried out both in the areas of transnational farm land acquisition and the Stakeholder Theory of Management (Freeman, 1984). The parties involved in both the substantial and procedural matters of transnational land deals are explored and categorised by extending the stakeholder theory of management to land use. Conceptual limitations of the usual land deal framework are identified, and points of improvement are solicited such that the customary binary ‘win-win’ land deal framework can be rejuvenated as a multifaceted ‘inclusive’ land deal framework. Stakeholder theory attempts to address morals and values in the operation of strategically driven investment ventures and was initially described in Freeman's (1984) work of ‘*Strategic Management: A Stakeholder Approach*’, which was followed by a number of publications in academic, research, and governance areas (Donaldson *et al.*, 1995; Friedman and Miles, 2002; Jonker and Foster, 2002).

The stakeholder theory was extended from an intra-organisational and stockholder (i.e., shareholder) framework to a framework of participatory planning and decision-making framework in other areas, i.e., corporate social responsibility (Clarkson, 1995; Hillman, 2001), ethics (Agle *et al.*, 1999), information communication technology (ICT) (Pouloudi,

1999), environmental management (Jonker and Foster, 2002), academics and education sector management (McDermott and Chan 1996; Miles, 2011; 2012), public policy (Snider *et al.*, 2003), management of construction projects (Bourne and Walker, 2005), health (Lim *et al.*, 2005), and public works procurement (Austen *et al.*, 2006). Continuing the thread to the contemporary challenge of global governance of land grabbing (Borras *et al.*, 2013), we introduce the application of the stakeholder theory in explaining the diverse stakeholders in a land deal.

In line with the power that transnational companies wield together with the powers of other stakeholders, these companies (as in any type of business ventures) apply their own strategic techniques in pursuing their own business interests and affiliation. One of the most important requirements that should be considered during the business strategy-making process for companies is their ability to identify intra-institutional success factors. By the same token, in the age of global land grabbing, companies are involved in the transnational acquisition of farmlands, but land has a number of competing functions. The influence of other stakeholders, (i.e., government, local communities, international community, elites and researchers, political parties, etc.) is quite noticeable. In line with Mitchell *et al.* (1997), it is essential to cultivate a comprehensive mindset if a win-win transnational land deal is to be established. Inclusive understanding of the key actors and players and successively taking into account their interests and power bases aids in maintaining the efficacy of handling and managing the competitive interests of land use among competing stakeholders with different abilities to influence land deals.

Each party in a land deal has a unique set of stakeholder(s) with which to work and likely a unique or similar set of reactions to a particular set of land use propositions. It is a tradition of land-seeking transnational companies to pay due attention to such stakeholders' interests (Mason *et al.*, 2007). Companies use their own tactical measures to influence land deals and maintain long-term viability of earnings while strengthening their power through their investment operations. According to McMichael (2013) and Araghi (2003), transnational acquisition of land is considered as "security mercantilism in international relations" through which current food regime power restructuring is manifested within its global economic, political, and social coordinates.

2.3 Results and Discussion

2.3.1 The land deal power-interest clustering (LD-PIC) framework

Understanding competing interpretations and political views without a comprehensive land deal framework to incorporate the diversified interests of land use and powers of stakeholders is a major challenge (Borras *et al.*, 2013; Margulis *et al.*, 2013). The indispensable role of strategic management tools in mapping possible power-interest combinations is crucial to the prevailing multi-polar governance challenges of transnational land grabbing. Consequently, we described the relevance of the ‘power-interest grid’, a conceptual map that disaggregates the stakeholders, their vested power, and the magnitude of interests they are likely to reflect (James *et al.*, 1986; Freeman, 1994; Agle *et al.*, 1999; Ackermann and Eden, 2003) (Figure 2.1).

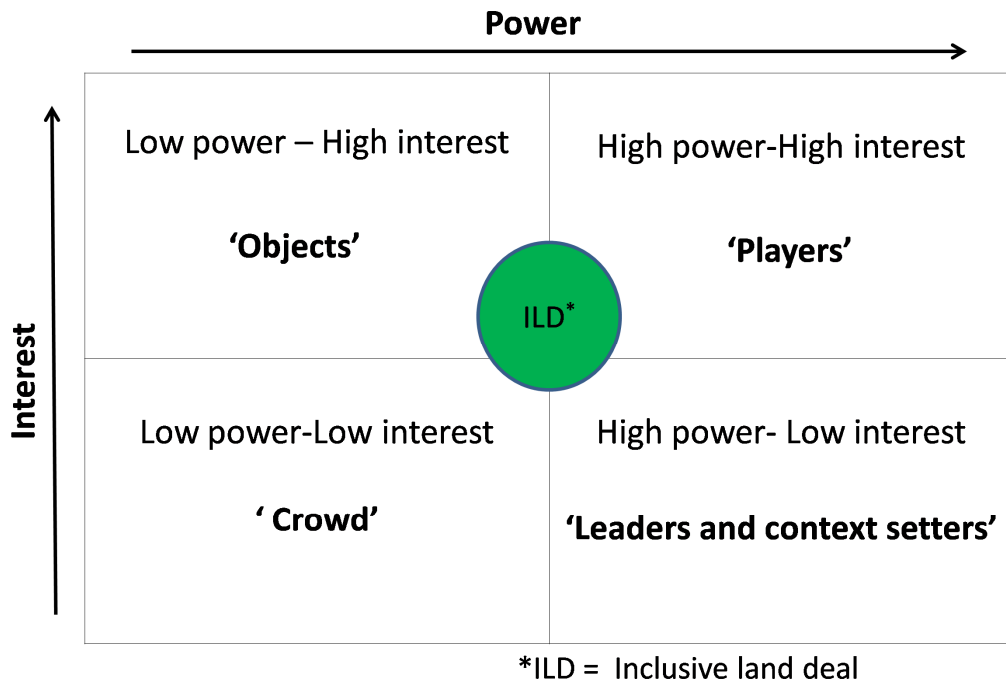


Figure 2.1 Land deal power-interest clustering (LD-PIC) framework

(Adapted from the strategic management literature by James *et al.*, 1986; Freeman, 1994; Mitchell *et al.*, 1997; Ackermann and Eden, 2003)

This tool is supportive in narrowing down a large number of conceivable stakeholders to a manageable array with which to set the foundation for a win-win land deal. Focusing on the

key actors or stakeholders with substantive procedural matters for win-win land deals is analogous to effective stakeholder management strategic deliverables. The LD-PIC is useful in classifying land deal stakeholders that take on central actor roles by supporting or sabotaging the intent of win-win land deals.

For example, in the strategic management literature, Rowley (1997) and (Bronn, 2003) constructed aggregations of stakeholders into ‘actors’ or ‘parties’ (i.e., those context setters, players, and ‘stakeholders’ who are neither context setters nor players but other groups who have a stake in the deal or process). The LD-PIC framework can be described as one of the possible extensions of the Stakeholder Theory and attempts to explain and forecast multi-agent or organisational functions with respect to stakeholder influences in the contemporary era of global ‘land grabbing’ or transnational land acquisition. Although confusion often occurs relative to the theory itself, adaptation of the stated theory to real-world scenarios is important in developing platforms for issues that contain many interests and stakeholders with diverse interests and disparities of power (Miles, 2011).

An understanding the position and power of different stakeholders in land deals plays a crucial role in ensuring the accountability of companies that acquire land globally (Cotula, 2011). *Power* is the potential for obtaining a desired result in relationships in which there are competing or opposite interests (Winkler, 2009). Although a party in a deal may hold power at a certain time, this does not necessarily mean that it holds that power indefinitely over time and space. This statement does not imply that there might not be changes in power throughout a given relationship (Elkin, 2007). *Power* also can be conceptualised as the ability of a stakeholder to exert influence on its survival (or interests) based on the ownership of and/or access to relevant resources (Winkler, 2009). However, *interest* is the aspiration or a feeling of wanting to be considered or wanting to take part in a valuable process (in this case, land and its accompanying resources), although selected works in the literature have labelled this as ‘urgency’ (Agle *et al.*, 1999). Furthermore, amalgamating the power and interest of stakeholders with their degrees of legitimacy is important in analyzing the stakeholders in a land deal in a more comprehensive manner.

Legitimacy is a generalised assumption or a perception that the actions of a party or stakeholder are appropriate, desirable, or proper within a given socially constructed system of beliefs, definitions, norms, and values. Legitimacy determines whether a land use claimant or

stakeholder is proper, desirable, or suitable to the social beliefs, norms, and values used in the given context. It is also argued that the legitimacy of a stakeholder is granted by a given society (Agle *et al.*, 1999).

2.3.1.1 Low power/high interest cluster: The ‘Objects’

Parties or stakeholders with comparably low power but high interest can be categorised as ‘Objects’. These entities are positioned with high interest, which could be positive or negative depending on their reason for existence (i.e., mission) and vision. In the conventional business world, mapping of all stakeholders is a strategic business prerequisite. Accordingly, this process selects appropriate approaches to meet unilateral or bilateral interests. To this end, the ‘Objects’ cluster constitutes the *‘keep them informed’* group, a group that has a high interest in the actions of the companies but holds relatively low power and requires much communication work from the ‘players’ group (James *et al.*, 1986; Mitchell *et al.*, 1997). Local communities which are losers of most of the land deals are usually under this group.

Due to their low power, these groups play a passive role in a land deal, and hence we refer to them as the ‘Objects’, although they are referred to as ‘Subjects’ in much of the strategic management literature (*ibid.*). However, companies are not complacent, and the aggregated effect of many disgruntled stakeholders can grow. In a similar analogy, to incorporate or consider such parties in transnational land acquisitions and work for an Inclusive Land Deal (ILD) arrangement, it is crucial to encourage coalitions to increase the power of the members of this group and engage them in the deal (Bernal, 2011).

A number of land deal cases have resulted in highly displeased stakeholders, and many of these situations are characterised by bi-lateral land deals that neglected a number of pertinent actors who were actually ‘powerless’. For instance, the acquisition of land by Dominion Farms (a Texas-based company) in Western Kenya resulted in conflicting land rights and land use, and Dominion farms was subjected to many critical investigations and reviews (FIAN International, 2010; Galaty, 2012). In 2003, an agreement was made between Dominion and the county councils ‘to develop’ 17,000 hectares of swampland adjacent to Lake Victoria for the duration of 25 years with a possible extension period. During the deal, local community members who used the land for pasture, fishing, and crop production (especially during the dry season) were not considered and were treated only as ‘subjects’ in the deal and received

communication later in the process through local religious channels. The company followed legal procedures and negotiated with trustees, although there was severe resistance against the agreement from local community groups (Ochieng, 2011).

Despite the fact that many blame the company for ‘grabbing’ the land, which has livelihood importance for the local community, others named the government as a responsible ‘player’ in the deal. A number of land use conflicts and fears resulted from this non-inclusive land deal, and the company has invested significant resources to settle local grievances, disputes, and court cases. Furthermore, an unusually long ranging conflict has occurred between local country councils on the subject of sharing the amount of land between the residents and the company (Anseeuw *et al.*, 2012). However, local community groups were supported by different stakeholders and became relatively powerful in pursuing cases against the relevant institutions for settlement. If the company had passed through the appropriate steps of identification and inclusion of all relevant stakeholders together with their varied interests and power from the beginning of the deal, all of those conflicts might not have occurred. Despite the fact that the Texas-based company faced all these challenges in Kenya, it expanded its operation into the Taraba state of Nigeria and Liberia, where it succeeded in acquiring 30,000 hectares and 17,000 hectares of land, respectively, with state backing and ‘context setting’ (GRAIN, 2012).

2.3.1.2 High power/high interest cluster: The ‘Players’

Stakeholders or parties with high power and high interest are categorised as ‘players’. These parties are the key actors in land deals who receive much attention from the ‘Leaders and context setters’ group. In many land deals, due focus is given to this group, followed by the ‘leader and context setters’ cluster. The literature states that ‘players’ in a deal may deliberately act via sabotage to fulfil their strategic aspirations, although their success or failure is meaningfully affected by the behaviour, position, and strategic interest of the ‘leaders and context setters’ (Donaldson *et al.*, 1995). Using their high power and high interest, the genuine role of ‘players’ in transnational land acquisitions is to influence dealers to adhere to the recommended guidelines of corporate social responsibility and integration of environmental and social governance standards. Although the state is usually invoked as a key player in land acquisition, Wolford and Borras (2013) argued that states never function with the same voice, and hence unbundling of the state is argued as helpful in viewing government and governance as people, processes, and relationships.

Among those real-world cases, in 2008, the Swiss-based energy company Addax Bioenergy obtained 14,300 hectares of land in the form of long-term lease agreements for 50 years in central Sierra Leone. An agreement was made to produce bioenergy (i.e., ethanol) for export to Europe and generation of electric power for the local energy market (for energy users in Sierra Leone). To meet its business objective, the company reached an agreement with a number of powerful and interested ‘players’ in acquiring the African land. The African Development Bank (AfDB), the Netherlands Development Finance Company (FMO), the UK-based emerging Africa Infrastructure Fund (EAIF), the German Development Finance Institution (DEG), the Belgian Development Bank (BIO), the South African Industrial Development Corporation (IDC), and Cordiant managed the ICF Debt Pool to provide the company a debt financing agreement of €142 million. Furthermore, Swedfund (the Swedish Development Fund) and the Netherlands Development Finance Company (FMO) joined the company as shareholders, elevating the overall size of the investment to an estimated €267 million (Addax Bioenergy, 2012). However, the other Swiss-based investigation group of Brot für Alle carried out a basic analysis of Addax’s operations and exposed that the company would reap a return of US\$53 million per year, which is close to 98% of the value added by the company’s operations.

Those stakeholders who hold high power and high interest in a deal do have high bargaining power, which leads them consciously or unconsciously into a suppressive and exploitative transaction. For example, relative to the Addax company case, its low-paid employees (approximately 2000) would receive only 2% of the value-added, and the owners of the land leased by Addax would receive approximately 0.2% of the added value. Thus, the company provides less than US\$1 per month for each person affected by its operations or projects, according to a similar recent report by GRAIN (2012). Furthermore, the Government of Sierra Leone acted as the prominent supporter of the community resettlement plan developed by Addax for expansion of its sugar cane plantations.

2.3.1.3 High power/low interest cluster: The ‘Leaders and context setters’

The composition of stakeholders that can influence the overall context of a deal could be contextualised as the ‘leaders and context setters’ cluster. Parties or stakeholders in this group must be assured with a ‘*keep them satisfied*’ tactical endeavour for the ‘players’ to fulfil their

desired investment interests (Jawahar and McLaughlin, 2001; Gardner *et al.*, 1986). A number of real-world cases can be classified into this group and are described as follows.

The World Bank: The World Bank's Multilateral Investment Guarantee Agency supplied a company, i.e., *Chayton Capital*, with US\$50 million for political risk insurance in farm holdings in Botswana and Zambia (GRAIN, 2012). The World Bank advocates 'nine billion reasons' to invest in agriculture. Furthermore, in 2012, the International Finance Corporation (IFC), which is the World Bank's private sector component, invested US\$4.2 billion in large- and small-scale agribusiness and forestry enterprises engaged in growing food and fibre, which were expected to employ workers and assist in feeding the world (World Bank Group on Land and Food Security, 2012). However, although the World Bank is blamed for its support for 'land grabbers' and for dealing with the national governments of developing countries (as 'context setters'), it has rejected this blame. For instance, the World Bank has rejected Oxfam's call to suspend its involvement in large-scale transnational land acquisition in developing countries, particularly that of Africa (World Bank, 2012): '*A moratorium focused on the Bank Group targets precisely those stakeholders doing the most to improve practices – progressive governments, investors, and us. Taking such a step would do nothing to help reduce the instances of abusive practices and would likely deter responsible investors willing to apply our high standards.*' The World Bank has officially replied (p. 4). Payne and Murrin's UK company, which began operating their African Agricultural Land Fund in 2007, acquired 30,000 ha of land in Mozambique and other African countries with support from the Toronto Dominion Bank of Canada and the ISA endowment fund of Vanderbilt University (GRAIN, 2012).

The European Union: The European Union supports 'pro-land deal' policies. For instance, the EU's '*Everything but Arms (EBA) trade policy*' is an agreement stating that imports to the EU from the least developed countries are freed from any restriction or duty, except for ammunitions and arms (European Commission, 2000). This component of the EU's trade policy was formulated with the intention of supporting developing countries; however, this policy could also indirectly encourage 'land grabbing'. Companies in Europe and other countries will go to developing states such as Ethiopia and acquire cheap land, cheap investments, and trade licenses and will ultimately benefit from the EU's '*Everything but Arms (EBA)*' import policy. It is a public fact that many companies from the EU member countries, e.g., Dutch and German companies, have acquired large amounts of land in

Ethiopia by dismantling local communities who have lived on ‘their’ land for hundreds of years. In contrast, the governments of developing countries argue that local communities are dislocated for the good reason of attracting foreign direct investment (FDI) and not ‘land grabbing’. This policy encourages agricultural land acquisition by European, Arab, Chinese, and Indian profit-oriented companies to rush for large-scale agricultural lands in developing countries in the global South (Transnational Institute, 2012).

The case of the EU’s international investment policy: In bilateral investment treaties, the EU’s investment policy constitutes such terms as ‘stabilisation’, which are intended to immunise European companies from any changes made to the laws of the host countries, i.e., developing countries (European Commission, 2006). Accordingly, European companies are encouraged and even have fundamental power to influence the state laws of host countries.

The case of the EU’s renewable energy directive: The EU has declared that by the year 2020, the share of renewable energy consumption in the EU will be increased; one example is biofuel (European Commission, 2012). With policies of such types, we argue that the EU and related institutions in other intergovernmental and regional organisations are among those actors or “context setters” who intentionally and/or unintentionally set favourable contexts for companies and other actors to acquire cheap land in developing countries.

2.3.1.4 Low power/low interest cluster: The ‘Crowd’

The ‘crowd’ cluster constitutes stakeholders with low interest in a deal combined with low power to influence the deal. The ‘crowd’ is a group that constitutes those stakeholders who have little impact on the process of land acquisition. For the ‘crowd’, substantive and procedural factors might apply that result in their possession of low power and interest in the land. For instance, factors such as availability of smallholder local development schemes, direct or indirect control of local administrative institutions, land tenure arrangements, the location pattern of investments and villages, informal land transactions, etc. are among the factors that could result in certain local people with low power and interest at a given time (McCarthy, 2010). The cluster constitutes the ‘minimal effort’ strategic wing of companies in designing their competitive business schemes, thus requiring minimal investment to win the interest of these groups (Mitchell *et al.*, 1997; Bernal, 2011). These actors can be treated as potential rather than actual stakeholders in a land deal, and it may be necessary to raise their interest in the case of long-run land deals or acquisitions over a longer period of time. The

‘crowd’ is the group or cluster of stakeholders who, at this stage, do not pose significant land-deal-related issues that require further discussions compared with the other groups in the land deal power-interest clustering (LD-PIC) framework.

Most non-governmental organisations, community-based organisations, certain of the local administrative structures, members of district or provincial legislatures, and members of parliament in the recipient communities of land deals are reasonably categorised in this group. Others, particularly those with high power, receive much attention in many of the contemporary land deals that occur in many developing countries. The strategy used to build capacity, generate interest, raise awareness, and communicate the ground-level perceived effects of investments plays a vital role in ensuring that this group is reactively responsive to non-inclusive land deals (UNCHS, 2001). However, the low level of interest and lower power of this group might change rapidly due to institutional, policy, governance, or demographic changes over time.

2.3.2 Legitimacy, interest, and power of the land deal framework

Disaggregation of the concept of ‘stakeholder’ (an overused term in the transnational land deal literature) into a meaningful classification is an important step. A good point of departure in this case is the *power, legitimacy, and urgency* or *saliency* model (Mitchell *et al.*, 1997). This model clusters stakeholders according to business corporate performance and managerial values from which the legitimacy, interest, and power (LIP) modelling of parties in land deals can be reframed (Figure 2.2). The term is further extended into subcategories of potential actors in a land deal described as *latent, discretionary, dependent, exigent, dominant, dangerous, and definitive*.

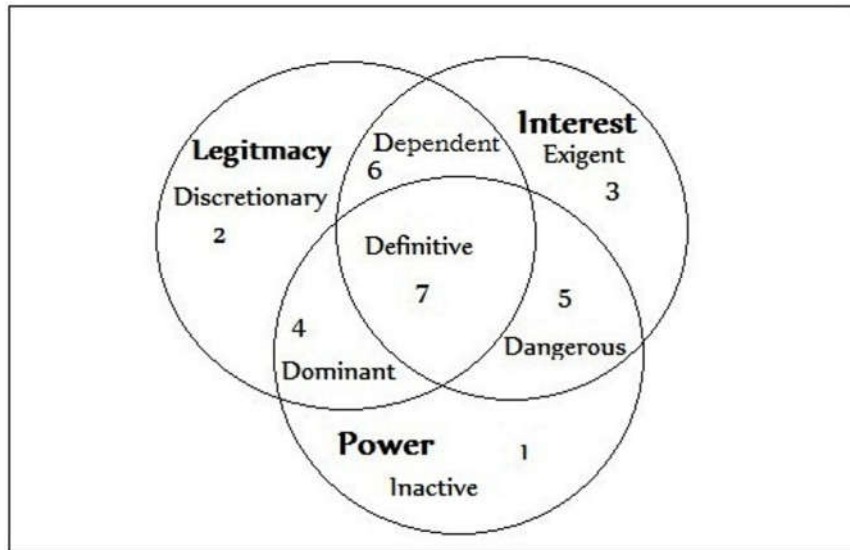


Figure 2.2 Legitimacy-interest-power (LIP) land deal framework

(Adapted from Mitchell *et al*, 1997)

Inactive stakeholders hold the power to enforce their interests over others, yet they lack urgency and legitimacy, and hence, their power to influence deals and acquisitions remains dormant. *Discretionary* stakeholders have the legitimacy to present claims in a deal, but they are not interested in doing so primarily because they likely lack power or other contextual explanations. The *exigent* sub-group constitutes stakeholders with urgent claims, yet they have neither legitimacy nor power to enforce them in a deal. *Dominant* stakeholders are those with legitimate claims and power to influence a deal as well as resource entitlement that allow them to wield a stronger influence in a deal. Parties with power and interest but no legitimacy are strategically known as ‘*dangerous*’ stakeholders because they may opt for coercion or violence if they are not appropriately engaged in a deal or dissatisfied with the consequences of the deal. *Dependent* stakeholders do not have power, although they have interest and hold legitimate claims in a deal. If the power of this group is improved through different capacity-building schemes, they can easily negotiate with other stakeholders and influence a deal or resource acquisition. Finally, *definitive* stakeholders hold the power and legitimacy to push their interests in a deal. The important questions are states as follows: *Who are those three broader groups and the seven distinct clusters of stakeholders in a given land deal made in a certain country, region, or location? Who lacks legitimacy, interest, or power in the deal? What should be done and for whom such that land deals and acquisitions will end not only in a win-win outcome but also inclusive decisions?*

Parties or stakeholders that exhibit only one of the three characteristics (stakeholders numbered 1, 2, and 3 in Figure 2.2) might be re-categorised as *latent stakeholders* in such sub-classifications as *inactive*, *discretionary* or *exigent/demanding* with analogies to the upper-level classification. Stakeholders who display two of the three characteristics (those numbered 4, 5, and 6) are categorically *expectant stakeholders* known as *dominant*, *'dangerous'*, or *dependent*, respectively. Those parties or stakeholders who are interested in the subject(s) in a deal, have the power to influence the deal, and hold legitimacy in the deal and its related matters are *definitive* stakeholders. A key issue in many of these discourses is the maintenance of an appropriate triangulated balance among the tripartite elements of legitimacy, interest, and power.

An inclusive land deal (ILD) is envisioned to further address the economic, ethical, legal, and discretionary responsibilities or matters embedded in the different stakeholder groups and sub-groups explained thus far. *Economic inclusiveness*: The 'profitability of the deals' or businesses following the land acquisition should seek to generate *acceptable* benefit or return for the acquired land. *Ethical inclusiveness*: Responsibility exists in a land deal to cooperate in policies that are fair, just, and right, and refrain from harm, i.e., the duty to choose wisely among several alternative uses of land and/or accompanied resources. *Legal inclusiveness*: This category includes 'the legal contexts of the deals', which involves obeying the pertinent laws that codify right and wrong. *Discretionary inclusiveness*: Companies and others who acquire land are expected to act as good (corporate) bodies by deploying their resources for the improvement of other stakeholders' well-being and quality of life, e.g., devoting resources to improving the livelihood of local communities.

2.3.3 From 'win-win' to an inclusive land deal framework

The governance of transnational land acquisition becomes a challenge in a changing international agricultural context with competing political perspectives and strategies, making the existing governance landscape more complicated (Borras *et al.*, 2013). Land acquisitions can pose major threats to the livelihood of family farming and the rural poor that are ultimately disadvantageous to countries that supply land and therefore cast criticism on such commercial land deals (Bues, 2011). However, certain factions believe that such investments should not be generally condemned. Many investors who obtain land in certain developing countries face unknown performance in sustainable land use and forest resources, and most do

not work with local labour and technology, and ship their production back to their home countries (Desalegn, 2011; Dereje *et al.*, 2013). From this view, such investments might endanger the amount of available food and increase food insecurity among the recipient communities. In particular, the large number of subsistence poor farmers who depend on land to feed their families will be affected by land scarcity and rising land prices (Azadi *et al.*, 2013). Limited empirical studies have shown the effects of large-scale land acquisitions on family farming and small-scale food production (Gobena, 2010; IFAD, 2011).

Small-scale farmers or family farmers produce 80% of the food consumed in developing countries, but their agricultural operations are threatened and under continued upheaval due to land tenure, land governance, and transnational land acquisition (ILC, 2014). Family farming must be considered as one of the cornerstones of sustainable rural development and should be conceived of as an integral component of the global food value chain. Resolving the predicaments of family farming and harmonising this factor with large-scale land transactions is essential.

A proper identification and inclusion model for the relevant stakeholders in land deals is lacking, which further contributes to governance complexities and non-inclusive and selective participation of parties in deals that end with long-term transfer of farmlands. Win-win land deals can be mostly sustainable (green) deals and are hence recommended (Azadi *et al.*, 2013); the conventional context of win-win deals implies that these agreements are made between two dealers or two stakeholders, but the main issue in the case of land deals goes beyond that explanation. Numerous further stakeholders exist with diverse and often conflicting interests and differentiated powers and aspire to play a role in given land deal, yet they are marginalised. However, it is not sound to develop a ‘one-size-fit all’ inclusive land deal (ILD) conceptual model in a contemporary land (use) market that differs in various parameters of location, land use, crop type, and socio-political and cultural contexts (GRAIN, 2008; Akram-Lodhi, 2012). Furthermore, ‘land grabbing’ is a ‘work-in-progress’ concept according to which the inclusive land deal models may involve real-world cases and tailored frameworks. Inclusive land deals can be sustainable land deals or green deals, which are not easy to construct and hence could be inevitably complex in practical terms. Win-win land ideas, as described in Azadi *et al.* (2013), are a necessary but not sufficient criterion for land deals to be characterised as sustainable or green deals. As green deals, land deals must

simultaneously consider the systematic and multidirectional interactions of the biophysical environment, institutions, and stakeholders (Figure 2.3).

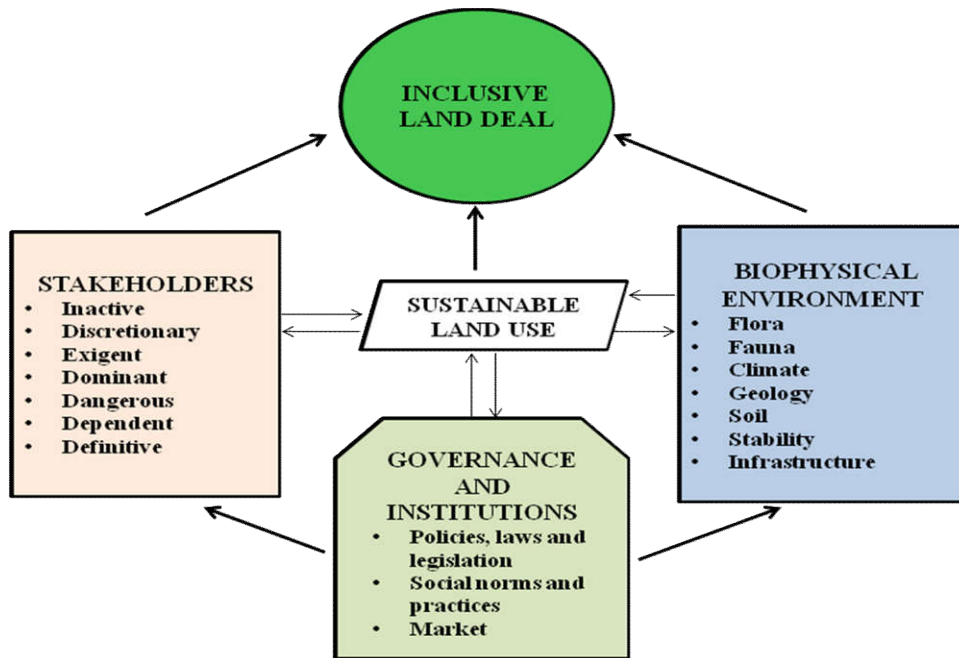


Figure 2.3 Sketch of the inclusive land deal (ILD) framework

Our proposed inclusive framework depicts an inclusive land deal as a function of three grand indices, i.e., biophysical environment, governance and institutions, and stakeholders, in which each is the focus of different areas of expertise. In short, the framework can be equated as follows:

$$ILD = f(\text{bpe, gins, sths, Lu}) + e; \text{ where}$$

ILD: Inclusive land deal,

bpe: Biophysical environment,

gins: Governance and institutions,

sths: Stakeholders,

Lu: Land use, and

e: Effect of latent factors

Consideration of transnational land deals relative to the biological and physical environment that constitutes the flora, fauna, climatic situations, geological make-up, soil condition, infrastructure, and stability of the area, etc. are among the efforts considered in the inclusive

deals. The ILD should not only protect and preserve the biophysical environment but also should be viewed from the context of power and interest in moving transnational capital for better benefit maximisation through the use of the biophysical resources of the host countries and communities. Transnational acquisition of land must be viewed from the broader context of occupying land and its accompanying resources, i.e., water for small-scale land-holding peasants and local households (Ganho, 2011; Kay and Franco, 2012). Excessive focus on the land per se runs the risk of overlooking the basic drivers behind transnational land acquisition, i.e., greed for power in the global food and input supply chain and harnessing control over biophysical prerequisites to further capital accumulation.

Governance and institutions are the most important variable in the ILD framework, which is clear but illusive in many of the contemporary land deals. Accountable, consensus-oriented, effective and efficient, equitable and inclusive, participatory, and responsive and transparent governance of land use and its associated resources are prerequisites for an inclusive process in transnational land deals. Assessing the adherence of transnational land deals to the principles of accountability, transparency, and responsible agricultural investment contributes to ensuring sustainable land use rather than simple focus on the exchange of land ownership or land use. Assessment of the contexts and improvement factors related to land (i.e., policies, legislations, laws, directives, and market) in such an approach could aid in facilitating good governance and transactions of land. As discussed in the previous sections, the stakeholders must be considered, and their genuine participation is a requirement for inclusive deals. Protection of vulnerable groups, i.e., local economies, social fabric, and cultures, is also a basic need. The right to food and nutritional sovereignty as well as respect for the available social norms and practices are among the components of responsible agricultural investments. Finally, synchronising the interplay among the biophysical environment, stakeholders, governance, and institutions in the context of competitive land use is essential.

2.3.4 Adapting the proposed frameworks: Checklist questions

The need exists to bridge the gap between “generalised” and “contextualised” knowledge (and information) concerning transnational land acquisition. Most of the generalised conceptualisations and sources neglect the importance of powerless and powerful (yet uninterested) stakeholders in deals surrounding land use (Amanor, 2012; Anseeuw *et al.*,

2012). The important questions are: Who are the three broader groups and seven distinct sub-groups of stakeholders in a land deal? Who lacks legitimacy, interest, or power in the deal? What should be carried out by whom and for whom such that land deals and acquisitions will end up with not only win-win outcomes but also inclusive decisions? For land deals to become inclusive resource use agreements and to be governed in line with meaningful environmental and social governance standards, these following fundamental questions should be addressed in real-world contexts, land use types, and socioeconomic and political settings.

2.4 Conclusion

Recent works on transnational land acquisition argue towards win-win land deals or ‘green deals’ (Azadi *et al* 2013). However, a ‘win-win’ situation is a necessary but not sufficient condition for land deals to become inclusive or effective green deals. To obtain an inclusive land deal, the need exists to broaden the groups of stakeholders (i.e., in addition to the investor and investee) according to various but relevant parameters. By extending the evolving stakeholder theory of management to the emerging governance challenges of transnational land deals, we propose a new concept known as the land deal power-interest clustering (LD-PIC) framework. Stakeholders in a transnational land acquisition are categorised into either four or seven generic groups depending on the power, interest, and legitimacy with which they are vested. First, according to the LD-PIC, actors in land deals can be categorised into four groups, i.e., *subjects*, *players*, *leaders-context setters*, and *crowd*. The first group of ‘subjects’ are those groups of stakeholders with high interest in the land considered in a deal but with low power to influence both the process and outcome of the deal. In contrast, the second group of ‘players’ are those stakeholders who have high power and high interest, including the designers and real actors of deals that use the contexts set by the third group of leaders and context setters. The leaders and context setters group consists of stakeholders with low interest in the deals but comparatively high power in influencing the context of the deal. The last yet not least group of the ‘crowd’ are stakeholders with low power and low interest relative to land deals.

By adapting the concept of ‘legitimacy’ into our LD-PIC framework, we introduce the legitimacy, interest, and power (LIP) land deal framework. Accordingly, seven distinct groups of stakeholders are created from the context of transnational land acquisition, i.e., *inactive*,

discretionary, exigent, dominant, dangerous, dependent, and definitive. Although all of these groups of stakeholders do exist, unfortunately, the land use agreements that have been made thus far have occurred between only two parties, i.e., the leaser and lessee. However, if an inclusive land deal is assumed, the interplay between the leaser and lessee and also among these seven groups of stakeholders as well as its implications for sustainable land use must be properly understood. Considering the systematic and multidirectional interactions of the biophysical environment, institutions, and stakeholders, we offer an inclusive land deal (ILD) framework. The framework portrays the inclusive land deal as a function of three grand variables: biophysical environment, governance and institutions, and stakeholders. Finally, understanding and improving the theoretical realm of the ILD framework of stakeholders is a current issue, and it is crucial to apply or use this framework in the further steps of assessing specific land deals, land use, crops, governance, institutional, and location cases.

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Chapter 3 Agricultural outsourcing or land grabbing: a systematic review

Adapted from Vandergeten, E., Azadi, H., Dereje, T., Nyssen, D., Witlox, F., Vanhaute, E. (2016). *Agricultural outsourcing or land grabbing: A meta-analysis*. *Landscape Ecology*. 31(7): 1395-1417; DOI: 10.1007/s10980-016-0365-y.

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[This chapter was developed based on the MSc thesis of Erika Vandergeten (2014) that was realised in the framework of this PhD thesis, and under close supervision of the author]

Abstract Theoretically ‘land grabbing’ is not a new phenomenon. Since the 1990s, some capital-rich countries have started to buy or lease foreign lands to be able to produce food and biofuels. This study aimed at investigating the (un)sustainability of ‘transnational land deals’ (TLDs) for investors, host governments and local communities. Given the three dimensions of sustainability, the “social acceptability”, “economic viability” and “environmental conservation” of the TLDs have been studied. To understand whether and to what extent the TLD is sustainable in each dimension a systematic review was conducted on 73 journal articles. Results showed that tenure arrangements and livelihoods were the main drivers for the matter’s social acceptability. Accordingly, local communities are affected by losing and receiving little or no compensation for their land, and making them have to face the increasing vulnerability of their livelihoods. This results in a win-win-loss situation for investors, host governments and local communities, respectively. Economic (un)sustainability mainly depends on capital flow, infrastructure and employment. This aspect is evidenced as a win for investors and host governments and implies the aforementioned win-win-loss situation. The main aspects of environmental (un)sustainability are considered as biodiversity, ecosystem services, and climate change. According to the results, both host governments and local communities experience loss. This results in a win-loss-loss status of the TLDs. The major challenge remains in establishing good land governance, which can guarantee the benefits to local people and their access to land.

3.1 Introduction

Since the 1990s, some capital-rich countries, such as China, South Korea, Japan, Saudi Arabia and Kuwait (STWR 2012) have started to buy or lease foreign lands to be able to produce food and biofuels. They have started ‘agricultural outsourcing’ (AO) mostly in Africa and Latin America (Kersting 2011). Hofman and Ho (2012: 3) define agricultural outsourcing (AO) as “the acquisition of user rights abroad for an area over 1,000 hectares in order to outsource domestic agricultural production”. Borras *et al.* (2012a 851) describes contemporary land grabbing as follows: “the capturing of control of relatively vast tracts of land and other natural resources through a variety of mechanisms and forms that involve large-scale capital that often shifts resource use orientation into extractive character, whether for international or domestic purposes, as capital’s response to the convergence of food, energy and financial crises, climate change mitigation imperatives, and demands for resources from newer hubs of global capital.” This definition shows how broad the contemporary term of ‘land grabbing’ can be interpreted.

Not only foreign investors, but domestic investors may also be guilty of ‘grabbing’ land and other natural resources. The driving forces behind these investments are mainly considered as crises, climate change and increasing demands in food and energy (Hall 2011: 193; Borras *et al.*, 2012b: 403). The phenomenon of ‘land grabbing’ is not a new process and can be traced back to historical precedents in the era of imperialism. Margulis *et al.* (2013: 1) argue that ‘the character, scale, pace, orientation, and key drivers of the recent wave of land grabs is a distinct historical phenomenon closely tied to major shifts in power and production in the global political economy’.

The present issue of ‘land grabbing’ has become the subject of numerous media reports since the global food crisis worsened in 2008 (FIAN 2012). This has led to the rise of many scientific studies concerning this subject. Azadi *et al.* (2013) for instance, have recently studied TLDs and divided them into four categories; i.e., loss-loss, loss-win, win-loss and win-win deals. According to them, the ‘win’ or ‘loss’ outcome relates to the two parties in TLDs: the investor(s) and investee(s). In addition to their classification, this chapter includes a third party and therefore studies three main stakeholders as follows: the investor(s), the host country’s government and the host country’s local community; mainly local (small-scale) farmers. Azadi *et al.* (2013) argue that the ‘win’ or ‘loss’ for the different stakeholders should

be discussed in the framework of sustainability, which they break down into three dimensions: the political, socio-economic and environmental aspects of sustainability. In this chapter, these dimensions are translated into social, economic and environmental dimensions.

The first dimension of sustainability can be referred to as ‘social acceptability’, which relates to social welfare, employment, poverty and disputes. For this aspect of sustainability, governance plays an important role in order to maintain these social criteria. The focus for social sustainability lies in local (small-scale) farmers and how their lives could possibly change after dealing the land. The social dimension implies “both (a) the processes that generate social health and well-being now and in the future, and (b) those social institutions that facilitate environmental and economic sustainability now and for the future” (Dillard *et al* 2009: 4). For example, in Africa, up to 90 percent of rural lands are under customary tenure (Gerlach and Liu 2010). This often leads to social conflicts regarding land tenure between investors and local communities. Especially due to weak land governance (Azadi *et al.*, 2013), local people often have little access to the law and are excluded from formal land rights (Rudi *et al.*, 2012). For instance, although most of the cultivable land targeted for agricultural outsourcing is used or claimed by local farmers and pastoralists, they possess no formal land documentation (Toulmin 2008) or land title registration (Miceli *et al.*, 2001; Sohl *et al* 2010; Verburg *et al.*, 2010).

The second dimension of sustainability mainly focuses on financial viability and employment. “An economically sustainable system must be able to produce goods and services on a continuous basis, to maintain manageable levels of government and external debt, and to avoid extreme sectoral imbalances that damage agricultural or industrial production” (Harris *et al.*, 2001, xxix). Land and agricultural production have been highlighted as critical components for economic growth and the reduction of poverty (Clover and Eriksen 2009). It is assumed that the creation of employment opportunities created by agricultural outsourcing improves domestic production by focusing on the local job market and other inputs as well as processing outputs and possibly increasing food supplies for domestic and foreign markets (Hallam 2009) and hereby boosts economic growth. Some case studies however, observed that TLD projects are labour intensive during the initial phase but become increasingly mechanized later on, thus reducing future job and therefore income opportunities (Gerlach and Liu 2010).

The third aspect of sustainability lies in ‘environmental conservation’. Here, the environmental impacts of TLDs are considered. In order to measure the environmental sustainability, global concerns such as biodiversity, ecosystem services, and climate change are taken into account. As Cotula *et al.* (2009) pointed out, sustainable TLDs need assessments of environmental aspects of the proposed investments. According to them, soil, water and biodiversity should be monitored. For example, for soil and water, short-term mining through the cultivation of crops with high water or nutrient demands, can lead to soil erosion and water scarcity (Azadi *et al.*, 2011). Also, the impacts on biodiversity need to be watched out for (e.g. mono-cultural production which may even lead to pest or disease problems (Bazuin *et al.*, 2011)). Since long-term land leasing normally takes 40-50 years, this may lead to long-term problems which may affect the environment as well as local communities.

As said and emphasized in the ‘Critical Agrarian Studies Colloquium No. 4’ on 11 June 2012 in The Hague (the Netherlands), there is a need for the existing research findings to be globally understood (ISS 2012).

3.2 Theoretical framework

This study investigates the sustainability of the TLDs in the three main dimensions. The theoretical framework is conceptualized in Figure 3.1. Figure 3.1 illustrates how the three aspects of sustainability should be considered when assessing the TLDs. As shown in the figure, each dimension includes several concepts as follows (It should be noted that one can find other concepts within this framework. Nevertheless, in this study, we considered these dimensions and concepts as the core concepts to the investigation of the TLDs.).

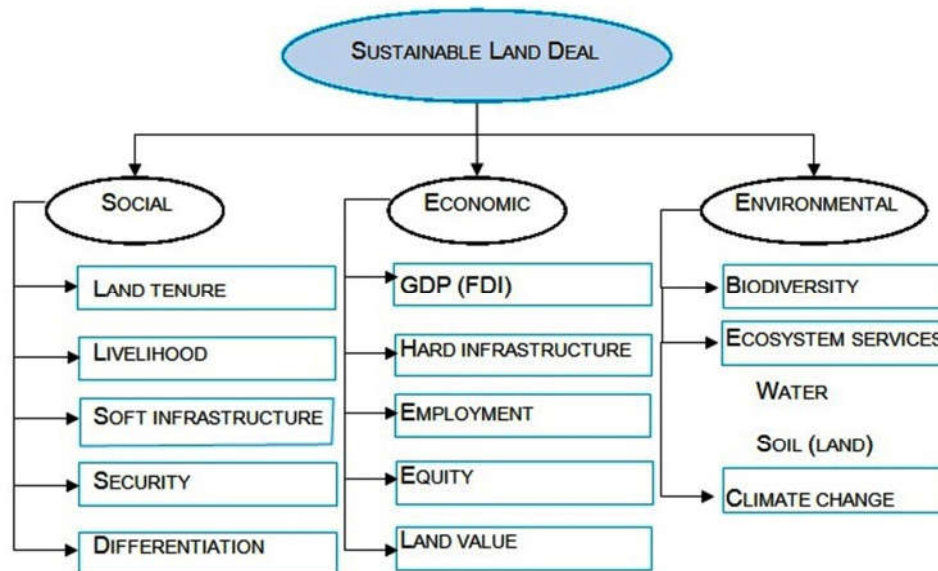


Figure 3.1 The conceptual framework of the study

3.2.1 Social sustainability

3.2.1.1 Land tenure

According to the FAO (2002: 7), land tenure can be described as “the relationship, whether legally or customarily defined, among people, as individuals or groups, with respect to land and associated natural resources (water, trees, minerals, wildlife, etc.). Rules of tenure define how property rights in land are to be allocated within societies. Land tenure systems determine who can use what resources for how long, and under what conditions.”

3.2.1.2 Livelihood

“A livelihood comprises the assets (natural, physical, human, financial and social capital), the activities, and the access to these (mediated by institutions and social relations) that together determine the living gained by the individual or household.” According to Ellis (2000: 10), livelihood is a wide social concept that relates to the means of living (mostly associated with local people), food security, poverty or welfare, eviction, and other broad concepts that relate to the social well-being of people. According to the FAO (Bellù *et al.* , 2006: 7) “social welfare can be described by means of a so called ‘Social Welfare Function’”. Champernowne and Cowell (1998: 88) define the Social Welfare Function as “the generic term for coherent and consistent ordering of social states in terms of their desirability is a social-welfare

function”. We use the term ‘social’ because it normally refers to the whole community, but it does not imply that the ordering was somehow chosen by the whole community: there can be as many social-welfare functions as there are opinions held.

3.2.1.3 Soft infrastructure

Casey (2005: 8) describes that soft infrastructure “involves responses to both the needs of communities, while simultaneously building the capacity of local people and groups to respond to current and future needs. It is not simply about providing physical assets but about enhancing skills and knowledge and access to a range of appropriate services and responses.” For our systematic review, the main elements of ‘soft infrastructure’ included health care (centres), education and training (schools). These elements are important for providing social sustainability for the host country, and especially the local communities. By investing in soft infrastructure, the investor(s) can provide the host country a better future through knowledge and health care.

3.2.1.4 Security

In many cases of ‘land grabbing’, local people are evicted or forced to leave their land. This process is often accompanied by violence, conflicts and other security problems. For example: "Sadly, there is a messy tale in Tanzania, where local communities are sometimes forcibly evicted off the land to make room for national parks and other tourist attractions" (Mutch 2011: 60). This aspect thus can negatively influence social sustainability: violence brings unsustainability for all three stakeholders.

3.2.1.5 Social differentiation (or polarization)

‘Land grabbing’ often causes or intensifies (existing) differentiation in social classes (of wealth, race, gender or even age). White and White (2012) for instance, studied the ‘gendered experiences of dispossession: oil palm expansion in a Dayak Hibun community in West Kalimantan’. This aspect needs more attention in research studies, since it can cause (more) social unsustainability for those classes who are already being discriminated against.

3.2.2 Economic sustainability

3.2.2.1 GDP

GDP is defined by the World Bank (Subbotina 2004: 12) as: “the value of the total final output of all goods and services produced in a single year within a country's boundaries. GNP is GDP plus incomes received by residents from abroad minus incomes claimed by nonresidents”. The host country can see this aspect as an important reason to stimulate the TLDs. By bringing foreign direct investments, the investor(s) contributes to the GDP of the host country, and can add have some economic values.

3.2.2.2 Hard infrastructure

In this study, ‘hard infrastructure’ is considered as a type of infrastructure defined by Casey (2005: 7) as that “which is focused on provision of basic utilities i.e. water, gas and electricity, waste, transport provision (roads, rail, air) that provide the framework in which a community transacts economic, social and environmental activity.” There are case studies in which the investor provides hard infrastructure, e.g. roads, electricity or irrigation systems, which may (not) benefit local communities and small-scale farmers. Establishing new hard infrastructure is often seen as an important criterion for allowing the TLDs by the host country.

3.2.2.3 Employment

“An agreement between an employer and an employee that the employee will provide certain services on the job, and in the employer's designated workplace, to facilitate the accomplishment of the employer organization’s goals and mission, in return for compensation. The agreement can be verbal, implied, or an official employment contract” (Heathfield 2012: 1). Many cases of AO are facilitated not only by the government, but by the availability of abundant (and cheap) labour forces in the host country as well. This aspect has a great deal of influence on local communities and their economic (un)sustainability.

3.2.2.4 Equity/shares

In some case studies, the investors also invest in the stock market, or, as in the case of Russia (Visser and Spoor 2011: 693), "Most investors from abroad have chosen to acquire equity within already established Russian or Ukrainian agro-holdings, obtaining several farm

enterprises with their (mostly leased) land in one go." This aspect is rather rarely found in the research studies, but the case of Russia shows how it can affect the economic sustainability of the host country.

3.2.2.5 Land value

Land value refers to the economic value of the land itself. Here, the increasing interest in land can affect the land prices for local as well as foreign investors. Therefore, this aspect can contribute to economic (un)sustainability. Mousseau and Sosnoff (2011) for example, have seen the results of TLDs that were only looking to increase the land value in their case study in Ethiopia. Here, land is only used by the investors to gain economic prosperity by increasing the land value. This can be achieved by simply clearing the land of forests and selling it afterwards as land for agricultural production. Even though the investors may gain in these cases, the consequences for the local communities may be severe.

3.2.3 Environmental sustainability

3.2.3.1 Biodiversity

In this study, biodiversity concerns the maintenance of different species (flora and fauna) in their natural ecosystems (genetic diversity is not included in this study) over time. Biodiversity is defined by the Convention on Biological Diversity (CBD) (United Nations 1992: 3) as: "the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems".

3.2.3.2 Ecosystem services

Water

In the TLDs, the investor not only gets to cultivate land (soil), but often also gets the rights over other natural resources on the dealt land, e.g., water. The TLDs can thus affect water security and safety, e.g. by reducing and polluting existing water resources. Here, the effects can be immense, especially for the host country and its local communities.

Soil (land)

The effects of the TLDs on soil (land) could also include many things, which among some, we assessed the following:

1. **Land cover:** generally defined as “the observed (bio)-physical cover on the Earth’s surface. It includes vegetation and man-made features as well as bare rock, bare soil and inland water surfaces.” Besides this definition, Herold *et al.* (2006: 158) also define ‘land cover’ on a fundamental level: “land cover is the most important element for description and study of the environment. In situ and satellite land observations as well as different disciplines (geography, ecology, geology, forestry, land policy and planning etc.) use and refer to land cover as the most obvious and detectable indicator of land surface characteristics.” In our study, land cover is one of the most influential aspects studied in the systematic review.
2. **Land use** is “characterized by the arrangements, activities and inputs people undertake in a certain land cover type to produce, change or maintain it. Definition of land use in this way establishes a direct link between land cover and the actions of people in their environment.” (Di Gregorio and Jansen 2000)
3. **Soil erosion:** “a complex process that depends on soil properties, ground slope, vegetation, and rainfall amount and intensity ... Changes in land use are widely recognized as capable of greatly accelerating soil erosion ... and it has long been recognized that erosion in excess of soil production would eventually result in decreased agricultural potential ... Although soil fertility generally declines with accelerated erosion, soil fertility is itself a function of agricultural methods and site conditions such as soil type, nutrient, and organic matter content”. (Montgomery 2007: 13268)
4. **Land degradation** is “a process involving multiple causal factors, among which climate variability, soil quality and land management play a significant role ... It specifically refers to a reduction of the productivity and capacity of providing ecosystem services by cropland, rangeland and woodlands”. In the study of Ceccarelli *et al.* (2014: 60), land degradation is further “considered as a process occurring not only in a semi-natural context, but also in agricultural and peri-urban lands areas ”.

3.2.3.3 Climate change

Even though most case studies do not specifically mention ‘climate change’ as an outcome of AO, there are cases where research shows the impact of the investment on the local climate. For example, in Bolivia, “there is evidence of environmental degradation in the eastern lowlands to such an extreme that this has seemingly caused a significantly warmer and drier climate in the region.” (Urioste 2012: 444)

By exploring the social, economic and environmental dimensions of sustainability, this chapter investigates the following research problem: “How ‘sustainable’ are transnational land deals for the investor, the host country and the local communities in terms of social, economic and environmental aspects?” and “What are the main sub-indicators that lead to gain or loss in the social, economic and environmental aspects?”

3.3 Methodology

3.3.1 Systematic review with a meta-analysis component

Systematic reviews typically involve a comprehensive and detailed plan and search strategy derived a priori, with the objective of reducing bias through identifying, appraising, and synthesizing all the necessary studies on a particular issue (Uman, 2011). Often, systematic reviews include a meta-analysis component which applies statistical techniques to synthesize the data from diverse studies into a single quantitative estimate (Petticrew & Roberts, 2006). This study used mainly a systematic review but with a meta-analysis component to investigate the sustainability of the TLDs and the concepts described in the theoretical framework. Trikalinos *et al.* (2008: 312) define meta-analysis as “the quantitative synthesis of information from several studies”.

“While the statistical procedures used in a meta-analysis can be applied to any set of data, the synthesis will be meaningful only if the studies have been collected systematically. This could be done in the context of a systematic review, the process of systematically locating, appraising, and then synthesizing data from a large number of sources”. As Borenstein *et al.* (2009, xxii) explain, the collection of data is a first important step in this method. This has been performed in the sample collection, followed by the qualitative analysis (content analysis) itself.

3.3.2 Sampling

The main objective of a meta-analysis lies in cumulating research findings across different studies on the same issue which, in our case, is “transnational land deals”. Such studies have been gathered from different published journals; mainly ‘Journal of Peasant Studies’, ‘Water

Alternatives’, ‘Geopolitics’, ‘Development and Change’, ‘Globalizations’ and ‘Journal of Agrarian Change’.

In order to justify the choice of research studies, a number of criteria was considered: the studies were first chosen by searching following key words: “large-scale land deal”, “land grab” and “agricultural outsourcing”. This primary search resulted in 23,030 journal articles and published reports. Afterwards, the number of studies was narrowed down by taking a closer look at them to understand whether, at least, one of the key words could be found in their title or abstract. Accordingly, 161 journal articles and published reports remained. In the third step, the journal articles and published reports were further scrutinized to determine whether they report case studies on land grabbing or generally agricultural outsourcing. Furthermore, our systematic review with its the meta-analysis component focused on “land” grabbing, and thus excluded “water”, “carbon”, and “soil” grabbing. This sample approach resulted in the selection of 73 journal articles and published reports at the end that were published from 1992- 2013 (Figure 3.2).

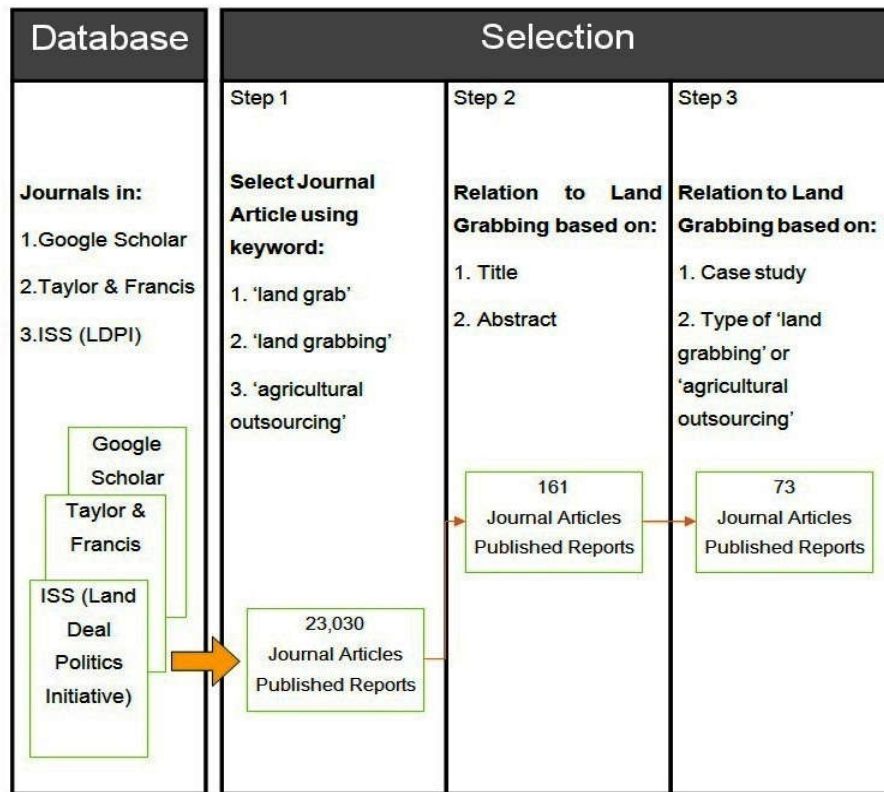


Figure 3.2 Sampling approach

The distribution of the case studies per country is depicted in the following figures.

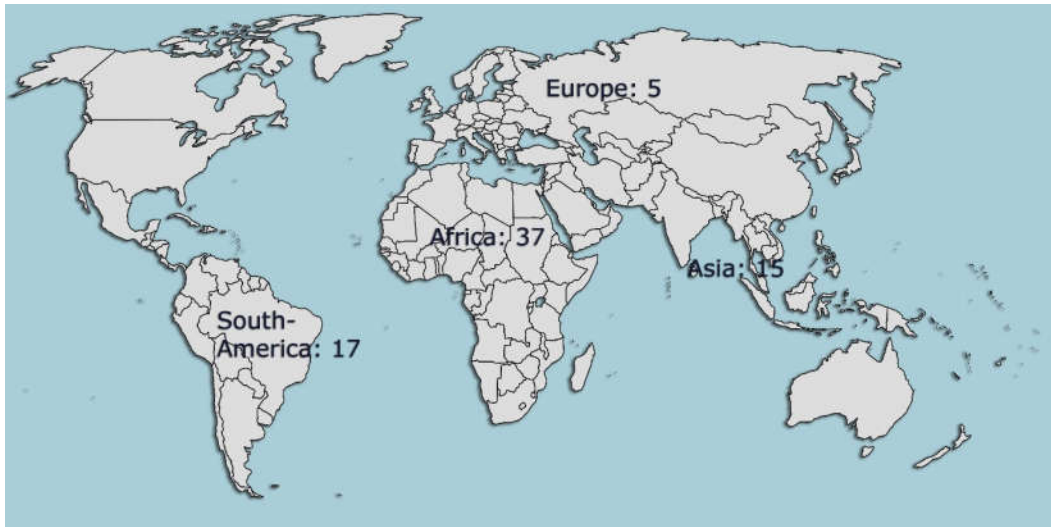


Figure 3.3 Distribution of case studies per continent

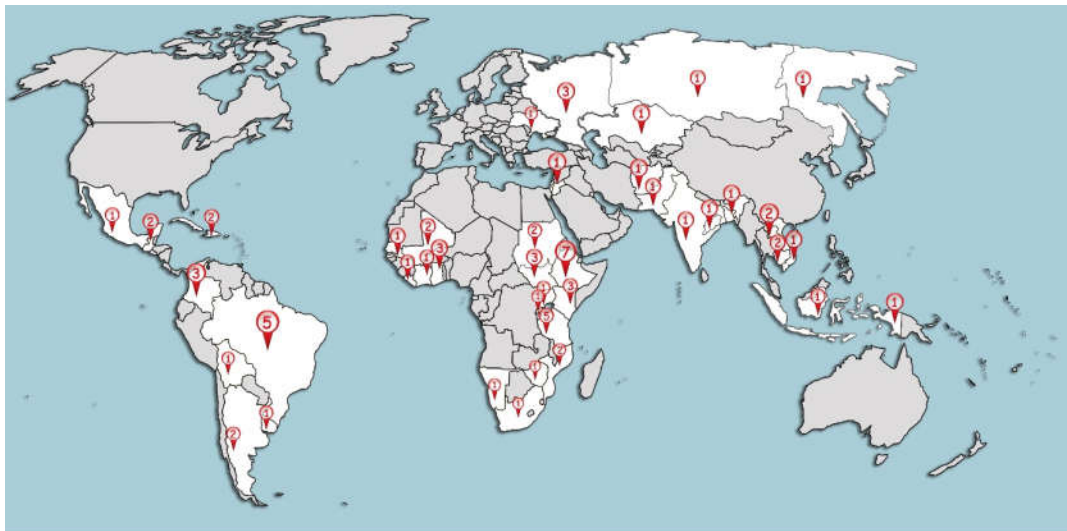


Figure 3.4 Distribution of the number of case studies per host country (investee)

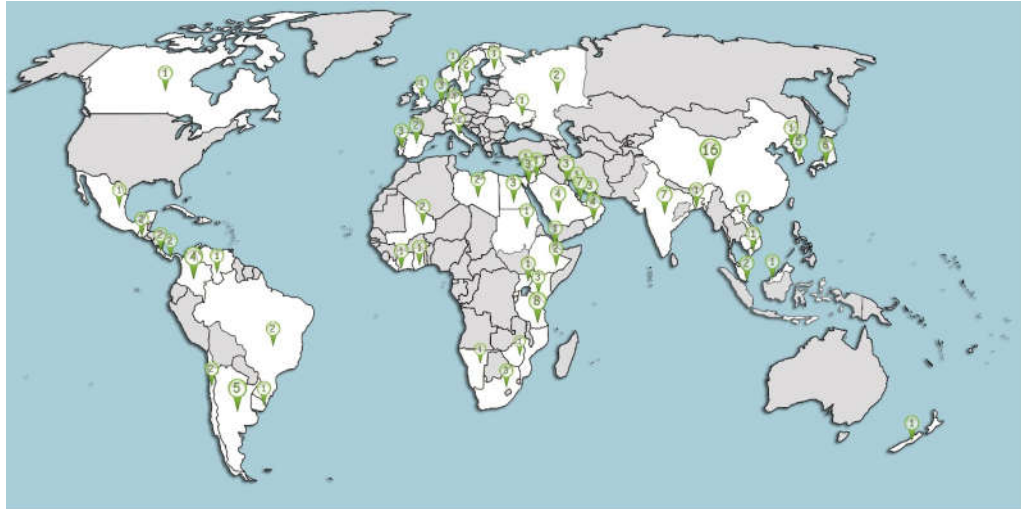


Figure 3.5 Distribution of the number of case studies per investing country (investors)

Figure 3.3 shows that most research is conducted in Africa, followed by South-America and Asia. Only 5 case studies are located in Russia, Europe. Figure 3.4 and 3.5 display the distribution of the investing countries and host countries around the world. Most of the host countries are located in Africa (35), Latin-America (17) or Asia (15) as displayed in Figure 3.4, while most of the investing countries are situated in China (16), the Middle East (27) and Europe (21) as is depicted in Figure 3.5. It should be noted that Figure 3.4 and 3.5 only depict the number of case studies analysing a specific country or region. The number of case studies studying (parts of) a continent have been left out: Africa (3), East Africa (1), Sub-Saharan Africa (1), West and Central Africa (1), South Asia (1), Southeast Asia (2), East-Asia (2), UAE (2), USSR (1), Europe (2), EU (1), Latin-America (3), South America (1)

3.3.3 Data integration and analysis

After selecting the journal articles, the case studies were first analysed qualitatively in the initial phase of the meta-analysis. To do so, a content analysis of these studies was conducted in order to find commonalities and/or differences. The content analysis consisted of the following three steps: a content inventory, a content audit and a content map (Fox 2008).

The content inventory concentrated on the following data in the studies on land dealing:

1. Study (title and name of the authors)
2. Location (land and region)
3. Subject/aspects (investor(s) and main drivers)

4. Indicators (social, economic and environmental)
5. Conclusion (short abstract of the main conclusions of the research)
6. TLD type (win-win, win-loss, loss-win or loss-loss)
7. Stakeholders (investors and investees (host country government and local community))

The content audit listed all these elements in a table in order to make a comparison between the studies. For the analysis, the full text of the studies was read in order to maximize the number of references inside the text needed to verify the assumptions of win or loss. Finally, the content map depicts these results in Table 3.1. This table gives an example of a possible outcome of the content analysis. Based on the three main aspects of sustainability, sustainable TLDs are described in the following equation:

$$SLD = f(SoS + ENS + ECS) + e \quad \text{EQUATION (1)}$$

Thus, the sustainability of land deals (SLD) is a function of the three main aspects: social (SoS), environmental (EnS), economic (EcS) sustainability, and error term (*e*). This equation is further developed in the meta-analysis. Table 3.1 gives an example of this step for the first case study in the social dimension. In this example, scores are designated to each sub-indicator of the social dimension. For instance, the sub-indicator ‘Tenure Arrangements’ is:

- a) sustainable (+) for the investor,
- b) not researched (x) for the host country’s government (it was not mentioned in the case study), and
- c) unsustainable (-) for the local community.

Accordingly, the main drivers behind the social, economic and environmental sustainability were examined. In case the drivers were clearly present in the case study, they were evaluated based on their presence/absence for the investors as well as the investees. The first columns indicate the case study and general information regarding the investor(s) and driver(s). In the following columns, a given land deal is evaluated based on the three aspects of sustainability, resulting in the four following situations: win-win, loss-win, win-loss or loss-loss situation (where a win is marked as a ‘+’ and loss as a ‘-’). The column named ‘notes’ contains the reference to the sentence(s) in the case study from which the win/loss status is elicited.

Table 3.1 Example of a qualitative evaluation of a case study for the social indicator and ‘TA’ sub-indicator*

SOCIAL SUSTAINABILITY								
Case Study	Location	Investor(s)	Driver(s)	Notes	Tenure arrangements			
					TA Status Inv (+ or -)	TA Status Gov (+ or -)	TA Status Loc (+ or -)	
1	Klopp, 2000	Kenya (Africa)	private developers	political liberalization	"Francis Karani, a former Nairobi city commissioner, walked into the market and boldly announced that people had to move because he had been given the land"	+	x	-

*‘TA’: Tenure Arrangements, ‘Inv’: Investor(s), ‘Gov’: Host country Government, ‘Loc’:

Host country Local communities

These drivers/sub-indicators of sustainability have been selected by reading and analysing the case studies. In order to avoid having to ascribe a certain weighting factor to the sub-indicators, all indicators/dimensions were given five sub-indicators.

3.4 Results

3.4.1 Social sustainability

As explained in the methodology, the main drivers responsible for the social (un)sustainability of the TLD, are the ‘tenure arrangements’ (TA) and the ‘livelihood’ (L). The frequency of the five sub-indicators of the social dimension is depicted in Figure 3.6.

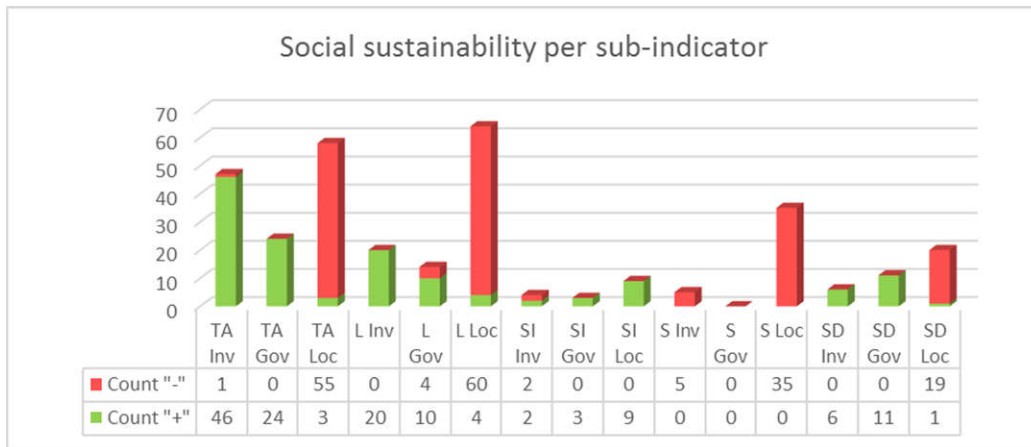


Figure 3.6 Social sustainability of the TLD per indicator

(TA: Tenure Arrangements, L: Livelihood, SI : Soft Infrastructure, S : Security, SD : Social Differentiation).

3.4.1.1 Tenure arrangements (TA)

The sub indicator ‘tenure arrangements’ counts 98% wins for the investors, 100% wins for the government and only 5% win for the local communities. For the losses, 2% of the evidence shows unsustainability for the investors, 0% is found with the government while 95% is counted for the local communities. The investors themselves, who most often get to buy or rent the land at favourable rates clearly gain here (98%). On the other hand, the local community or small-scale farmers lose their (farm) land to the investor(s), hence the 95% loss rate. The compensation paid by the investor(s) is often received by the government (100% win), while the local people have to move to other areas (with poor quality lands) and receive little or no compensation at all. The following example in Laos confirms these results:

"The result of these negotiations was that farmers were compensated at rates far below the market value of their land and the amount that they requested. HAGL forced villagers to accept low prices by threatening not to award compensation at all, a threat against which villagers felt they had no recourse."(Kenney-Lazar 2012, 1031)

3.4.1.2 Livelihood (L)

The second main driver behind social unsustainability for the local communities on the one hand, and social sustainable land deals for the investors and host government on the other, is ‘livelihood’. The results of Figure 3.6 show that the investors win in 100% and the government in 71% of the evidence. Furthermore, 94% of the studies show unsustainability in the livelihoods of the local communities and small-scale farmers. Most often, the loss of

(farm) land is accompanied by eviction or replacement, in some cases including violent actions from the government or the investor (Levien 2012). Other consequences of the land deals that affect local livelihoods are the increase of poverty or decrease of food security. More importantly however, is the impact on the basic needs (food, water medication, and housing) of the local community. For instance, most of the local communities depend on the food and materials they gather from their surroundings. When investors come and clear the land, contaminate water sources, or start hunting the local animals, this causes major damage to the local livelihood of many communities (e.g. Mousseau and Sosnoff 2011). Pastoralists are especially affected by ‘land grabbing’ due to losing their grazing lands and the rise of fencing of territories that interferes with their lifestyle. This is illustrated by the following examples, respectively in Africa (in a general case study), Cambodia and Ethiopia:

"Game parks, theme parks and private lodges for the seriously rich have sprung up all over the place, with adverse effects on pastoralist communities in particular, as huge areas of once common grazing land have been fenced off."(Palmer 2011: 20).

"The concession also blocked the stream flow of local creeks that provided freshwater for household consumption, fishery activities and villagers' rice fields. Most importantly the concession infringed on the forest areas that were essential for local people's livelihoods."(Neef et al., 2013: 9).

"Villagers often used the now-cleared forest in the Saudi lease area during times of food insecurity for gathering food, fuelwood, and medicines.(...) Now, with further encroachment of domestic investors on the North side of the river, in addition to Saudi Star's clearing of land on the South side, the impending damming of the Alwero, the impact of villagization projects, ongoing raids from neighboring tribes, and changes to their local environment, the future is indeed bleak for the villagers of Pokedi."(Mousseau and Sosnoff 2011: 32).

3.4.1.3 Soft infrastructure (SI)

The sub indicator ‘soft Infrastructure’ counts half (50%) of the wins for the investors and 100% for the government as well as the local communities. For the losses, half (50%) of the evidence shows unsustainability for the investors, while no evidence (0%) is found with the government and their local communities. This can be explained by the investment made by the investors in order to establish soft infrastructure, e.g. health care or educational facilities. The host country only wins in this situation because of the benefits they receive

through health care and education. Even though this shows a sustainable picture for the host country, only a few case studies have documented the implementation of soft infrastructure. The study of Guillozet and Bliss (2011: 7) also demonstrates this phenomenon in Ethiopia:

"The Enterprise contributes to a range of community development projects, for example: building schools and clinics in Kebeles bordering plantation and natural forests; disbursing Eucalyptus seedlings to try to boost farm incomes; providing supplementary agricultural extension services; and exploring options to devolve some natural forest management authority to communities."

3.4.1.4 Security (S)

As already explained in section "4.1.2. Livelihood", the replacement of local people or land evictions often results in social conflicts and violence (Levien 2012). This issue has been evidenced by around half (35) of these case studies. This shows the loss in social sustainability in security for the local communities as well as the investor(s) (for 100%). One case study in India tells the following story:

"In March 2007, 14 people were killed and many more raped and injured by police and party-thugs in Nandigram, West Bengal, for refusing to give their land for a petrochemical SEZ promoted by an Indonesian company. (...) Nandigram was the tip of the iceberg, as farmers across the country were resisting the government's use of eminent domain to acquire and transfer their land to private companies for the development of these hyper-liberalized enclaves."(Levien 2012: 933)

3.4.1.5 Social differentiation (SD)

In most developing countries, there is already an existing social (class) differentiation (White and White 2012). However, evidence shows that agricultural investments have worsened this situation. The local communities are often already poor before land deals take place, but the impact of the investments has further exacerbated the polarization between the rich and poor. The majority of the case studies show the collaboration between governments and the elite, diaspora or high class society: they win for 100% in this sub indicator. The local communities face the loss in social differentiation with 95%. In Colombia, for instance, the Tayrona National Park has been used as a 'green pretext' to allow the social elite to build villas in the park, while the local poor are evicted and prohibited to use the forest:

"Ecotourism serves as a powerful mechanism of accumulation by dispossession that evidences not just the workings of global capital, but also the green pretexts that produce

class-, race- and gender-marked subjects as expropriable, disposable beings."(Ojeda 2011: 1)

3.4.2 Economic sustainability

In the second dimension of sustainability, Figure 3.7 shows a more sustainable picture of AO. In this dimension, there is clear evidence of gains for the investors and host governments while local communities experience economic unsustainability.

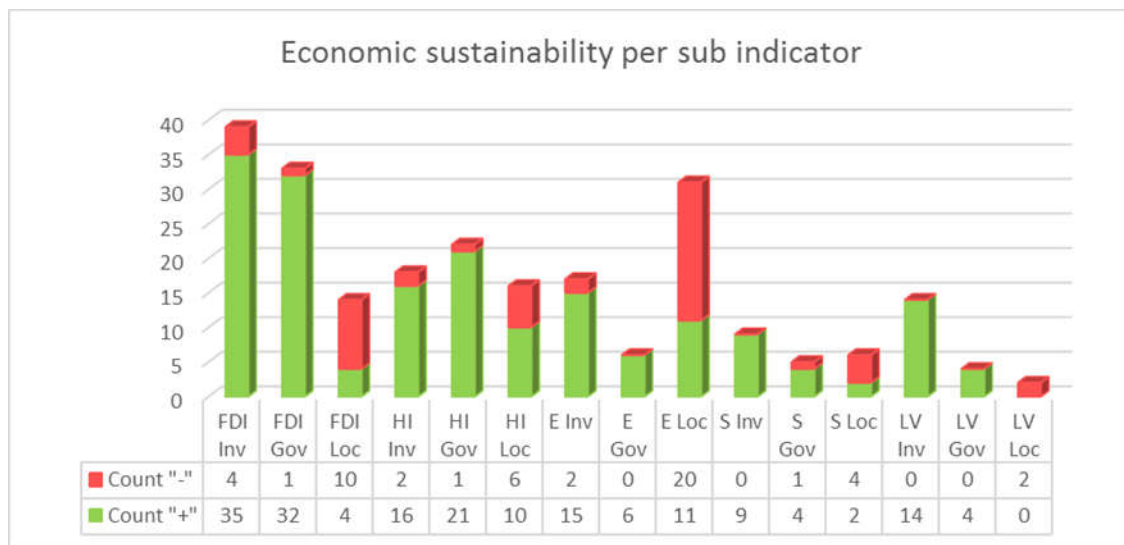


Figure 3.7 Economic sustainability per indicator

(FDI: foreign direct investment and capital; HI: hard infrastructure; E: employment; S: shares and equity; LV: land value).

3.4.2.1 GDP/FDI/capital (FDI)

The first driver behind this polarization is foreign direct investment (FDI). The investor(s) gain in 90% of the studies by investing in TLDs and thus introduce foreign capital into the host country, by which the government gains economic sustainability in 97%. The local community and small-scale farmers lose in almost three-fourth of the evidence (71%) in terms of getting less incentives from the government, e.g. having to pay more for land than foreign investors, getting less tax free incentives, etc. Also, in out-grower schemes in which local farmers are obliged to pay for the machinery, technology, chemicals and fertilizers provided

by the (foreign) investor, they tend to lose a great deal of their profit (White and White 2012). This is demonstrated in the example of oil palm plantations in Indonesia:

“Aside from these deductions for the (re)purchase of their land, the contract farmers' harvest incomes are further reduced by deductions for infrastructure maintenance, transportation, fertilizers and other inputs, etc.”(White and White 2012: 999)

In the example of Ethiopia, the TLDs are clearly stimulated by the government itself as illustrated by the numerous incentives given to foreign investors:

“Many investors suggest that the low input costs (e.g. labor), relaxed regulations, the streamlined process, abundant/suitable land, strategic location, preferential trade agreements, and abundant water resources are among the reasons why doing business in Ethiopia is lucrative.”(Mousseau and Sosnoff 2011: 20)

3.4.2.2 Hard infrastructure (HI)

In contrast to soft infrastructure, ‘hard infrastructure’ is a more common compensation used by investors to benefit local communities, who gain in almost two-third (62%) of these investments. However, the benefit is also valid for the investors (89%) themselves and other people (on a large scale: the government, by 95%). An example of investment in hard infrastructure (in this case, irrigation infrastructure), is found in the case of the Save Valley in Zimbabwe:

“As part and parcel of its 'corporate responsibility', Ratings entered into agreement with the Zimbabwe National Water Authority (ZINWA) and repaired 6 pumps each with a capacity to pump and irrigate 1,000 hectares. The facility was intended to benefit 132 farmers resettled in 2003, whose irrigation infrastructure had been vandalised during the FTLR. By March 2010, Ratings Investment Ltd. and partners had reportedly used US\$40 million in the rehabilitation process. The Parliamentary Portfolio Committee also reported that Rating Investments and Partners, as part of their social responsibility, rehabilitated irrigation infrastructure covering 1,200 hectares for 4,000 irrigation communal farmers in the Chibuwe area at a cost of US\$120,000...”(Makombe 2013: 7)

3.4.2.3 Employment (E)

Although employment could potentially be a great benefit of AO for the host country, the results of the systematic review and meta-analysis show almost two-thirds (65%) of evidence of economic unsustainability for the local people. The majority (88%) of investors on the other hand, gain from the cheap labour that is abundant in host countries. For the local

community, the TLDs provide an increase in employment, but the jobs are often poorly paid, take place in harsh and sometimes unsafe environments, with little security (contracts) and hard working conditions (Benjaminsen *et al.*, 2011; Grandia 2011). The following cases in, respectively, Guatemala and Tanzania illustrate these difficulties:

"There is work in palm companies, this is true, but they do not pay fair wages. In the beginning they did, and then they stopped. One week we are paid, the next one we are not."(Grandia 2011: 30)

"Few workers are for instance employed full--time. At the same time, most workers are paid below the Tanzanian minimum wage, and their work clothes are not sufficient and not compensated for."(Benjaminsen *et al.*, 2011: 15-16)

3.4.2.4 Shares/Equity (S)

There is evidence of a trend towards the rising of stock markets, although this process is only just beginning. Here, the investors gain in 100% of the cases and the government in four-fifths (80%) of the evidence. The local community however, tends to lose in more than two-thirds (67%) of the cases. In Russia, the investors use equity as a means of acquiring land by investing in existing agro-holdings:

"Most investors from abroad have chosen to acquire equity within already established Russian or Ukrainian agro-holdings, obtaining several farm enterprises with their (mostly leased) land in one go." (Visser and Spoor 2010: 693)

3.4.2.5 Land Value (LV)

The last sub-indicator for economic (un)sustainability is 'land value'. In fourteen of the case studies (19%), evidence shows that land value can be a reason for foreign investments to invest in land, from which they gain in all fourteen of these case studies. The government also gains by 100%, while the local people lose in two case studies by 100%. In these cases, the TLDs are used as a means of adding value to the land itself. In Ethiopia, for instance:

"There is a concern that many of these investors will clear the land for charcoal (a quick form of income), and then allow the land to sit idle, transferring the land to another investor when land prices have increased."(Mousseau and Sosnoff 2011: 24)

This raises a great concern on the possible losses for the host country: their forests can be cleared only for the purpose of making profit while the actual foreign agricultural investments may never be accomplished. In India, this phenomenon also takes place. Here, investors profit

from the demand for land. The local people on the other hand, do not have the luxury to wait a long time before selling their land and thus do not receive the same profits:

"Those with little land and few other sources of income had to sell the rights to their compensation plots quickly and at a consequently lower price. Thus, at the time of the survey, 70 percent of those with less than two hectares of land had already sold their plots, compared to only 23 percent of those possessing more than four acres. When the larger-holders did sell their plots, they received a median sales price that was over \$44,000 per hectare more than the small-holders."(Levien 2012: 954)

3.4.3 Environmental sustainability

The result on the third dimension of sustainability demonstrates that only few research studies assess the environmental impacts of the TLDs. The main drivers here are the sub-indicators biodiversity, ecosystem services, and climate change.

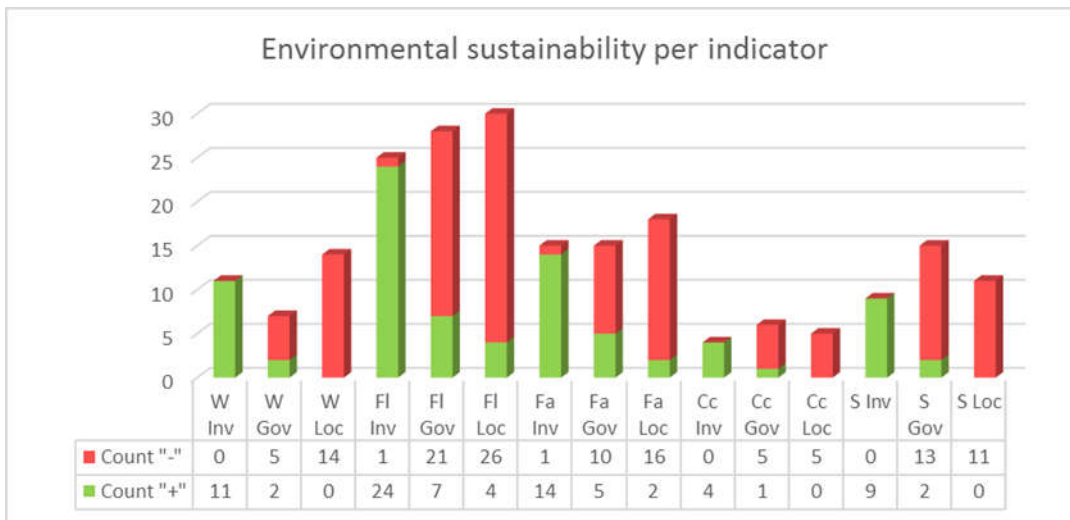


Figure 3.8 Environmental sustainability per indicator

(W: water; Fl: flora; Fa: fauna; Cc: climate change; S: soil).

3.4.3.1 Flora (Fl)

The most commonly affected environmental sub-indicator is forestry, or flora in general. Besides water, forests are also an important source to attract investors. They gain by 96% from this resource, while the host country faces loss in three-fourths (75%) of the cases and the local community in more than four-fifths (87%) of the evidence. This is also the case in Cambodia:

"Krom Hun Chin (Chinese company) is clearing the forests. Forests no longer exist, and our lives will face difficulties in the near future. Our children will not see and know all trees and wild animals in this area." (Neef *et al.*, 2013: 9)

3.4.3.2 Fauna (Fa)

Because of the impact on the environment, most TLDs also include an encroachment of habitats, and their fauna. The loss of fauna could therefore be linked with the loss of flora, e.g. the clearing of forests. Here as well, the host country faces loss of fauna in two-thirds (67%) of the cases for the government and the majority (89%) for the local communities. The investors however, win in almost all (93%) of the cases. In Colombia (Ojeda 2011: 21) for instance, under the pretext of conservation, the local elite are invading in the Tayrona National Park, at the same place where turtles used to lay their eggs:

"Formerly a nesting place for sea turtles, the endangered Carey among them, Cañaveral became a surreal place in the middle of the forest where you find luxurious cabins (at US\$350 per night), Jacuzzis, floating beds, a spa and numbers of employees in uniforms running around to bring martinis to the tourists that relax at the beach."

3.4.3.3 Water (W)

The first sub-indicator for the environmental aspect is water, including all possible water sources. As Figure 3.8 shows, the case studies evidence gains for the investors by 100% on the one hand, and losses for the host country by around three-fourths (71%) for the government and 100% for the local community on the other. Many of the investors chose to locate their investment nearby water areas, in order to get (free) access to water resources (Adamczewski *et al.*, 2013). This explains why they experience environmental sustainability in the TLDs. For the local community however, their livelihood is impeded by the pollution of water resources. This is exemplified by the following extract from a case study in Tanzania:

"These activities caused contamination of the water sources which feed a water supply scheme managed by a downstream local community and serving a population of 45,000."(Arduino *et al.*, 2012: 344)

3.4.3.4 Soil (S)

Soil erosion can be caused by short-term mining or the cultivation of crops with high nutrient demands, as well as the use of pesticides and fertilizers (e.g. sugarcane: Azadi *et al.*, 2012). Monoculture for example, may have serious consequences on the state of the soil. This is evidenced in the following quote from a case study in Brazil:

"An increasing adoption of mixed production systems can be observed, although monoculture still prevails, causing significant damage to the soils. Furthermore, monoculture is eliminating the rich biodiversity of the Cerrados, which is only now becoming an object of conservation policies."(Wilkinson *et al.* 2012: 432)

In this sub indicator, the investors gain in all case studies (100%), while both the government and local community lose in almost all of the same case studies (by respectively 87% and 100%). In total, the results of our research on the drivers behind the (un)sustainability of TLDs prove the difference in win and loss for the three stakeholders. In the social dimension, we see an unsustainable situation for the local communities and a sustainable outcome for the investor(s) and host government. In the economic dimension, TLDs look more sustainable for all parties, however the meta-analysis shows the presence of losses mainly for local people. From the environmental point of view, the unsustainable situation for the host country is evidenced while only the investor(s) benefit from the environment in which the TLDs take place. In the next section, we will take a closer look at the “win-loss” situation for the three stakeholders’ per dimension of sustainability.

3.4.3.5 Climate change (Cc)

Even though this theme is very present in recent discourses and scientific studies, in terms of TLDs, climate change is not a highly researched topic in the case studies. There are forms of so-called ‘green grabbing’, which try to ‘protect’ the environment (Fairhead *et al.*, 2012). However, at the same time, they imply negative consequences for the local community in all (100%) of the cases as well as the government in more than four-fifths (83%) of the cases. This is clearly also the case in Tanzania:

"The general pattern in all these cases is a new form of primitive accumulation created by global actors with certain interests (biodiversity conservation, safari tourism, climate change mitigation) obtaining cheaply acquired land through capital investments at the expense of the rural peasantry." (Benjaminsen *et al.*, 2011: 23)

One case study in Bolivia described the influence of the land deals on the climate:

"However, there is evidence of environmental degradation in the eastern lowlands to such an extreme that this has seemingly caused a significantly warmer and drier climate in the region." (Urioste 2012: 444)

3.4.4 Sustainability for all three dimensions and stakeholders

By combining all the five sub-indicators of social sustainability, the overall social sustainability for each stakeholder was estimated in Table 3.2. Based on Figure 3. 6, for all the social indicators, 169 numbers (55+ 60+ 0+ 35+19) of evidence has shown losses experienced for local communities, while the numbers of the evidence for investors and country's government were 8 (1+ 0+ 2+ 5+ 0) and 4 (0+ 4 + 0+ 0), respectively. Also, according to Table 3.2, the local community has lost in 169 case studies. Investors have experienced a loss in 8 case studies, and finally, the number of evidence for loss experience for the country's government is 4.

Table 3.2 Social, economic and environmental sustainability per stakeholder

Dimension	Win-Loss status	Stakeholder		
		Investor	Host country	Local community
Social	Loss	8	4	169
	Win	74	48	17
Economic	Loss	8	3	42
	Win	89	67	27
Environmental	Loss	2	54	72
	Win	62	17	6

3.4.5 Social sustainability

As Table 3.2 shows, the most affected stakeholder in the social dimension is the local community together with local small-scale farmers: they lose in almost all (91%) case studies. This table also explains why there is a tendency to name AO in a negative way; i.e., "land grabbing". The great number of evidence (91%) for losses experienced by local communities shows an unsustainable social situation for this stakeholder. The investor(s) experience more gains in nearly all case studies (90%). This explains their motivation to invest in the TLD. The host country's government also wins in almost all (92%) case studies.

The social dimension therefore shows a win-win-loss situation for the TLDs, and thus a unsustainable social outcome for the local community while being socially sustainable for the investor(s) and the government of the host country.

3.4.5.1 Economic sustainability

In contrast to the social dimension however, the economic dimension clearly is of more interest for the investors and the host country's government. After all, the investors see AO as an economic opportunity and this is the main reason why they seek these opportunities abroad (Mousseau and Sosnoff 2011). Within the host country a great difference between the government and the local communities is observed once more.

Similar to the former dimension of sustainability, economic sustainability also introduces a win-win-loss status for the TLDs. The investors win by 92%, the host country by 96% while their local communities lose by 61%.

3.4.5.2 Environmental sustainability

The third dimension evidences how both host government and local community lose in terms of environmental sustainability. Here, they both experience the losses caused by the TLDs, while the investor(s) receive some (economic) benefits from biodiversity loss, ecosystem services damage, and changing (micro) climates. The damage to these resources however can be seen as a loss for all three stakeholders, but the investors will leave the environmental damages to the local people after their lease period ends.

In this case, the TLDs would be categorized as win-loss-loss. The investors gain in 97% of the cases, while the losses are experienced by the host country (76% for the government and 92% for the local community). Even though this already shows a clear differentiation between the 'win'-situation for the investor and the 'losses' for the host country, most case studies demonstrate a lack of research and monitoring in terms of consequences for the environment.

3.4.5.3 Investors

As concluded in the previous tables and figures, in all three dimensions of sustainability, the investor(s) often experiences a 'win'-situation.

Almost all of the wins are situated in the economic dimension (92%), by accumulating capital. However, in the case of social sustainability (90% gains), the sub-indicator 'tenure arrangements' contributes to another considerable win-situation for the investor(s). In the

environmental dimension as well, the investors find benefits in the environment (97% gains) through the use of flora (forest clearing), and ecosystem services (mainly water and soil resources). The perspective of the investors clearly demonstrates their interest in AO since they experience sustainability in its social, economic and environmental dimensions.

3.4.5.4 Host government

As many of the case studies have indicated, the government plays a crucial role in the stimulation of AO. Table 3.2 underlines their motivation for allowing and attracting foreign investments in their country.

The largest share of gains is found in the economic dimension (96%): the increase of foreign direct investment along with the gross domestic product is the main drivers for encouraging AO by governments (Mousseau and Sosnoff 2011). Also, the investment in hard infrastructure from the investors contributes to these gains. The social dimension mainly consists of gains (by 92%) because of the compensation governments receive in terms of renting or selling land. This is characterized by the sub-indicator 'land tenure arrangements'. On the other hand, the importance of the environmental dimension is also noticed. Even more than the economic dimension, the environmental dimension shows evidence of a need for attention, seeing the loss in more than three-fourths of the evidence (76%). Most governments do not seem to be aware of the threats of AO, or 'land grabbing' as they face a loss of environmental assets, which can cause unknown irreversible damage to the country's ecology (Zoomers 2011).

3.4.5.5 Local community

In contrast to the investors, the local communities in the host countries experience losses in all the three dimensions of sustainability. Although all the three dimensions are marked by the unsustainability showcased in the case studies, there is definitely a higher amount of evidence in the social dimension (91% loss). The sub-indicators behind this observation are the losses found in the local livelihood, tenure arrangements and security. While there is a certain presence of gains in the economic category, the amount of losses is still higher (61%). These losses therefore minimize the advantages that local communities might experience. Besides the government, the environmental consequences also affect the local people in the host countries (92% loss), where the communities are often highly dependent on local natural

resources. By examining the drivers behind social, economic and environmental (un)sustainability for the investors, host government and local community, we are able to make some finalizing conclusions on the global picture of sustainability of TLDs in the next section.

3.4.6 Overall sustainability

In order to answer the question of sustainability of TLDs, we conclusively examine the total amount of losses as well as gains for the three dimensions of sustainability. Figure 3.9 demonstrates the dominance of losses in the social and environmental dimensions but gains in the economic dimension.

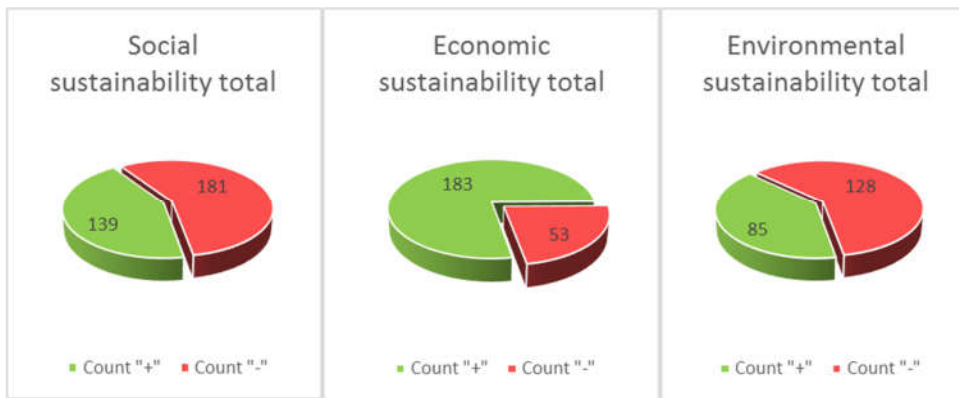


Figure 3.9 Total amount of losses and gains per dimension of sustainability.

As shown in the figure, the unsustainability of the social dimension is higher in TLDs. More than half (57%) of the case studies evidence social unsustainability. As we have seen in the previous sections, the unsustainability in the social dimension is mainly experienced by the local communities. Therefore, the term ‘land grabbing’ is fitting for this dimension, since it implicates the negative outcome of the TLDs by which land is being taken from local communities in order to encourage large scale investments. This means that the TLDs are considered to be socially unsustainable. In contrast to the social dimension of sustainability, the gains exceed the losses in the economic dimension by more than three-fourths in the case studies (77% win).

Even though the local communities may experience more losses, the gains for the investor(s) and host country’s government dominate the economic level, and thus show evidence of the economic sustainability caused by the TLDs. This further demonstrates why governments

stimulate the TDLs by welcoming investing (capital-rich) countries while the negative effects have impacted the local communities. Similar to the social dimension, the environmental losses dominate this dimension of sustainability by almost two-thirds of the case studies (60% loss). These losses are mainly of importance to the host country's government and communities, whose environmental resources are affected. The investor(s) gain from these resources while the other stakeholders face the negative effects of the TDLs in the environmental dimension.

3.5 Discussion

In the chapter, efforts were made to investigate the (un)sustainability of transnational land deals. Based on the assumption that there are three dimensions of sustainability, i.e., the "social acceptability," "economic viability" and "environmental conservation," the level of (un)sustainability associated with the TDLs is examined. The concept of sustainability does not have a well structured and universally applicable measurement criteria, and hence, it was necessary to develop an own conceptual framework for analyzing the sustainability of land deals. As a result, there are limitations in computing values for each dimension of sustainability and overall sustainability of land deals. Given that the unsustainability of TDLs is prevalent in the social as well as the environmental dimension, this chapter proved the existence of land 'grabbing' in these dimensions. The chapter has also shown the vulnerability of the host country's local communities and small-scale farmers. According to the results, the investors clearly gain in all three dimensions. All evidence shows the need for more balanced TDLs, where all stakeholders can experience 'gains' in all the three dimensions.

For the first dimension of sustainability, the social sub-indicator 'tenure arrangements' shows a need to compensate the loss or eviction experienced by local communities. Without good land governance and land titling, vulnerable groups, especially small-scale farmers are the main losers of TDLs. The economic dimension demonstrates the need for governing the benefits of the local communities. In this case, the sustainability could be increased by monitoring the contracts between the government and the investors, by looking at the implications of the contracts for local communities. The focus here should lie in protecting outgrower schemes as well as hiring local workers, guaranteeing better working conditions

and fair wages, and demanding agricultural production (in order to discourage rising land value operations).

The results put the main responsibility on the shoulders of the host country's government that needs to protect their communities. Instruments such as research on the land use rights and communication with local people on the emergence of agricultural investments have to be increased. The introduction of spatial planning and a bottom-up approach could improve the situation of vulnerable groups. As the results of this study have shown, currently, the host country's government experiences a 'win' in the economic and social dimensions. The local communities on the other hand experience 'loss' in all three dimensions. Spatial planning can be a top-down tool for the governments to plan the future of their country's land and user rights. By implementing a spatial plan they are required to research the existing land use rights of local communities and pastoralists. By mapping these properties, they are able to give rights to the local people for their land(s). A bottom-up approach will mean that the local land owners will then have to be informed and involved in the spatial planning process and thus be able to express their needs and hope for the future of their land. Only by combining a top-down and bottom-up process, can the sustainability for both government and local communities of these countries be approached in the future.

planning, a monitoring system should be implemented in order to maintain a sustainable outcome for all the three stakeholders in all the three dimensions. In this way, a win-win-win situation could be better approached. For the social dimension, monitoring the spatial planning system is necessary as well as creating local organizations in order to achieve bottom-up initiatives from local communities. An example here could be an organization for local farmers in which they can follow the training of and learn from the experience of foreign investors.

In fact, a global monitoring system should be set-up to inspect the performance of the investors in host countries to come up with a green deal. Such a system should help both the host and guest countries to make a continuous monitoring system on the consequences of the deals (Azadi *et al.*, 2013). It should therefore not be difficult for both countries to let third parties make an investigation on the consequences of TLDs. Moreover, they should intentionally ask the third parties to make such investigations continuously. Accordingly, the

monitoring system should formally be mentioned in the contract as an imperative article of the regulations.

It is also important to note which actor should be involved in the monitoring, and what would suggest that this is done objectively. Subsequently, it is important to ask “how could this actor enforce that so that in case of undesired practices, investors or government are held accountable, and actions enforced? This should be addressed in future studies. Monitoring is not only necessary for the working conditions, but also the environment. The resources found in the environment are crucial in sustaining the livelihood of local people. This is why the natural water and soil resources as well as the biodiversity (measured by the flora and fauna) and the impact on the climate change have to be monitored, as Cotula *et al* (2009) have already pointed out.

3.6 Conclusion

This study has provided a summary of the results of existing research on “land grabbing”. In accordance with the study by Azadi *et al* (2013), the sustainability of TLDs has been studied in three dimensions (social, economic and environmental) as well as in the perspective of three stakeholders (investor, host country and local community).

Accordingly, it seems that there is no absolute sustainability for local communities. As stated by Peluso and Lund (2011:669): “There is no one grand land grab, but a series of changing contexts, emergent processes and forces, and contestations”. The global surge in large-scale land investments is increasingly linked to the significant risks of negative impacts on access to and control over natural resources, food security, human rights, and the environment. These investments have been plagued by secrecy, with associated deals often made without acknowledging the role of local communities, who are thus unable to hold governments or investors accountable.

Lack of transparency in contract negotiations also develops corruption and deals that do not maximise the communities’ interest. Some recently reported land deals were associated with allegations that investors had paid cash or in-kind contributions to business or other activities run by high government officials or even the president in a personal capacity (Hervieu, 2009).

Furthermore, polarised debates about individual titling in Africa have witnessed sceptical positions from many civil society groups. The new land acquisition trend requires revisiting the longstanding debate about land titling. Local land rights systems can work well at the local level, but they are irrelevant to investors. As noted by Cotula (2009), the collective registration of community lands can be an effective tool for protecting local land rights vis-à-vis incoming investors. The international community also needs to pay greater attention to its potential role in facilitating, or tackling corruption in land

The responsibility of the host country's government for improving the sustainability of TLDs is therefore high. They need to protect their local communities and their natural resources whilst attracting foreign investments in order to guarantee economic growth, with the support of international development partners and civil society organizations. Social mobilization by community leaders and civil society organizations is crucial to ban 'land grabbing'. NGOs and other civil society communities do not only have a stake in governance, but also a driving force behind greater international cooperation through the active mobilization of public support for international agreements (Kulkarni *et al.* 2013). According to Gerstter *et al.* (2011), there are two approaches at the international level that aim at regulating transnational land deals. First is the responsible principles for agricultural investment that respects rights, livelihoods and resources by the World Bank, the International Fund for Agricultural Development (IFAD), the Food and Agriculture Organization (FAO) and the United Nations Conference on Trade and Development (UNCTAD). The other action is the development of guidelines or principles for good land governance and responsible investment in agriculture that can be taken by intergovernmental organizations (IFAD 2010). The FAO has been working on raising awareness of the importance of good governance of land and natural resource tenure in the past few years (Gerstter *et al.*, 2011). The World Bank Group (WBG) can also promote large-scale land investment in developing countries as a "win-win" situation where investors profit and host nations benefit from economic development, improved agricultural infrastructure, and employment opportunities (Azadi *et al.*, 2013). The WBG contribution to the land investment trend is direct financing of agribusiness firms.

Apart from the host nations and intergovernmental bodies, investors should also take over their complete responsibility and commitments in all this. The question surfaces whether such deals are sensible when we take into account the opportunity costs and alternative scenario's. Furthermore, there remains some other crucial questions like: How does the employment

gained compare to the employment lost? How much does the host state gain economically, when, as often happens, land is leased out very cheaply, and investors receive a range of tax breaks and subsidies? How economically viable are these large-scale investment projects? As concluded by Azadi *et al.* (2013), this study also recommends that in order to understand the main impacts of such deals, we still need to create more evidence for each situation in the framework of a series of risk assessment studies on the bases of both “country-case” and “crop-case”.

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Chapter 4 Features of land acquisition in Ethiopia

Adapted from Dereje, T., Azadi, H., Nyssen, J., Lanckriet, S., Asfaha, T.G., Mitiku, H., Witlox, F. (2016). *Dynamics in the North-South Capital Mobility and Rise of South-South Land Deals? Features of Land Acquisition in Ethiopia*. Submitted

Abstract Transnational land deals, or ‘global land grabbing’, is among the most contested but inadequately understood topics. We have dealt with the features of large-scale transnational land deals (LSTLDs) in the South, and with its consequences in the context of Ethiopia. In the present study, we applied a mixed method research design which employed both qualitative and quantitative techniques. While snowball sampling procedure is used to solicit qualitative information, databases are used to generate numeric data. Results indicated that the government commercialized nearly 2.47 million ha of land (approx. the area of Djibouti) to both domestic (excluding state projects) and transnational investors (who dealt 80% of the total land) in Ethiopia. Through these initiative actions, the Government of Ethiopia has shown its commitment to involving their private sector in the national economy. About 81 percent of the total leased land is conducted on a large-scale basis (≥ 200 ha) to transnational investors at cheap land rental prices, € 1.40 – 37 ha⁻¹ yr⁻¹, for 25-50 years. We found that there is a significant variation among transnational investors regarding the size of the land that they hold ($p < 0.0001$). Foreign companies (mean = 17,018 ha, SE = 2,293), joint-ventures (mean = 5,143, SE = 1368), and diaspora, i.e., Ethiopians living abroad (mean = 1,062 ha, SE = 129). We explored the dominance of LSTLDs deals by companies of the Global South, particularly entrepreneurs from India. Ethiopia is a good case in point that validates emerging arguments on the rise of South-South investment deals rather than the established explanation of North-South capital flows. However, three-fourths of the land deals show scant levels of performance. LSTLDs have contributed between 4.5 – 6 percent in raising domestic agricultural production but have resulted in non-performing loans for banks of the host country as well. In all probability, the land deals are leading to financial-grabbing, where Ethiopian banks are end up with non-performing loans and then must hustle with chasing ‘investors’ to settle loans counted in millions that investors borrowed in order to run their projects. In the study, we unveiled plenty of issues related to LSTLDs and narrated an exemplary lessor-lessee dispute, i.e., the Karuturi Global case. The study also specified questions for further scrutiny and policy intervention.

4.1 Introduction

‘Global land grabbing’ has become the favourite expression to describe transnational commercial land acquisitions. Globally, powerful actors are acquiring land outside of their national boundaries in order to invest in agribusiness areas. Many have regarded it as a natural supply side ‘response’ to the crop price hikes of 2007-2008 (Cotula *et al.*, 2009; Azadi *et al.*, 2013; Dereje *et al.*, 2015; Vandergeten *et al.*, 2016). Mehta *et al.* (2013) considered the transnational land acquisition was the result of the surplus liquid capital that has accumulated in the financial markets of the developed North where owners face a shortage of profitable investment opportunities. According to Zoomers (2010), it is the combined result of globalization and liberalization in land markets. The leasing or buying of large parcels of land, i.e., large-scale land acquisition, from developing countries (hereafter ‘lessors’ or ‘governments’) by transnational or domestic companies, governments or individuals, hereafter ‘investors’, is a contentious subject. It is considered as part of the prevailing manifestations within the restructuring food regime and its global economic networks (McMichael, 2013).

The rising demand for crops coupled with the tightening of factor markets in densely populated parts of Asia and the Middle East has also attributed to accelerated transnational farmland acquisition (de Hoyos & Medvedev, 2011). Some have scrutinized the phenomenon in terms of the agrarian political economy (Peluso & Lund, 2011), and political ecology (James *et al.*, 2012). Others relate it to gender relations (Chu, 2011), the role of the state (Suhardiman *et al.*, 2015), and security mercantilism (McMichael, 2013). For other scholars, it is attached to ‘water grabbing’ (Mehta *et al.*, 2013; Rulli *et al.*, 2013), food sovereignty (Rosset *et al.*, 2014), and enterprise labour (Li, 2011).

GRAIN (2012), documented 416 large-scale land acquisitions by foreign investors, claiming a total of 35 million ha of land in 66 countries. The Land Matrix database is a recently available database for transnational land transactions that has some limitations. Accordingly, in the period 2000-2015, about 1103 large-scale transnational land deals (LSTLDs) were concluded globally, transacting 40.6 million ha, more than thirteen times the size of Belgium or about equivalent to the size of Netherlands and Germany combined. Ten percent of the investors hold 68% of the overall land acquired in the stated period, implying that LSTLDs dominantly involve large land sizes, and 35% of the acquired land is in Africa (Land Matrix, 2015). Yet, this database is imprecise, a limitation that we will examine in the case of Ethiopia which is

one of the leading destinations of LSTLDs (Lavers, 2012; Dessalegn, 2011). *First*, we must ask, how and how much commercial farmland has been leased in Ethiopia so far? Some authors attempted to answer this question, but all of them stated limitations in their reports. For instance, World Bank *et al.* (2010) estimated a total of 1.2 million ha of Ethiopian land was transferred to transnational investors while the Global Land Project (GLP) stated the entirety of the commercialized land in Ethiopia was between 2.9 – 3.5 million ha (GLP, 2010). Others reported 2.5 million ha (Vhugen, 2010), 1.19 million ha (Deininger *et al.*, 2011), or 3.5 million ha (Dessalegn, 2011). However, we have presented an up-to-date data made with different categories of investors.

Second, how much does it cost to rent the leased land? How was that price determined? Who leases the land to investors? And how? And how the country's rural land administration and use proclamation affect the outcomes expected from the land deal? *Third*, the recurring transnational land acquisition is understood as the North-South investment deals (GRAIN, 2008; Zoomers, 2010). Some presume that the decline of North-South collaborations and the ascent of South-South socio-economic cooperation is a precursor for the new configurations of global power (Margulis *et al.*, 2013). Therefore, which one takes place in the context of Ethiopia?

Fourth, what are the major crop focus areas for the companies in question? And *lastly*, after years of cooperation between contracting parties (i.e., investors and the government of Ethiopia), disputes have emerged. We identified and fully explained one exemplary form of ongoing conflict between the government of Ethiopia and a transnational company that received the largest share of land from among all of the other investors. The company initially agreed to develop 100,000 ha of land (with a promise to add further 200,000 ha of land) with an annual land lease rate of Birr 20 ($\approx \text{€ } 0.83$) ha^{-1} for 50 years.

The chapter has four major sections. After this introductory section, the second part is about the study area and methodology which briefly described the study area and the research methods used. The third section presents results and discussion where much data is presented coherently with triangulation of facts for the critical analysis made. Finally, in the conclusion section, we made an inference on how the global south becomes a key player for the dynamics in the large-scale transnational land deals, and we forwarded issues for further investigation.

4.2 Study area and methodology

4.2.1 Study area

Ethiopia is a country located in the Horn of Africa (Figure 4.1) and is one of the fastest growing economies with a total area of 1.14 million km², of which 45% is arable (EIA, 2013). With a projected population of 99.4 million in 2015, it has a population density of 87 persons km⁻² and an annual population growth rate of 2.4% (United Nations, 2015). Over the period of 2004 – 2014, the country has scored a real Gross Domestic Product (GDP) growth of 10.9% (MoFED, 2010; World Bank, 2015a). By considering the national average population growth of the country, the average real GDP growth per capita is 8% per annum. In the period of 2000 – 2014, Ethiopia's human development index (HDI) has improved from 0.284 to 0.442, implying an increase of 55.6% at 3.21% annually (UNDP, 2015). The Gross National Income (GNI) per capita it is also on the proper track record in order to reach its goal of a middle-income country by the year 2025 (World Bank, 2015a). Next to the services sector, agriculture is the second largest contributor to the economic growth in the country followed by industry.

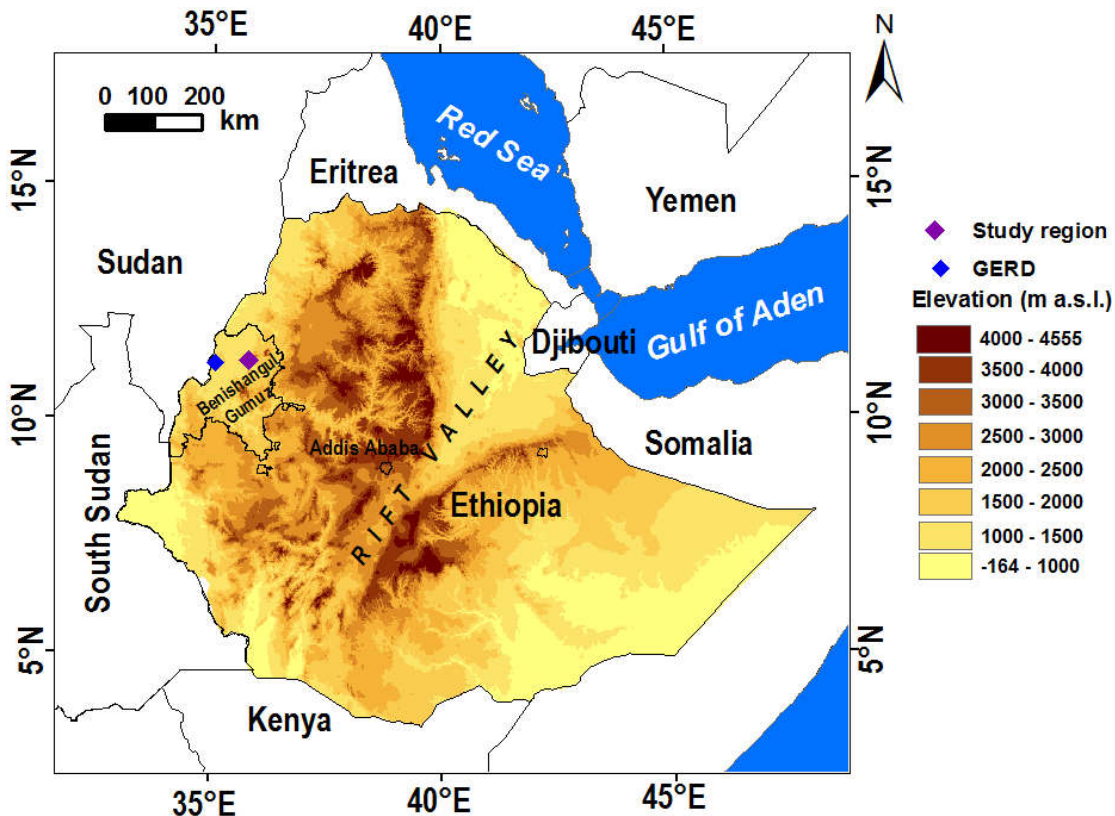
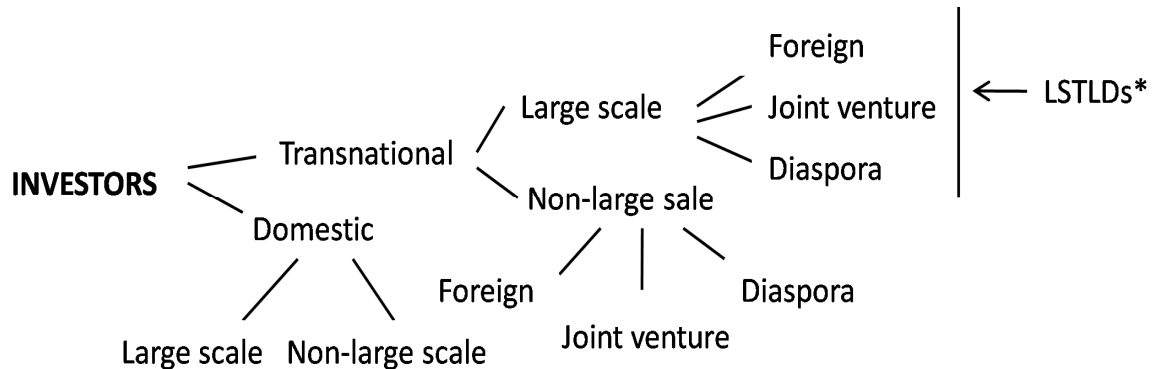


Figure 4.1 Location and topographic map of Ethiopia and Benishangul Gumuz region

4.2.2 Methodology

4.2.2.1 Types of agricultural investors

The minimum threshold set for the term ‘large-scale’ in land deals varies considerably: 200 ha (Joshua *et al.*, 2013) or 1001-10,000 ha (Baumgartner *et al.*, 2015). Some associate the term ‘mega’ as the denotation for land greater than 10,000 ha, and 500 ha (Deininger *et al.*, 2011). We considered 200 ha as the minimum threshold (Anseeuw *et al.*, 2012; Rulli *et al.*, 2013). For our analysis, we conceptually classified investors in the agricultural sector into two broader categories: viz. transnational and domestic (Figure 4.2). Multinational investors are reclassified into large scale (holding ≥ 200 ha) and non-large scale (those holding < 200 ha), where the former include foreign companies, Ethiopian diaspora businesses and joint ventures.



* The focus of the dissertation

Figure 4.2 Types of agricultural investors

[Those involved in large-scale transnational land deals (LSTLDs) and other groups of investors (where LSTLDs deals over ≥ 200 ha of land)].

4.2.2.2 Study design and data sources

The study employed a mixed-method research approach which encompasses both quantitative and qualitative measurements (Creswell, 2003). Multiple data sources were used to explore and validate figures and concerns related to land deals in Ethiopia. We used databases in the Ministry of Agriculture (MoA), Ethiopian Agricultural Investment and Land Administration Agency (EAILAA), Ethiopian Investment Agency (EIA), Central Statistical Agency (CSA), Land Matrix, and the concerned banks and investors. From the databases, data explored on a number of variables such as signed land lease contractual agreements, amount of land supplied to investors, land used per investment area and crop type, reported employment

generated and crop production. State institutions in Ethiopia have recently implemented progressive public service improvement reforms which have caused institutions to be restructured. Consequently, though quantitative desktop data is available in a relatively organized form, it is hardly possible to access consistent and up-to-date data about commercial land deals from a single source. Leased land data from 338 large-scale transnational investors, who acquired 81% of the total commercialized land in the country, were considered for the study. A snowball sampling procedure was followed in order to gather the necessary data (Figure 4.3). Snowball sampling is a non-probability sampling procedure or technique used to identify potential respondents who are hard to locate without the assistance of referrals.

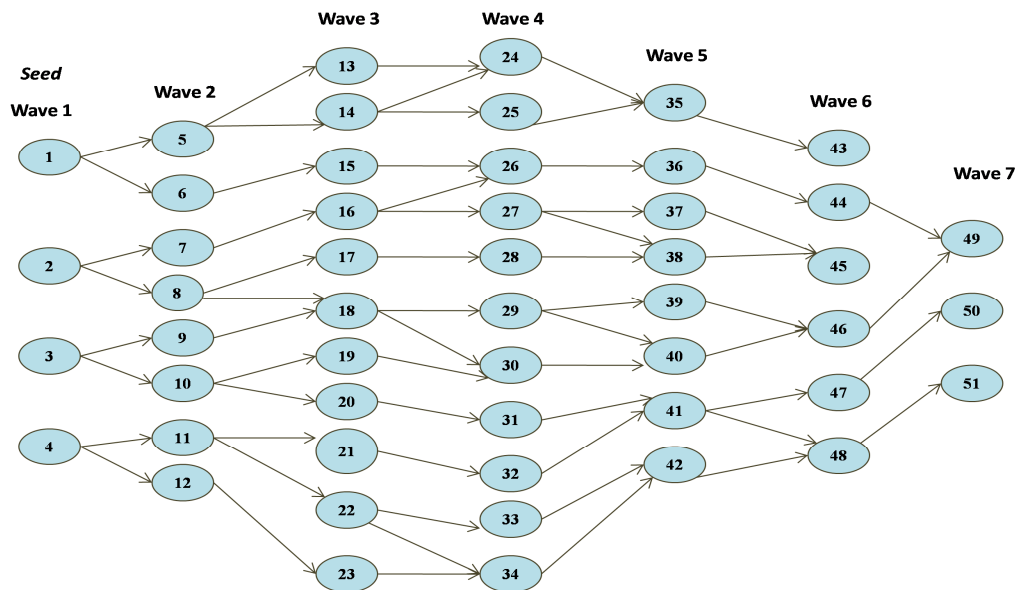


Figure 4.3 Snowballing, a recruitment network in a respondent-driven sampling (Launched with with 4 “seeds”. Adapted from Heckathorn (1997)

The method pictured above was initially developed to investigate the structure of social networks (Goodman, 1961). In our initial attempts, we realized that the most feasible method of pursuing transnational land lease data in the country was to obtain appropriate and informative members of the potential study ‘population’ using all available mechanisms (first wave, i.e. the seed). In our case, a respondent is not necessarily an individual, as we were dealing with an institutional issue (i.e., land deal), but our respondents could also be teams or process owners; the presence of which make our method a kind of modified snowball sampling (Heckathorn, 1997). In addition to its low cost, an advantage of the snowball sampling approach is its ability to locate respondents (from an unknown number of population) with reliable information (Frank & Snijders, 1994). On the other hand, respondent

bias and incorrect anchoring are some of the possible limitations of the approach (Cohen & Arieli, 2011). However, cross-validating the data with other sources such as archives, official reports, and databases was used in order to mitigate the effects of such limitations attached to snowballing.

4.2.3 Data analysis

Descriptive statistics, analysis of variance (one-way ANOVA), and qualitative analysis were used for analysis. Specifically, in the One-Way ANOVA tests the null hypothesis: $\mu_0 = \mu_1 = \mu_2 = \mu_3 = \dots = \mu_n$ where μ = group mean land size acquired by investors and n = number of groups. For our case, $n = 3$, where 'n' refers to the number of lessee groups.

$n_1 = 91$ = Foreign companies

$n_2 = 46$ = Joint ventures (i.e, foreign investors and Ethiopian diaspora) , and

$n_3 = 201$ = Ethiopian diaspora investors

Since ANOVA does not show which group is statistically different from the rest, we ran the Bonferroni post hoc multiple comparison test (Hilton & Armstrong, 2006). As an iterative and reflexive process, we began qualitative analysis while we were on a data collection mission and continued throughout the study period as described in Stake (2005). Through the process of progressive focusing (Sinkovics & Alfoldi, 2012), we consistently adjusted our data collection approaches.

4.3 Results and discussion

4.3.1 The demand for land and its supply

Since 1992, the former Ethiopian Investment Agency (EIA), presently the Ethiopian Investment Commission (EIC), has been the institution responsible for handling most of the foreign direct investment (FDI) inflows of the country. For an eleven year period (2005-2015) agriculture had a considerable share in the FDI inflow of Ethiopia. During those years, agriculture and operations related to it contributed, on average, 21% of the FDI inflow of the country (Figure 4.4).

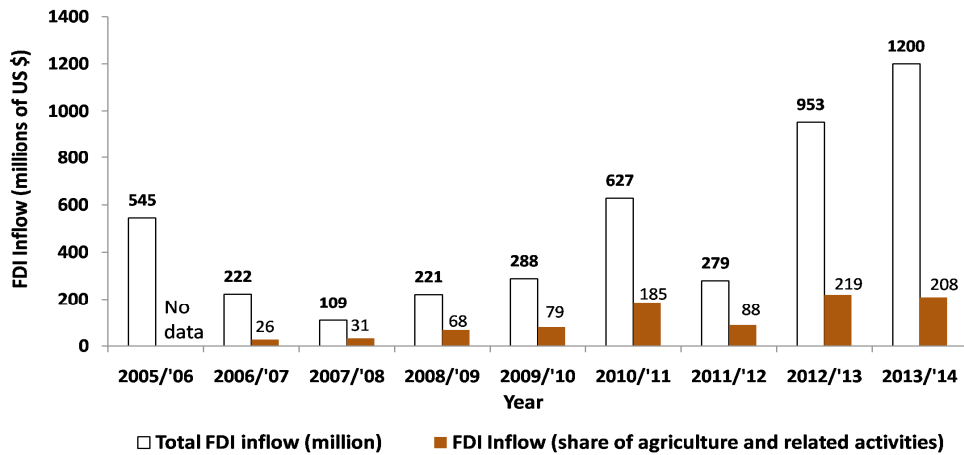


Figure 4.4 The share of agricultural in foreign direct investment (FDI) inflows to Ethiopia
 Source: Own computations from UNCTAD (2011; 2015), (World Bank, 2015b), and unpublished data from the Ethiopian Investment Agency (EIA).

The government announced the availability of 115,460 km² of land suitable in ten ‘potential areas’ of investment (Figure 4.5). The two principal areas of investment were pulses and cotton, followed by oil crops, maize, and horticulture. Later, other crops, such as sugar, were considered necessary, which led to more land being allocated. However, the stated figure is somewhat exaggerated, i.e., that it is about 10% of the total area of the country. Officials in the Ethiopian Agricultural Investment and Land Administration Agency argue that there are further available farmlands in the ‘unused’ lowlands in Benishangul-Gumuz, Afar, Somali, and Gambela regions.

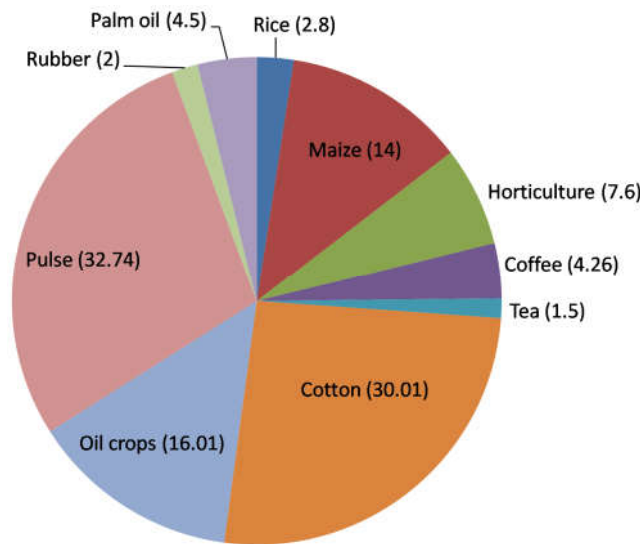


Figure 4.5 Potential areas of farming in Ethiopia as adapted from EIA (2013)
 The numbers in the parentheses represent size of land ('000 km²)

Since there is a scarcity of farmland in the highlands, renting land to investors is more common in the lowlands, for example, in the Benishangul-Gumuz region (Dereje *et al.*, 2016). According to survey results, the mean household land holding in highland Ethiopia is fragmented, on average, into 2.3 plots of land, each having 0.35 hectares (Samuel, 2006). However, there are regions in the country which have legally restricted further fragmentation of land, making it so that no plot of land may be smaller than 0.25 hectares (Segers *et al.*, 2010). According to a recent survey carried out in 10 regions of the country (i.e., all regions except Addis Ababa city), the average size of land for a single household is 1.37 hectares, though there is some variation based on the gender of the household head and place of residence (CSA & World Bank, 2013).

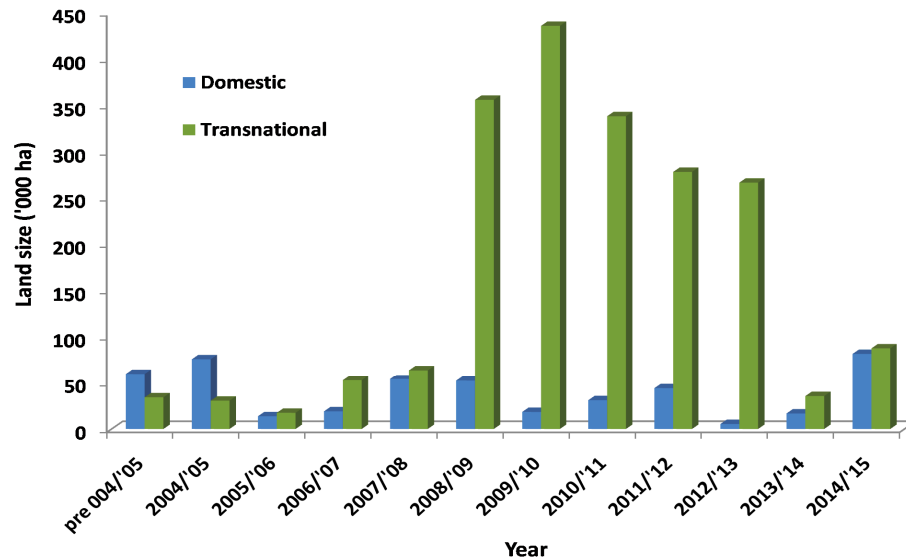


Figure 4.6 Land transferred to investors in Ethiopia each year (until September 2015).

(Source: Own computation from EAILAA (2015) and different unpublished datasets at Ethiopian Investment Agency (EIA), Ministry of Agriculture (MoA), Central Statistical Agency (CSA), and Land Matrix)

Though, according to the national investment commission (EIA, 2013), 45% of the country's total area is arable, but there are conservation laws which prohibit farming in some places. For instance, according to the Rural Land Administration and Use Proclamation (GoE, 2005b), the management of rural land with a slope < 30% should adhere to the strategy for soil conservation and water harvesting. Besides which, the development of annual crops on agricultural land with slopes 31-60% is only allowed when bench terraces have been constructed. Yet, the official declarations are ambitious when it comes to potential available

investment land. How much commercial farmland is leased in Ethiopia so far? A great deal of it was leased between 2008/'09-2012/'13 (Figure 4.6).

Table 4.1 Overview of transnational land leases in Ethiopia

Rank	Company/investor	Origin	Major crop	Total area leased (ha)	Share (%)
1	Karuturi Global Inc	India	Oil palm, cereals	100000	4
1	Boleyn industrial PLC	China	Rubber	100000	4
1	LHB Israel PLC	Israel	Jatropha	100000	4
4	Sun Biofuels Ethiopia (NBC)	UK	Jatropha	80000	3.2
5	Acazis Agro-Industry	Germany	Peanuts, castor	56000	2.3
6	Adventure Ethiopia Agric PLC	China	Cereals	50000	2
6	S and P Energy Solutions PLC	India	Pongamia	50000	2
8	Horizon Plantation PLC	Saudi Arabia	Coffee, tea	49662	2
9	Ethio Agri-CEFT PLC	Saudi Arabia	Tea, flowers	48248	2
10	Hovev Agriculture Ltd	Israel	Jatropha	40000	1.6
11-20	Various companies/investors	various	Oil crops, cotton	334800 (33480)	1.4
21-50	Various companies/investors	various	various crops	520986 (17366)	21
51-100	Various investors/investors	various	various crops	294636 (5893)	12
101-200	Various companies/investors	various	various crops	118889 (1189)	4.8
201-338	Various companies/investors	various	various crops	45474 (330)	2
Total (under transnational investors*, occupying ≥ 200 ha)				1,998,695	81
Domestic (excluding state-owned enterprises)				472,205	19
Total commercialized land				2,470,900	100

Numbers in brackets indicate average size of leased land in the group

*Transnational investors include Ethiopian diaspora, i.e., Ethiopians living abroad

Of the total 3.815 million ha of land in different regions of the country that was solicited (EAILAA, 2015), 2,470,900 ha of that land has been leased to investors (Figure 4.6). Among the total land transferred to transnational investors, large-scale land deals (i.e., land 200 ha or greater) constituted 81% of the whole land that was leased either to a foreign or a foreign-Ethiopian joint venture investment. (Table 4.1). The market rental price of land was € 1.40 – 37 ha⁻¹ yr⁻¹ (overall, an average lease price is about € 7.65 ha⁻¹ yr⁻¹), a much lower rate even when compared to local land rental market prices. Local land lease prices vary considerably within and across regions, for instance, the lease rate in the Benishangul-Gumuz region is € 83 – 140 ha⁻¹ yr⁻¹ with a regional average of € 107 ha⁻¹ yr⁻¹.

4.3.2 Who leases land to investors?

The land is leased by two actors in the country (Figure 4.7): by the federal government (from the federal land bank), and by the regional governments (from the land they administer). As a Federal State, Ethiopia has two special administrative cities that are accountable to the federal government and nine regional states that are autonomous in regard to their regulatory affairs. The powers and functions of both the federal and regional governments are demarcated in the constitution of the country (GoE, 1995). Accordingly,

The right to ownership of rural and urban land, as well as of all natural resources, is exclusively vested in the State and in the peoples of Ethiopia. Land is a common property of the Nations, Nationalities and Peoples of Ethiopia and shall not be subject to sale or to other means of exchange (GoE, 1995, Art.40/3).

The federal government is mandated to enact laws that utilize and conserve land and other natural resources, historical sites and objects (Art.51/5). In line with this, in 1997 it enacted a Land Administration and Use Proclamation, i.e., Proclamation no.87/1997, which was later replaced by the current Rural Land Administration and Land Use Proclamation, Proclamation no.456/2005 (RLALUP) (GoE, 2005b). It also passed a law on the expropriation of landholding and the accompanied compensation, Proclamation no.455/2005 (GoE, 2005a). Furthermore, there are other rules and regulations that were formulated by parts of the federal government, such as the Council of Ministers and the Ministry of Environmental Protection and Ministry of Agriculture. There also are federal laws that regulate further land administration issues, such as the Urban Land Lease Proclamation (GoE, 2011) and the Investment Proclamation (GoE, 2012).

Regional states, on the other hand, have the jurisdiction to administer land within their respective dominions (GoE, 1995). According to the first Rural Land Administration and Use Proclamation, Proclamation no. 89/1997 (GoE, 1997), which allowed regions to pass laws in order to administer land within their territory. Later, the stated proclamation was revoked by a new Rural Land Administration and Use Proclamation, Proclamation 456/2005 (GoE, 2005b). One of the primary reasons for revoking Proclamation no. 89/1997 was ‘to encourage private investors in pastoralist areas where there is tribe based communal land holding system’ (GoE, 2005b:2). This later allowed investors to use the land they lease as collateral: investors could

borrow money from banks using their lease holding right. However, customarily-owned grazing land, forests, wetlands and land that are not under cultivation were misconstrued as, 'idle,' 'unused,' a 'waste,' 'unoccupied,' and 'underutilized' (Cotula *et al.*, 2009; Dereje *et al.*, 2016).

Before 2008, regions did not restrict the size of the land they leased to investors. However, in 2008 the federal government decided to assign a central state branch responsible for large-scale land lease. Consequently, the responsibility was given to the Ministry of Agriculture and Rural Development, i.e., the current Ministry of Agriculture (MOA). In February 2010, the Council of Ministers empowered the Ministry of Agriculture (MoA) to lease land measuring 5000 ha and above on behalf of regional states, while regions continued to be limited to mandating the leasing parcels up to 5000 ha. Consequently, a partial recentralization of investment land administration through the establishment of a 'land bank' system was installed, through which the MoA solicited land from regions and leased it to investors (Figure 4.7).

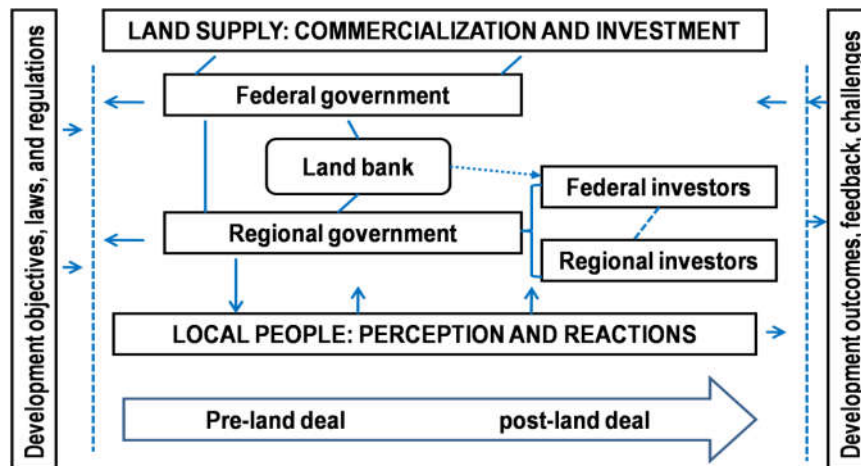


Figure 4.7 The land commercialization framework in Ethiopia

The Ministry prepared a number of information packages and was able to attract many investors in the sector. It was also in charge of signing contracts with investors, transferring land, and follow-up. While the MoA accomplished most of the land lease processes, income generated from the land deals, such as land rental payments and income tax, was intended to benefit the regions. However, in practice, the regions collect payments from those 'regional investors', i.e., from those investors who signed lease agreements with the regional governments. The issue is still a point of contention among regional government offices.

Furthermore, the federal government has automated and institutionalized the relatively transparent process of obtaining an investment license and registration: a prerequisite for an investor to get land (Figure 4.8). Previously, the process was full of intricate bureaucratic procedures and discouraged investors.

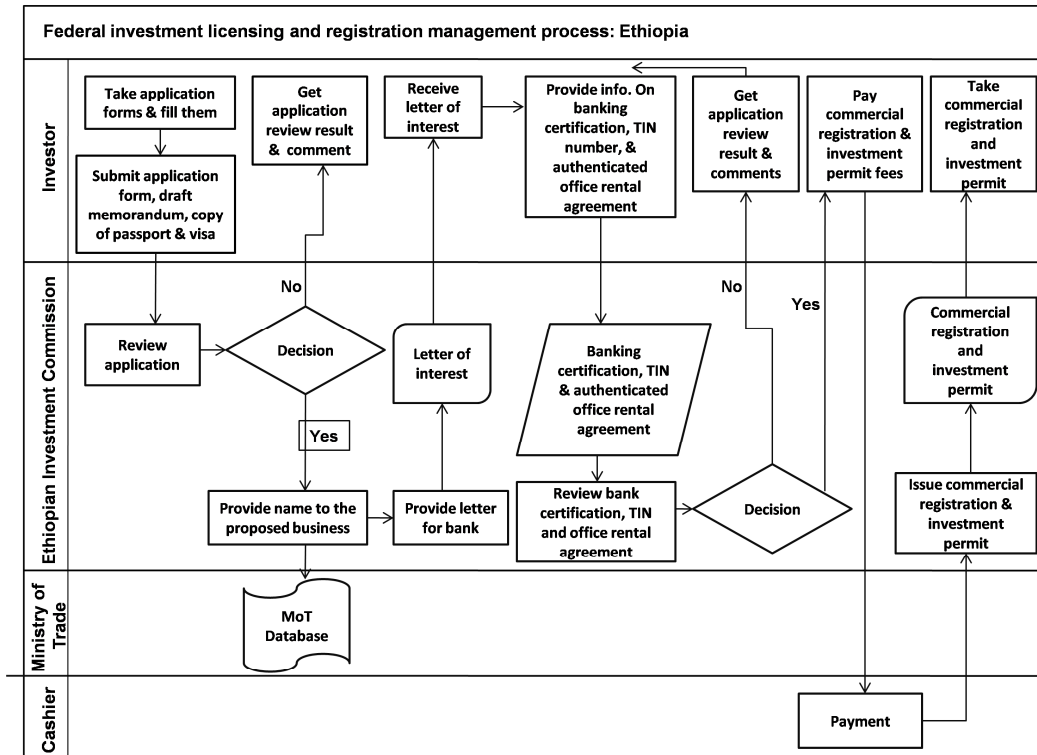


Figure 4.8 Investment licensing and registration procedure in Ethiopia

(Based on key informant investors and officers at Ethiopian Investment Commission).

Though the commercialization of land has produced a shared economic development objective and was made within available institutional frameworks, the local perceptions and reactions of both the pre-deal expectations and post deal achievements were taken into account. We explored the strongly felt concern that the federal government (through its institutions) is violating one of the basic tenets of regional self-administration, thus compromising the regions' autonomy in administrating their land. Analogous with our finding, Lavers' arguments (Lavers, 2012) emphasized that the land deals in Ethiopia are the manifestation of the political economy of agricultural investment. Particularly, two regions in the country, i.e., the Benishangul-Gumuz and Gambela regions, are examples where the MoA has leased about 470,000 ha of land to investors on behalf of the regional states. In practice,

however, the MoA has also been involved in leasing land below 5000 ha. For example, Verdanta Harvest PLC (3012 ha), Keystone Agro-industry PLC (431 ha), and AlMehadi Match Marketers PLC (1000 ha) are among the companies that signed a lease agreement with the Ministry of Agriculture although the land they leased is below 5000 ha. Furthermore, the role of the federal government and the role of the regional states in leasing land to investors is ambiguous and irregular, which contributes to the limited progress of the sector.

4.3.3 Landholding variability among investors

Results revealed a statistically significant variability among lessee groups (i.e., transnational investors) concerning the size of land they hold, $F_{(2,325)} = 56.22$, $P < 0.0001$ (Table 4.2). A post-hoc Bonferroni test revealed there are statistically significant differences between foreign companies (mean = 17,018 ha, SE = 2,293), joint lessee groups (mean= 5,143, SE = 1,368), and diaspora investors (mean = 1,062, SE= 129) (Table 4.3).

Table 4.2 ANOVA Summary table for the land size leased for three groups of investors

Source	SS	DF	MS	F	Prob >F
Between groups	1.5980 ^e +10	2	7.9902 ^e +09	56.22	0.0000
Within groups	4.7612 ^e +10	335	142124660		
Total	6.3592^e+10	337	188701063		

Bartlett's test for equal variances: Chi2(2) = 660.4585 Prob >chi2 = 0.000

Table 4.3 Comparison of land size among lessee groups(one-way ANOVA) and generated employment

Lessee group	Obs	Mean	Std.Error		Employment	
			(SE)	Std.Deviation	Permanent	Seasonal ¹
Foreign companies	91	17018.44	2293	21877	9,436	251140
Joint (Foreign and diaspora ²)	46	5142.8	1368	9276	942	40883
Ethiopian diasporas	201	1061.93	127	1823	1281	26540
Total	338	5905	1023	18757	11659	318563

¹Employees who were not employed permanently but were in paid works for at least one month

²Few foreign or diaspora investors jointly established ventures with local Ethiopian investors and we categorized them on the basis of investment share each has allocated. Source: Own computation from EAILAA (2015) and different unpublished datasets at Ethiopian Investment Agency (EIA), Ministry of Agriculture (MoA), Central Statistical Agency (CSA), and the Global Land Matrix).

While there is a relatively small variation of holdings among Ethiopian diaspora investors (SE= 127), high variation is observed among the remaining groups. Even though the expectation of employment opportunities was many times greater, investors only employed 11,659 and 31, 8563 persons on permanent and seasonal bases, respectively. For a better understanding of the distribution of land sizes refer Figure 4.9.

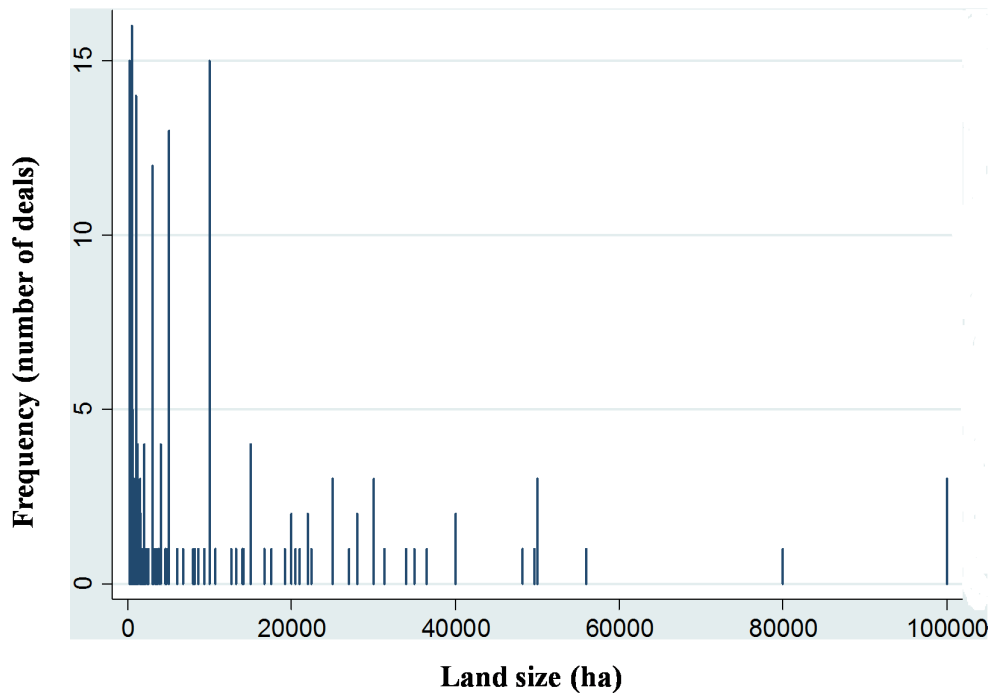


Figure 4.9 Distribution of land size leased for all large-scale transnational investors

According to the databases we consulted at the Ministry of Agriculture (MoE), the average expected job creation was 0.012 jobs ha⁻¹ (MoA, 2010). However, according to Deininger *et al.* (2011), the average job creation in Ethiopia was 0.005 jobs ha⁻¹, while it was 0.01- 0.351 jobs ha⁻¹ in the Democratic Republic of Congo (Deininger *et al.*, 2011), and 0.014 jobs ha⁻¹ in Brazil (FAO, 2012). Yet, we actually have found 0.008 permanent jobs ha⁻¹ and 0.19 seasonal jobs ha⁻¹. It is expected that there would be a higher contribution of jobs if investors operated in a full capacity over all of the land they leased. However, smallholder farming is more efficient than that of large farms and is able to create a greater amount of productive employment (Thapa & Gaiha, 2011). The deals generated 11,659 permanent jobs and on average 318,563 seasonal jobs (Table 4.3). Compared to what was expected six years ago, the overall employment generated is significantly smaller and the reasons for that are due to the meager implementation status of projects and the seasonal nature of agricultural jobs.

4.3.4 Origin of investors for the LSTLDs

Companies from India took the lead in acquiring 358,000 ha (14.5% of the total leased land) of land, followed by companies from Saudi Arabia (9.1%), Israel (7.3%), China (7.1%), the USA (6.5%) and Germany (5%) (Figure 4.10). We explored that companies from ten countries hold about 1.50 million ha of farmland, i.e., 61% of the land leased to transnational investors and 64% of the total farmland commercialized in Ethiopia (Figure 4.10). GRAIN (2012a) reported that Indian companies took the lead in acquiring about 71.7% of the total leased land, followed by Saudi Arabia (13.4%), Germany (5.4%), Italy (2.9%) and USA (1.7%). Despite the fact that there are limitations in the land lease system, the government of the country was successful in attracting investors from more than 42 countries.

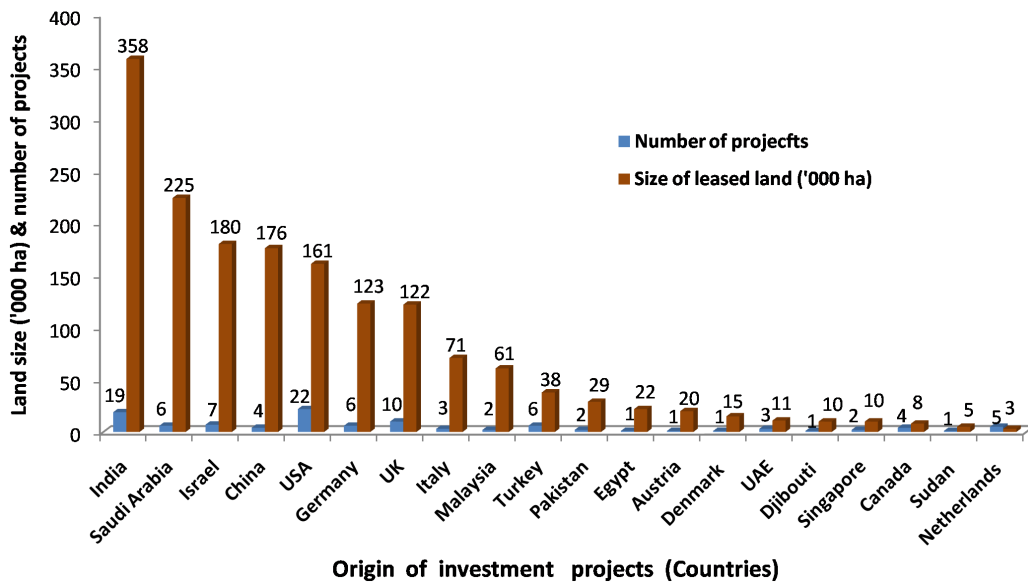


Figure 4.10 Leading country of origins for foreign companies which acquired land in Ethiopia

(By number of projects and size of leased land)

Much of the emerging literature considers the recent wave of transnational land deals, or the ‘global land grab’, as the North-South business investment arrangement in which European and North American dealers are the principal actors. Contrary to this, our findings strengthen arguments that purport the rise of South-South deals (Margulis *et al.*, 2013), as land deals in Ethiopia, for example, are dominated by Indian entrepreneurs (Figure 4.10). Is the rise of such of South-South investment deals fresh opportunities or do they bring new threats to host countries of the south? Further case-by-case investigations can add meaningful contributions in this regard. Even in other investment sectors (such as in manufacturing), companies from

the South played predominant roles in Ethiopia. For example, Xinxiang Kuroda of China invested \$67 million in the textile industry and created about 1,100 jobs (UNCTAD, 2011).

4.3.5 Land lease fee

Land is an invaluable natural resource, serving both as an input in production and as the store of wealth and thus, it should be valued properly. Furthermore, an astute understanding of land as a scarce resource with competing benefits and values among land governance bodies precedes the allocation of the land itself and of other investment inputs on it (Burger, 1998; Price, 2000). However, there is fundamental issue that makes land valuation difficult. The objective of land valuation, the process of assessing and evaluating the characteristics of a given parcel of land, is to determine the value i.e. market value or benefit value, of the land (Demetriou, 2016). This process not only requires an understanding of the market and non-market valuation methods, but also the philosophical and theoretical underpinnings related to land (Ricardo, 1817; Marx, 1965; Dachary & Rambonilaza, 2012).

For many of the lease agreements, land deals passed through price negotiations made between investors and the government of Ethiopia. Due to a weak land management information system, limited infrastructure, a rushed and ill-organized land lease processes, the government has little bargaining power when it comes to determining land lease prices. Until December 2008, the maximum annual per hectare land lease rate was in the Oromia region, Birr 135 (€ 9.25), followed by other regions such as SNNP, Birr 117 (€ 8.01), and Amhara, Birr 79.37 (€ 5.44).

The minimum land lease price was in Amhara, Birr 14.21 (€ 0.97), followed by Benishangul-Gumuz, Birr 15 (€ 1.03) and Gambela, Birr 20 (€ 1.37). However, by December 2008, the Ministry of Agriculture (MoA) drafted a more generalized land lease price guideline (Table 4.4) and applied it to some of the land lease contracts. Accordingly, the land lease rate was then determined in consideration of five fundamental factors viz., labour, capital, business profitability, indirect costs, and cost of transportation from ports. However, the prices do not reflect the real market value of the land (at least the local land rental rates). As a result, in consideration of the stated conditions (i.e., the location of parcels within 600 – 700 km

distance from the capital city and non-irrigable land, Table 4.4), the proposed lease rate, Birr 111, (€ 4.81 – 6.45 ha⁻¹yr⁻¹) was effected.

Table 4.4 Land lease price for the production of crops: categories A & B

Category A: Land lease price for the production of all crops (except for cotton and sesame)				
Distance (km) from a reference city (Addis Ababa)	Irrigable land (ha ⁻¹ yr ⁻¹)		Non-Irrigable land(ha ⁻¹ yr ⁻¹)	
	Birr	EUR (€) ¹	Eth Birr	EUR (€)
With in Addis Ababa region	3077	188.31	2946	180.29
Within 100 km distance	2660	162.79	2541	155.51
100-200	2243	137.27	2136	130.72
200-300	1826	111.75	1731	105.94
300-400	1409	86.23	1326	81.15
400-500	992	60.71	921	56.36
500-600	557	34.09	516	31.58
600-700	158	9.67	111	6.79
Category B: Land lease price for the production of cotton and sesame				
Distance (km) from a reference location (Ethio-Sudan border)	Lease price			
	Eth Birr(ha ⁻¹ yr ⁻¹)	EUR (€ ha ⁻¹ yr ⁻¹)		
Starting point	880.42	53.88		
Within 100 km distance	805.42	49.29		
100-150	767.92	47		
150-200	730.42	44.70		
200-250	692.92	42.41		
250-300	655.42	40.11		
300-350	617.92	37.82		
350-400	580.42	35.52		
400-450	542.92	33.23		
450- 500	505.42	30.93		

¹ 1EUR ≈ 16.34 Birr (exchange rate in June 2010). Source: Adapted from MoA (2012)

Investors such as BHO Bio-products PLC, Verdanta Harvests PLC, Gashaw Bizu, Green Valley Agro PLC, Ruchi Agri PLC (Table 4.5), and many others that are not stated here, took land within a 600-700 km distance from the capital city. However, contracts made for irrigable parcels but within the same 600-700 km distance from the capital city, a slightly higher lease rate of Birr 158 (€ 4.82 – 7.22 ha⁻¹yr⁻¹) was effected. As was the case in the land lease agreements made with companies such as Sannati Agrofarm PLC, Hunan Dafengyuan Agriculture Co., LTD, etc. (Table 4.5).

Table 4.5 Details of some of the large scale transnational land lease agreements made with the Ministry of Agriculture, Ethiopia

Name of company, Project or investor	Investor's Origin	Major Crop(s)	Area (ha)	Rank (Table 4.1)	Lease period (years)	Registered capital (millions) ¹		Lease price (€ ha ⁻¹ yr ⁻¹)	
						Birr	EUR ²	Birr	EUR ²
BHO Bio-products PLC	India	Cereals, crops	27000	22	25	918	53.34	111	6.45
Sannati Agrofarm PLC	India	Rice, cereals	10000	47	25	160	7.21	158	7.12
Verdanta Harvests PLC	India	Tea	3012	97	50	631	35.27	111	6.20
S & P Energy Solutions PLC	India	Biofuel	50000	6	50	984	54.88	134.40	7.50
Keystone Agroindustry PLC	Diaspora	Cereals, fruits	431	238	25	66	2.9	712	31.32
CLC Industries PLC	India	Cotton	25000	23	50	1177	65.39	665.85	37.00
Karuturi Agroproducts PLC	India	Palm, cereals	100000	1	50	2110	147.55	20	1.40
Saudistar Agri Devt PLC	Saudi Arabia	Rice	20500	31	50	37640	2071.55	30	1.65
Hunan Dafengyuan Agriculture Co., LTD	China	Sugarcane	25000	23	40	25000	1143.12	158	7.22
Kehedam Trading PLC	Diaspora	Oil crops	3000	98	25	13	0.56	337.8	14.42
Saber Farms PLC	India	Cotton, soybean	25000	23	25	436	18.06	158	6.84
Toren Agroindustries PLC	Turkey	Cotton, soybean	6000	68	25	1000	43.29	158	6.84
Agropeace Bio Ethiopia PLC	Israel	Castor oil, cotton	2000	114	25	253	11.35	665.85	29.87
AlMehadi Match M PLC	Pakistan	Match stick	1000	139	30	79	3.64	649.65	29.94
Gashaw Bizu	Diaspora	Cotton, soybean	3000	98	25	44	1.90	111	4.81
Green Valley Agro PLC	India	Cotton	5000	71	25	171	7.42	111	4.81
JVL Overseas PTE LTD	India	Cotton	5000	71	25	74	3.35	158	4.82
Omo Valley Farm Cooperation PLC	Turkey	Cotton	10000	47	25	750	33.94	158	7.15
Daniel Agri Devt	Diaspora	Cotton	5000	71	25	65	4.74	158	7.15
Ruchi Agri PLC	India	Soybean	25000	23	25	1451	80.97	111	6.19

Source: Own computations from MoA (2013)

¹ For clarity, we stated monetary values in two currencies: Birr = Ethiopian currency, and EUR or Euros (€)= European currency

² Local currency (Birr) was converted to EUR based on currency conversion rate announced on the date of each land lease agreement

There also are enterprises that concluded lease agreements with a rent price rates as little as Birr 20 (€ 1.40 ha⁻¹yr⁻¹), effected over 100,000 ha (≈ 1000 km²) of land for 50 years. The contracts were made for 25 - 50 years with a possibility of renewal for additional years if agreed upon between the pertinent parties, i.e., the Ministry of Agriculture and investors. More than anything else, the 25-50 year rental agreements did not properly consider the time value of money and the appreciative value of land. As time value of money and the appreciative value of real estate, such as land, are the key fundamental variables in investment decisions (Gilg, 2009; Haberl *et al.*, 2004; Lavee, 2015; Mike, 2005).

The annual lease rate for a hectare of land varies among agreements, and it was generally € 1.40 - 37 ha⁻¹yr⁻¹ (Table 4.5). The deals in question involve large swatches of land with dirt cheap lease rates, a three year grace period, and five year income tax holidays. A grace period is an amount of time after the agreed land lease payment becomes due. Lease payments that were supposed to be made during the three years grace period were prorated over the remaining years annually, commencing from the contractual agreement's date of execution. Investors were also fully exempted from paying customs duties and other taxes levied on imported capital goods, such as machinery essential to operate their business. In addition, there are further investment and export incentives for investors depending on their business license and the location of investment (EIA, 2013). Both the lessee and lessor have stated rights and obligations that are narrated in Dereje *et al.* (2016). For most of the land lease agreements, the lessor, i.e., the Ministry of Agriculture, reserves the right to revise the lease payment. From an intensive review of contract archives, the modalities of revising lease rates can be classified into three major groups:

Category 1: *The lessor reserves the right to revise the lease payment rate as the need may arise in consultation with the lessee. As in the case of the agreements signed with companies such as Shaporji-Paltonji (S & P) Energy Solutions PLC for 50,000 ha of land in the Benishangul-Gumuz region and Whitefield Cotton Farm PLC for 10,000 ha of land in region of the Southern Nations Nationalities and Peoples.*

Category 2: *The lessor reserves the right to revise the lease payment after ten years of such last fixation as the need may arise in consultation with the lessee. However, if there might be an increment in the rate of the lease, it shall not exceed 20% of the existing rate.*

Examples for such agreements include those contracts signed with Ruchi Agri PLC for 25,000 ha of land in the Gambela region and BHO Bio-products PLC for 27,000 ha of land in the same region.

Category 3: *The lessor reserves the right to revise the lease payment after ten years of such last fixation as the need may arise in consultation with the lessee. However, if there might be an increment in the rate of the lease, it shall not exceed 10% of the existing rate.* As in the case of the agreement signed with CLC Industries PLC for 25,000 ha of land in the Amhara and the Benishangul-Gumuz regions.

There are no guidelines for the three categories of lease rate revisions and it is a matter of negotiation between the lessor and the lessee. Parties agreed to administer the contracts in accordance with the laws of Ethiopia and the conditions for force majeure would be governed by the Ethiopian Civil Code. For example, before starting a business operation, it is mandatory for investors to get investment and trade licenses in accordance with Ethiopian investment and trade laws. However, in some cases we uncovered, transnational investors insist that the termination of contracts to be made in line with the multinational bilateral investment treaties signed between the governments of the host country (Ethiopia) and their country of origin.

Regional states also have their investment land lease rates fixed by their respective regional governments, as it is in the case of Benishangul-Gumuz (Dereje *et al.*, 2016; GBGR, 2009). So, depending on market circumstances, regional governments could revise their rates. To sum up, the general commercial land supply and the large-scale transnational land deal, in particular, was made with neither fair land valuation nor with a proper cost-benefit analysis for lease projects.

4.3.6 Crop focus

Sesame, sorghum, maize, and wheat are the dominant crops that occupy 53% of the commercially cultivated land. However, in terms of production volume, maize sesame, and wheat are the dominant crops produced by commercial farms over the stated period. As they are perennial crops, palm oil and jatropha have not been harvested so far. However,

there has been a disappointing performance among companies that invested in biofuel plantations. For example, the UK-based Sun Biofuels company signed an agreement for 80,000 ha of land for a *Jatropha* plantation in Metekel Zone of the Benishangul-Gumuz region, yet it terminated the contract for agronomic reasons, mainly due to moisture stress. According to Mengistu (2016), the reasons for the ineffective operational progress among biofuel companies are moisture stress, high opportunity cost of land and labor, and conflict with local communities over alternative land use.

When comparing the cultivated land versus crop cover, in 2011 about 0.6 million ha of land was cultivated and covered by 12 crops, about 42% of which was sesame (Figure 4.11). Sesame, cotton, and coffee are the leading crops among cultivated land. While the government supported sesame and coffee exports, the production of cotton was also encouraged for the expanding domestic textile industries. In the period of 2012-2015, the total cultivated land has risen incrementally along with corresponding rises in crop cover. However, in 2015, there was a decline in both cultivated land and the volume of crop production. The primary reasons were: Some investors engaged in disputes with government (Eg. Karuturi) and thus did not pursue a better performance as they did in the previous years, and the El Niño effect (WFP, 2015), which resulted in erratic rainfall in some parts of the country. The 2015 El Niño effect caused farms covered with sesame to decline and the production of sorghum and maize to rise, as some sesame producers shifted their cultivation to sorghum and maize because they considered them to be relatively better at resisting moisture stress, as compared to sesame.

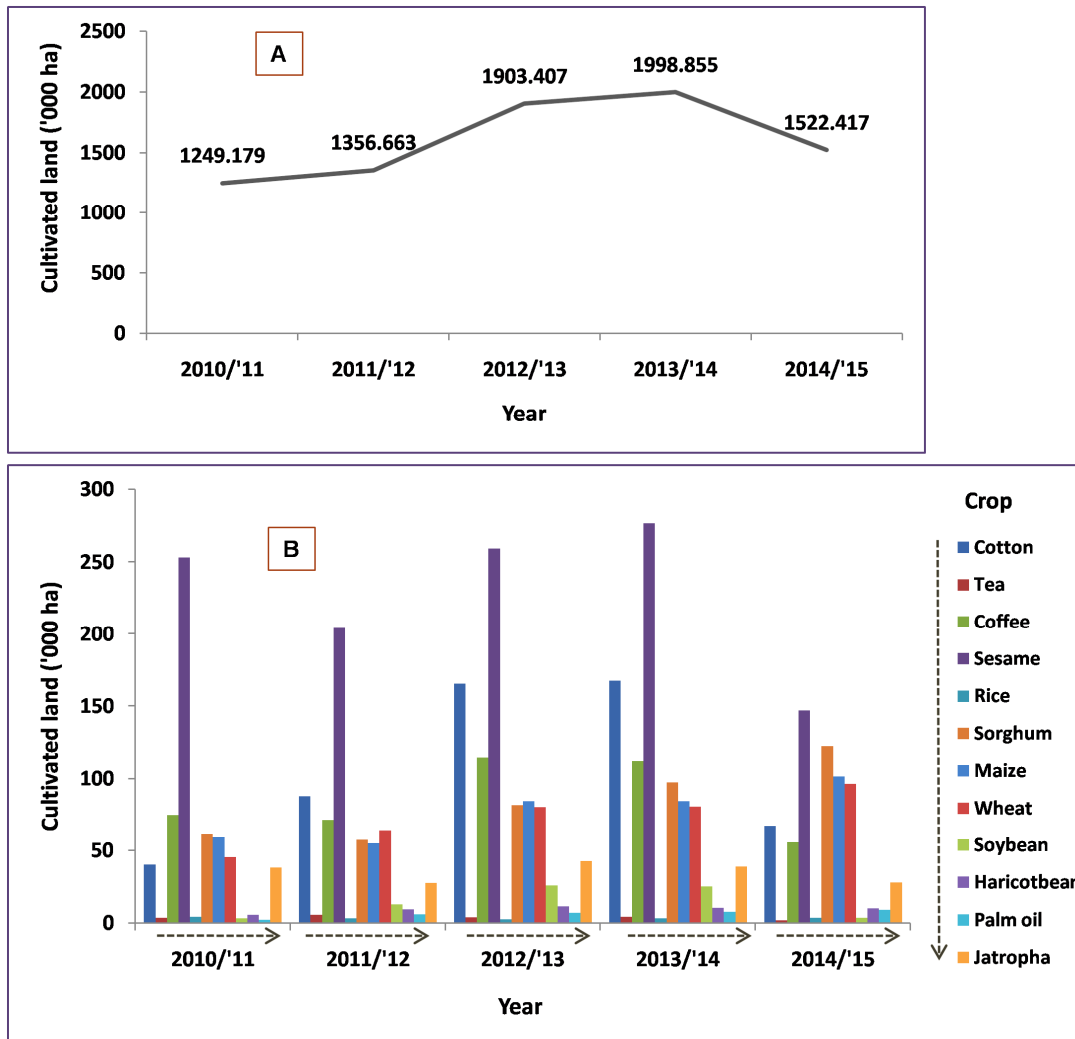


Figure 4.11 Cultivated commercial land (A) and developed crop cover (B)

Source: Own computation from databases at Central Statistical Agency (CSA) and (EAILAA, 2015)

In a five-year period (2011-2015) the volume of production from commercial farms, excluding jatropha and palm oil, investors contributed to the production of 11.10 million tons of crops, with a yearly average production of 2.22 million tons. Among the ten major crops produced commercially, maize, sesame, and wheat were dominantly produced, with a share of 28%, 22%, and 19%, respectively. For the year of 2014, while smallholding farmers produced 25.2 million tons (CSA, 2015), investors' production reached 1.6 million tons, which was 6% of the total crop production in the country. In regard to crop productivity, on average, smallholding peasants produced 34.1 quintals ha⁻¹ (CSA, 2015) of maize, while the productivity of large-scale commercial farms was 37.02 quintals ha⁻¹. For

wheat, smallholding farmers produced 25.43 quintals ha⁻¹(CSA, 2015) while the yield among commercial farms was 29 quintals ha⁻¹ (Figure 4.11).

Productivity among commercial farms is higher by 9% (for maize) and 14% (for wheat) compared to small-scale farms. While there is a significant inter-annual variability in the production of cotton and sorghum, there was less variability in the case of soybean, sesame, and haricot bean (Figure 4.12). Sorghum in agro-ecological settings is comparable to Australia, where yields are 36 quintal ha⁻¹ (Deininger *et al.*, 2011). Yields are only 22.40 quintal ha⁻¹ in the case of Ethiopian large-scale commercial farms and 23.69 quintal ha⁻¹ in the case of Ethiopian traditional farming (CSA, 2015). However, Ethiopia is much better in the case of sorghum productivity compared to other sub-Saharan Africa countries like Sudan, where productivity is 4.10 quintal ha⁻¹ (Deininger *et al.*, 2011).

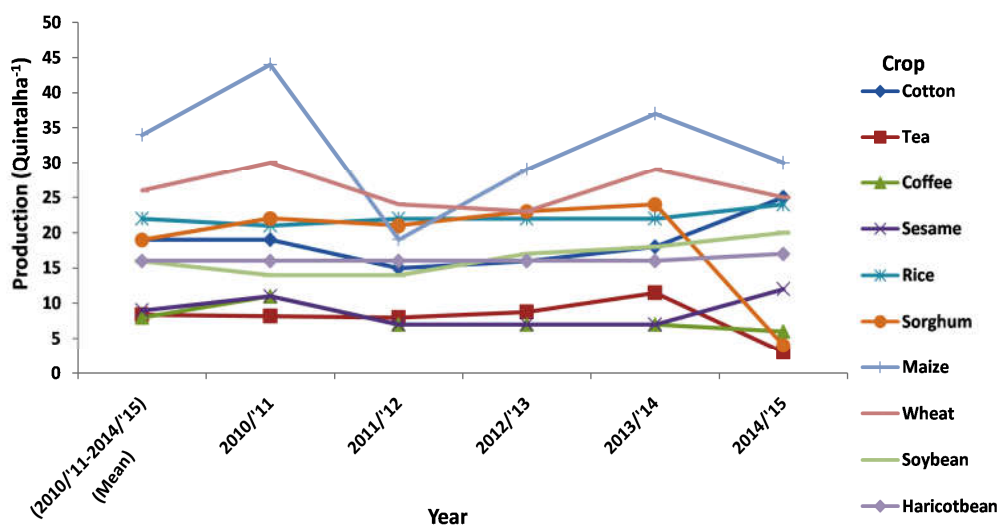


Figure 4.12 Crop productivity of commercial farmlands for the five-year period

Source: Own computation from EAILAA (2015) and Central Statistical Agency (CSA)

Among commercial farms, the most commonly declared justification for this by key informants, was the development of new land (as most of them stated it 'virgin lands'), while the peasant sector holds that the cause is nutrient depleted and degraded farmlands. Furthermore, in the first 2-3 years, commercial farmers did not apply chemical fertilizer in order to get the aforementioned yield, while the peasant farmers did. Further studies about farm level productivity among the two groups of farming could have interesting findings

according to different scales, crop types, farm inputs and the application of farm level technologies.

4.3.7 Commercial farmlands as collateral

Article 8(4) of the Ethiopian Rural Land Administration and Use Proclamation, Proclamation 456/2005 (GoE, 2005b) states:

An investor who has leased rural land may present his use right as collateral

Ethiopian smallholder farmers, however, do not have the same right to use landholdings as collateral, as is provided for large-scale commercial farmers or domestic, diaspora or foreign investors. As a result, many investors (including the large transnational companies that had been expected to come with hard currencies and invest in Ethiopia) took outloans from Ethiopian banks. Prominently, the major lenders that finance investors in order to implement agricultural investment projects in the country are the two state owned banks, i.e., the Development Bank of Ethiopia (DBE) and the Commercial Bank of Ethiopia (CBE), as compared to other non-state banks. However, the banks are facing an increasing risk of non-performing loans than expected, as companies are not implementing their plans according to the promises they expressed. The Development Bank of Ethiopia (DBE) has a significant share in providing loans to commercial farmers. Its scheme is to provide loans that cover up to 70% of the total agricultural project budget as long as investors are able to cover the remaining 30% of the total cost stated in the farming project proposal (DBE, 2014).

According to the existing laws, investors have the right to use the land they have leased as collateral to banks in order to get loans, as stated in art. 8(4) of the Rural Land Administration and Use Proclamation (GoE, 2005). However, a system which can concurrently monitor whether or not the borrowers have allocated the loan for the intended purpose of boosting the production level of commercial farms has not been established. According to key informant interviews and relevant data bases, agriculture is the second leading beneficiary of bank loans, next to industrial loans. For example, within the span of two years (2013/14- 2014/15), all the banks in the country disbursed a total of Birr 135.45 billion (equivalent to € 5.64 billion) in loans to investments made in various economic

sectors, from which 55.5 % of the loans were provided by public banks (National Bank of Ethiopia, 2016).

Agricultural loans account for 23.94 billion Birr (\approx € 1 billion) or 17.7% of the total loans provided in the country. By the end of 2014/15, the total outstanding loans equaled 231.8 billion Birr (\approx € 10 billion), 12.5% of which consisted of investors' loans in the agriculture sector. Agricultural investment projects are characterized by the accumulation of unpaid loans, where 8.5% of the total outstanding loans accumulated in Ethiopia (34.4 billion Birr (\approx € 1.43 billion)) is made up of the outstanding credit in the sector (National Bank of Ethiopia, 2016). 70% of the outstanding loan (about € 1.43 billion) is the share of transnational investors, which includes Ethiopian diaspora community members. In countries where land is not a publicly owned property, it is not a surprise if an investor uses his/her land as collateral in order to get bank loans (Fenske, 2011; Fostel & Geanakoplos, 2016). However, in the context of Ethiopia, the case is unique. Any commercial agricultural investor in Ethiopia can get a loan from the state's bank using leased land as collateral, while land, per se, is legally a joint property of the people, which shall not be subject to sale or any other means of exchange. Unlike commercial farmers (i.e., investors), the Rural Land Use Proclamation does not state that small scale farmers have the right to use their land holdings as collateral, even though smallholder farming is the major contributor to the growth of the agricultural sector (World Bank, 2015a).

In March 2016, the DBE suspended agricultural loans after it was tricked by two companies and ended up giving them two loans for the same agriculture project; the Bank continued this investigation. According to key informants, there are many cases in which investors illicitly shift 'their' capital (including the loans they took from banks) from agriculture to more lucrative urban-based businesses, most commonly real estate in the name of a family member or relative. They also stressed the prevalence of well-established chains of corruption in the investment, land lease and loan supply systems. Ultimately, the country, local people, and the government of Ethiopia are the ones that lose the most from the large scale transnational land deals; which have been made in the country even though there are few encouraging cases that needed to increase in size. Recently, in March 2016, the government woke up and suspended the supply of commercial lands for an undisclosed period, and started to evaluate the whole programme of supplying large-scale commercial farmland.

There were critics of the World Bank that argued that the Bank backed countries that supplied large scale land to transnational investors, an action that threatened local inhabitants, especially small-scale farmers (World Bank *et al.*, 2010). On the other hand, the Bank urges host country governments to demand that investors increase the productivity of their farms and to improve peoples' livelihoods. Later the World Bank, together with other institutions, provided guidelines, i.e., the seven 'principles for responsible agricultural investment', which the Bank argued would help to correct the deficiencies in global land transactions. However, the World Bank did not address the fundamental questions, such as, who had what power and the most interest in the deals? (Dereje *et al.*, 2015). Furthermore, it failed to address the economic, social, political, and environmental contexts, drivers and consequences of the land deals (Borras *et al.*, 2011).

4.3.7.1 Lessor - Lessee dispute: Notes on Karuturi Global Ltd

Attracted by low land rental prices and investment incentives offered by the Government of Ethiopia, transnational companies acquired land for commercial farming. However, they did so without adequate multinational investment risk analysis and without adequate experience in the large scale commercial agricultural sector. A typical example is the Global Ltd. incorporated in 1994, was when in 2008 the company became the world's biggest producer of cut roses in the international market; with floriculture operations in India, Kenya, and Ethiopia. In addition to the attractive land lease prices, tax laws, and other business incentives the company invested in Ethiopia. In terms of incentives, for example, when rose growers in Africa export to Europe, they have a better cost advantage (compared to those in India) and benefit from a favorable taxation structure, which ultimately lowers the market cost on average by 25%. Furthermore, the company's management was passionate about diversifying its business and investing beyond the floriculture sector. It had a particular interest in the production of its own brand food crops and palm oil, which are new additions to the company's business history.

In 2008, the company entered a lease agreement to annually produce a million tons of maize, rice and palm oil from 300,000 ha of land. The company obtained the land (located in Gambela regional state, Nuer Zone, Jikao and Itang special districts) and the lease certificate with a serial number EIA-IP 14584/07. The large swatches of land which the

company acquired were significantly covered with vegetation, ranging from dense forest to grassland. The company promised that its project would create 20,000 jobs and planned to contribute to the development of local infrastructure in the form of schools, hospitals, water, and day care centers. Albeit, all of these things were not stated formally in the contract, and thus up to the magnanimity of the company. According to the original land lease agreement which was agreed upon with the Gambela regional government, the company was not required to pay a rental fee for the first six years of the contract but after that it, they agreed to pay 15 Birr ($\approx \text{€ } 0.625$) $\text{ha}^{-1}\text{yr}^{-1}$. However, two years later, the federal government interfered, as the amount was deemed excessive and beyond Karuturi's capacity to develop, thus 200,000 ha was returned to the regional state (and later became part of the federal land bank). By repealing the former agreement that was made between Karuturi and the Gambela regional government, in October 2010, the Ethiopian Ministry of Agriculture (a federal institution) was able to sign a new agreement with the company upon 100,000 ha with annual leasing fee of 20.00 Ethiopian Birr ($\approx \text{€ } 0.83$) ha^{-1} for 50 years, with possibility of renewal. The location of the 100,000 ha of land was broken up into two districts: 42,088 ha in Itang district, and 57,912 ha in Jikao district. Many argued that the Ministry's agreement with Karuturi was concluded without adequate preparation from both parties, and without an adequate feasibility study, environmental impact assessment, and without public transparency.

There are many reasons for Karuturi's low performance. First, the company had to deal with a lack of experience in industrial farming, let alone in large-scale agriculture; the company also had no prior experience with the production of food crops, despite the fact that it was successful with floriculture investments. Initially, it procured a large number of low-cost farm machinery from suppliers in India. Later, after spending millions, the company realized that Indian farm machinery was not suitable for operating large-scale farms, but were made to suite small family farms. Next, it approached well-known heavy duty machine and large tractor suppliers such as John Deere in the USA, resulting unintended costs for the company. Although renting machinery is a legally restricted duty for domestic investors in Ethiopia, the government of Ethiopia allowed the company to rent out its extra farm machinery in order to cover some of its unintended costs. Second, another challenge was finding skilled labor from the available local workforce, which required the company to waste their time and budget on training employees.

Furthermore, many of its employees who were assigned as farm managers lacked large scale or industrial farming experience, which, again, lead to increased costs, lost revenues, and incorrect decisions. Consequently, the company attempted to hire experienced consultants in industrial agriculture. Third, the remote location of the farmland was a challenge to the enterprise. The farm is located closer to the Ethio-South Sudanese border, which, comparably, requires better security service, including military protection. Not to mention that the area also has limited infrastructure. Fourth, since the location of the farm land is along the perennial Ethiopian Baro river banks, the company was forced to construct 100 km dyke in order to mitigate flood risk. Although the company's management was fascinated by the promise of potential irrigation, its construction consumed a significant amount of the time and budget of the enterprise. Some of the interviewees tried to justify the low cost of the land as compensation for the risks that are inherent to the investment.

Fifth, for years the company's management has already been marred in controversy with rental machine renting enterprises that pursue Karuturi in order to settle its payments. Thus, the company's management did not duly attend to its large-scale farming operations. While running the investment, the company borrowed a total of 170 million Birr (\approx € 7.08 million) from different banks in Ethiopia, of which 60 million Birr (\approx € 7.08 million) is from the Development Bank of Ethiopia (DBE). It borrowed the stated amount by providing the property collaterals of the 100,000 ha of farmland as the country's policy allows: Art 8(4) of Proclamation 456/2005 (GoE, 2005). The company was in extended dispute with the Commercial Bank of Ethiopia (CBE), following CBE's request to foreclose the business and to settle the 55.8 million Birr (\approx € 2.33 million) loan that Karuturi received yet was unable to pay pack on time. Money lenders (banks in Ethiopia) very nearly compete with each other over the company's properties in order to have the loan they provided to Karuturi paid off. However, through the company's appeals to the court and the prime minister of the country, and later through a court order, foreclosure remained suspended.

According to company-based sources, the management of the company did not recognize the cancellation of the contract. Due to this, even though the investment is terminated, it should be made according to the transnational bilateral investment treaty, which was signed between Ethiopia and India in 2007. In this agreement, investment termination and

expropriation should be accompanied by market-value compensation. Although the Ministry of Agriculture complained that the company developed only 1200 ha, the company argued that it has already cleared 65,000 ha of forested land and built a 100 km dyke. The company blames the government of Ethiopia for not providing the ultimate concession strategy, as it blocked financing through a cereal-export ban. Furthermore, according to company sources, in 2014 the government prevented diesel from reaching the farm in Gambela for national security reasons, as the area is located closer to the war-torn South Sudan. Further sources added that the reputation of the company was diminished in 2011 when its management attempted to (re)outsource 20,000-40,000 ha of the farmland it leased from Ethiopia to Indian farmers on a stock market share basis and in a revenue-sharing scheme; in short, to illegally re-outsource the outsourced land. In addition, the company's poor decision to clear massive amounts of forest land using fire and to engage in the illicit, but sporadic act, of selling wood (timber), diminished the country's goodwill toward the company. Both parties, which signed an agreement over the 100,000 ha, lose in this situation, which is also an ideal example of the loss-loss agricultural outsourcing (red deals) which was initially explained in Azadi *et al.* (2013) and Vandergeten *et al.* (2016).

Karuturi is not the only company which stacked while implementing land lease contracts in Ethiopia. Other businesses that occupied about 65% of the total leased land, almost find themselves in a similar status and most of those situations resemble Karuturi's. For example, (i) Saudi Star Agricultural Development Plc, developed only 350 ha of 10,000. (ii) Shapoorji Pallonji (S&P) Co.Ltd, a Mumbai-based company, agreed to establish 50,000 ha of land for biofuel in the Benishangul-Gumuz region, yet it only developed 2500 ha and most of that is not covered by crops that are included in its contract. (iii) Ruchi Agri Plc, another Indian based company, obtained 25,000 ha in Gambela, but it only developed 1,000 ha (only 4%). (iv) BHO Bioproducts PLC leased 27,000 ha of land in Gambela region near Baro river and borrowed 89 million Birr (\approx € 3.71) from Ethiopian banks but has not made any significant progress.

The Pakistani Al Habesh Overseas Engineering and Trading company was provided 70,000 ha of land in the Arjo-Dedesa area in the East Wollega Zone of the Oromia Region in order to produce sugar. The investment started with 28,000ha and a loan of 800 million Birr (\approx € 54.12 million) from the Commercial Bank of Ethiopia. Later, due to unmet contractual obligations by the company and failure in investment management, the

Ethiopian State-owned Sugar Development Corporation (SDC) has taken over Al Habesh's sugar refinery, which was the largest private sugar factory in Ethiopia owned by a Pakistani. According to an official government report (EAILAA, 2015), commercial farmland investment has progressed by 30% overall. On the other hand, the comparison between domestic growers and transnational investors has not been given much attention.

In a case about investors' performance in 2010, the National Council of Ministers established the Textile Industry Development Institute (TIDI) of Ethiopia in order to facilitate the development and competitiveness of textile industries in the country (Council of Ministers, 2010), emphasizing the production of cotton farming. According to state media, FBC (2016), in the three year period of 2013-2015, more than 100,000 ha of land was leased to commercial farmers (mainly in Benishangul and Gambela regions). For the stated time, a financial loan of 4.2 billion Birr (\approx € 175 million) was arranged for investors who would invest in the sector, and 3 billion Birr (\approx € 125 million) was lent to investors. However, most of the loan was not used for the intended cotton production, and TIDI has established a team in order to investigate the case.

4.3.7.2 Some encouraging cases

There are few well-appreciated companies which have better performance levels. The africaJUICE Tibila Share Company is one of them. With a rising global demand for tropical fruit juices, in 2009 the Netherlands-based company took 1200 ha of land and operational control of the Tibila Farm in the Upper Awash Valley of Ethiopia and started producing tropical fruits. In addition to farming operations, it has built a new fruit-plant with modern fruit processing, packaging, and sterilization equipment. The company exports processed juice to markets in Europe and the Middle East. As of February 2015, the company has permanently employed 2400 people and it is mentioned as one of the success stories among stakeholders in Ethiopia. Similar interesting accomplishments are reported from companies such as Horizon Plantations PLC and Ethio Agri-CEFT PLC, both of which are owned by a Saudi Arabian investor with Ethiopian origin. Horizon Plantations PLC, for instance, is performing well over its 49,692 ha of coffee and tea farms which are located in Bebek, Gojeb, Limu and upper Awash areas.

4.4 Conclusion

This study has dealt with the features of large-scale transnational land transactions (LSTLDs) in the South, and its consequence in the context of Ethiopia. Our findings challenge the conventional presumption that LSTLDs are predominantly driven by global forces (push factors) and by actors such as multinational corporations and governments from the developed world, since states from the developing South are less receptive to liberal investment policies (Rulli *et al.*, 2013). In order to meet national development objectives (pull factors), the government of Ethiopia promoted the availability of more than 11.5 million ha of land and was able to attract many transnational investors.

In the period of 2005 - 2015, it commercialized nearly 2.47 million ha. We found a significant variation among transnational investors regarding the land size they hold, at $F_{(2,335)} = 56.22$, $p < 0.0001$): foreign companies (mean = 17,018 ha, SE = 2,293), joint-ventures (mean= 5,143, SE = 1, 368), and diaspora (mean = 1,062, SE= 129). The government leased large swatches of land without conducting land valuation, feasibility studies, cost-benefit analysis, environmental impact assessment, and without adequately scrutinizing investors. Consequently, there is low investment performance progress and many of the investors engage in speculation in the sector by using available policy loopholes. The current land rental prices are between € 1.40 and 37.00 ha⁻¹yr⁻¹ for a lease period of 25-50 years. The lease agreements did not consider both the time value of money and appreciative value of land, which are important variables in investment decisions.

The findings substantiate the dynamics in the usual North-South investment capital flow and the rise of South-South investment deals (Margulis *et al.* , 2013). However, with the context of moving capital, speculation drove non-performing loans and resulted in companies engaging in financial grabbing. Applying Ethiopia's policy of using agricultural land lease holding as collateral for investors (but not for small-scale farmers), banks in the country lend billions, which has resulted in an outstanding loan of 18.6 billion Eth Birr (\approx € 791 million). Most likely, land deal-'land-grabbing' is a result of financial-grabbing, where Ethiopia banks end up with a huge sum of non-performing loans and then must hustle and chase 'investors' in the South in order to settle loans. So far, less than one-third of the LSTDs are operational, and the whole commercial sector has only contributed in

raising the agricultural production of the country by 6%. Employment generation so far, has been minimal, both due to the meager implementation of projects and the seasonal nature of agricultural jobs. Had it been managed well, it could have significantly contributed to the national economy.

The large-scale farming was not new to the country and dates back to the 1930's and 40's (Joyce, 1943), and to the 1970's-1980's (Alemayehu, 1992; Hurni, 1983), there were a substantial number of commercial farmlands run by enterprises and by the state in Ethiopia. It is now time for the government of Ethiopia to go back to the drawing board when it comes to administering land by the existing interests of the public and the alternative uses of land, and to reconsider its land lease policies and legislative framework. The policy of allowing investors to use their leased landholdings as collateral for obtaining loans from the capital scarce growing nation has no legitimacy, and is contrary to the essence of investment and expectations of an investor. Furthermore, small-scale farmers, who feed the state, should be provided equivalent support. After supporting investors and with all due patience, the Government of Ethiopia is trying to repeal the land lease contracts. According to signed contracts, the land lease agreements were administered by the laws of Ethiopia and the conditions of force majeure is governed by the Ethiopian Civil Code. However, transnational investors insist that terminating the contracts is carried out in line with the multinational bilateral investment treaties signed between the governments of the host country (Ethiopia) and their country of origin.

The case we noted on our discussion, for instance, can be worth mentioned here. While the government of Ethiopia announced the termination of a 100,000 ha farmland lease agreement with an India-based company (alleging insignificant progress in developing the land), the company announced to seek international arbitration on the issue. However, according to the global database for investment treaties, the investment agreements made so far between Ethiopia and India is not 'in force' (United Nations, 2016). On the other side, the pressure from transnational agricultural investments upon national economies, contracting parties, local communities, land and natural resources becomes visible. Hence, it is time for governments and advocators to work towards the formulation of effective legal frameworks to ensure the positive contribution of transnational agricultural and related investments to sustainable development. To this end, the work by Cotula (2016) is a valuable input on how to use law so that foreign investment can have a viable contribution

to sustainable development. Furthermore, political-economic institutions are trying to envisage transnational land deals from different dimensions. For instance, analyzing on the involvement of EU-based corporate and financial entities in transnational land transactions, Think tanks at European Parliament offered a series of recommendations on how to deal with emerging issues of land acquisitions outside the European Union (Borras *et al.*, 2016).

Further studies that focus on projects and local levels could produce interesting findings. Such as, How to deal with non-performing land deals? How to reconcile global land deals with the transnational bilateral investment treaties of states in order to enhance socially desirable outcomes? Lease prices should reflect the prominent land market value, which is a function of the capitalization rate, rental, land taxes (Gwartney, 2014) and other pertinent factors. So, what should the prices of (Ethiopian) farmlands be? The geographic information system (GIS) and business intelligence tools, such as the On-Line Analytical Processing (OLAP) tool, role is paramount in order to more accurately value developable land (Weber, 2001). Diversification of investment with alternative uses of land, should also be given its due level of attention. Finally, we have investigated a part of the big picture (Figure 4.2); i.e., large-scale transnational land deals (LSTLDs), which implies that both the domestic land deals or deals of any type but with less than 200 ha is still an interesting area of future study.

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Chapter 5 Transnational land acquisition in Ethiopia: Lessons from the Benishangul-Gumuz region

Adapted from Dereje, T., Azadi, H., Nyssen, J., Mitiku, H., Witlox, F. (2016). *How sustainable is transnational farmland acquisition in Ethiopia? Lessons learned from the Benishangul Gumuz Region. Sustainability* 2016, 8, 213. Copyright © by the authors; licensee MDPI, Basel, Switzerland.

Abstract Due to the nature of available land as one of the main attractions for investment, land lease marketing in Sub-Saharan Africa is appearing on policy agenda. This chapter describes critical land-related institutional and governmental frameworks that have shaped the contemporary land governance and land lease contracts in Ethiopia. It also examines the effectiveness of the land lease process regarding economic, social, and environmental expectations from agricultural outsourcing. Both qualitative and quantitative data analyses were used and results showed that the size of the land cultivated by investors is significantly lower than the agreed-upon size in the contract. Besides, the supply of land to large-scale commercial investors in Ethiopia is made without adequate land use planning, land valuation, and risk analysis. Furthermore, limitations in monitoring systems have contributed to meager socio-economic gains but a risk of deforestation and woodland degradation. Accordingly, the study concludes that supplying vast tracts of farmland to large-scale agricultural investors requires integrated land use planning, land valuation and governance, monitoring systems, and a capacity to implement the various social and environmental laws in coordination with other sectors. Improving rural infrastructure, particularly road, is also indispensable to enhance the level of performance of commercial farms. Last but most importantly, the customary land holding rights of residents should be respected and institutionally recognized.

5.1 Introduction

Literature about transnational land acquisition, predominantly called ‘land grabbing’ and land deal, is full of debates, discontents, justifications, and emotions among academia, practitioners, policy makers, and institutions. Most of the recent literature underlined the term ‘land grabbing’ as a contemporary phenomenon which was elicited due to the combined effects of global stock market crash and food and energy crisis of 2008/2009 (Cotula *et al.*, 2009, White *et al.*, 2012; Mehta *et al.*, 2012; Franco *et al.*, 2013; Margulis and Porter, 2013; Wolford *et al.*, 2013). However, the term ‘land grabbing’ was also mentioned in the earlier works by Karl Marx who mentioned ‘land grabbing’ for the first time in the context of the enclosures of England: *‘The laborers are first driven from the land, and then come the sheep. Land grabbing on a great scale, such as was perpetrated in England, is the first step in creating a field for the establishment of agriculture on a great scale’* (Marx 1867:363). Following the global financial crisis, the rise in the demand for food and biofuel and the effects of climate change, however, have stemmed a new wave of land transactions in many developing countries (Zoomers 2010; De Schutter 2011).

Foreign companies and governments moved into those ‘land-abundant’ agrarian countries in Africa and Latin America so as to produce and export food and biofuel that is also facilitated by government officials and resulted in dispossession, expulsion, and adverse incorporation of local communities (Borras *et al.* 2012). For example, the South Korean Daewoo Logistics planned to invest on 1.3 million hectares of land to produce maize, but later its license was cancelled by the transitional government of Madagascar after a high debate in the country (Gerlach and Liu 2010). Furthermore, Hamelinck (2013) has shown that many other land deals which had aspired for the production of biofuel were under serious public pressure resulted in the cancellation of long-term land use agreements.

The governments of developing countries which host such investments on the other hand, would consider transnational land acquisition as part of their development strategy; an opportunity to attract foreign direct investment (FDI) in their agriculture sector and supply land to transnational investor companies and mainly rich government (Stebek 2011; Hall 2011; Lavers 2012; EIA 2013; Demeke *et al.* 2014). In addition to the upkeep of transnational land deal by governments, international development institutions facilitate the

acquisition of land by big corporations (both foreign and domestic) typically in the form of leases or concessions rather than outright land purchase-for development (White *et al.*, 2012).

5.2 Ethiopia: Attractive for FDI

Ethiopia is one of the leading countries in attracting agricultural foreign direct investment (FDI). The country is endowed with abundant agricultural resource bases. The country's tropical location coupled with its diverse topography and varied altitude of 148 meters below sea level to 4,620 meters above sea level. These two factors enable Ethiopia to have 18 major and 49 sub agro-ecological zones, many of them with their own potential for agriculture and biological diversity (EIA, 2012).

Like that of other developing countries' governments, the anticipation of the government of Ethiopia is that investors bring capital, know-how, technology, and market-access. Investors could therefore be a catalyst for economic transformation in rural areas where the Growth and Transformation Plan (GTP) of the country is central. This, in turn, is expected to generate employment, increase public revenue, improve local people's access to infrastructure and overall improvement in the standard of living of the local communities. The country's Ministry of Agriculture and investment agency announced that more than 11.50 hectare of land is on offer for agricultural investment (EIA, 2012, 2013). From the stated amount of land, so far close to 2.5 million hectare of land has been given for investors who came from more than about 32 different countries and investing in the different regions of the nation between 2007-2013. However, comprehensive evidence is lacking regarding the national, regional, and grass root level issues and effects of transnational land acquisition in Ethiopia as for the focus of this chapter

Since 1991, Ethiopia has formed a federal government structure which allows substantial autonomy to the nine regional states and two city administrations. The regional states are vested with decentralized decision-making power in economic, political and social domains. The country's economy and the livelihood of its more than 91 million citizens (World Bank, 2013a) significantly relies on its natural resources, predominantly on land and water for small scale peasant agriculture. Agriculture contributed to 44% of the

country's GDP (MoFED 2013), 85% of employment and 90% of foreign earnings in 2011-12 (EIA 2013). Governance of land and other natural resources in the country is shared between the federal and regional governments. In terms of development policy, the government formulated successive poverty reduction strategies, called Plan for Accelerated and Sustained Development to End Poverty (PASDEP). The accelerated economic growth strategy was guided with two policy directions: the commercialization of agriculture, and accelerating the development of private sector (MoFED 2006; also quoted in Desalegn 2011). The government's pro-poor policy premise of Agricultural Development Leads to Industrialization (ADLI) intended to create a labor intensive agricultural sector was considered as an engine for rural transformation and overall economic growth (MoFED 2003; 2006).

Between 2002-2010, the government of Ethiopia issued two Poverty Reduction Strategy Papers (PRSP). The first one was 'Sustainable Development and Poverty Reduction Program' (SDPRP) which gave due emphasis on small-holder farmers for alleviating poverty and it covered the first PRSP period of 2002-2005. The second one was the 'Plan for Accelerated and Sustainable Development to End Poverty' (PASDEP) which focused on commercialization of the agricultural sector with a significant participation and contribution from the private investment sector (MoFED 2006). However, the outcomes of the two successive plans in transforming the agricultural sector and rural economy was below the national expectation (MoFED 2013). As designated in MoFED (2010), based on the lessons drawn from PASDEP, the government of Ethiopia again launched a comprehensive Growth and Transformation Plan (GTP). Ethiopia's GTP is a three five-year successive plan (2010-2015, 2016-2020, and 2021-2025) which aspires the nation to be a climate-resilient middle income economy by 2025. During the first five years, the GTP has been supposed to improve Ethiopia's economy through achieving the minimum projected annual GTP growth rate of 11% (MoFED 2010) where agriculture is underlined as the major source of economic growth.

In order to promote and reinforce the agricultural transformation process of the country, the Federal Government of Ethiopia (GOE) established the Agricultural Transformation Agency (ATA) through a regulation approved by the Council Ministers (GOE 2010a). The agency is mandated to address periodic constraints of the agricultural sector and support the Ministry of Agriculture (MoA), other public institutions, private and other

implementing partners. Passing through all the aforementioned state-lead development plan implementation, overall the country has succeeded to become one of the world's fastest growing economies. As indicated in recent national development reports of MoFED (2013) and the World Bank (2014), Ethiopia is successful in achieving double digits growth for the first decade of the 21st century. While it is important in a poor country to have such a fast rising economy, ensuring a fair distribution benefit of such economic growth to people, particularly to the poorest ones of the society is very crucial.

As part of the national economic growth strategies, the government of Ethiopia has offered about 11.5 million ha of land for private investment (EIA 2013). According to 'databases' of the Ministry of Agriculture, 2.11 million ha of land is already delivered to investors out of which 600,254 ha is the share of the Western Ethiopian lowland region called Benishangul Gumuz (MoA 2013). Focusing on this region, the following key research questions are considered in this study: (i) What are the key institutional frameworks which shaped the contemporary land governance in Ethiopia? (ii) To what extent and with what lease price land is supplied to investors in the Benishangul Gumuz region? (iii) What are the rights and obligations of the signatories in long-term land lease contracts? and (iv) How effective is the land lease process from the perspective of integrated land management considering economic, social and environmental aspects?

Accordingly, the chapter is structured as follows. The introduction part describes key issues about the contemporary transnational land acquisition and the efforts of the Ethiopian government in attracting agricultural foreign direct investment as a strategy to speedup economic growth. The second part of the chapter elucidates the integrated land management framework which is the conceptual framework of the study. The third section constitutes brief explanation about the study area and the methods used to come up with the results. The fourth section deals with results and discussion followed by the conclusion at the end

5.3 Conceptual framework: Integrated land use management

Land marketing in Sub-Saharan Africa (SSA) is on the policy agenda. Many of SSA countries have passed through consecutive land use institutional reforms which were mostly made by the support of the World Bank and developed countries (Holden *et al.* 2008). While national land use policies and strategies vary across countries, common land related problems, conservation strategies and expertise solutions are becoming apparent and provide timely lessons for Ethiopia. Land management systems are increasingly checked against information-based land use models that contribute to efficient and effective land use management. Globalization and technology development further enhance the establishment of multifunctional information systems through incorporating diverse land features, uses, rights, regulations, and other pertinent data (Enemark *et al.* 2005). To this end, contemporary land management systems should consider the diverse interests and competitive purposes of land before it is marketed to commercial investment on long-term basis (Enemark *et al.* 2014). A holistic approach to land management includes information as part of the key requirement for land management, recognition of the human, social and governance elements, as well as adaptation of improved land use practices elsewhere and plays a central role for enhancing informed land marketing chains.

There are a number of tools which are helpful to conduct sustainable impact assessment of development projects (Payraudeau and van der Werf 2005; Ness *et al.* 2007; Gasparatos and Scolobig 2012). We adapt the Integrated Land Use Management and Responsible Agricultural Investment framework because according to Enemark *et al.* (2005) and FAO *et al.* (2010), institutional arrangements, land information system, and land use management are more appropriate to see the informative level of land markets. Furthermore, it is important to consider multiple land use sectors, multiple dimensions of sustainability, and at multiple scales and hence integrated federal and regional issues (Reidsma *et al.* 2011). The interplay between institutional arrangements and land information system determines the quality of land use management which again determines the effectiveness and efficiency of land markets (Enemark *et al.* 2005, and FAO *et al.* 2010) (Figure 5.1).

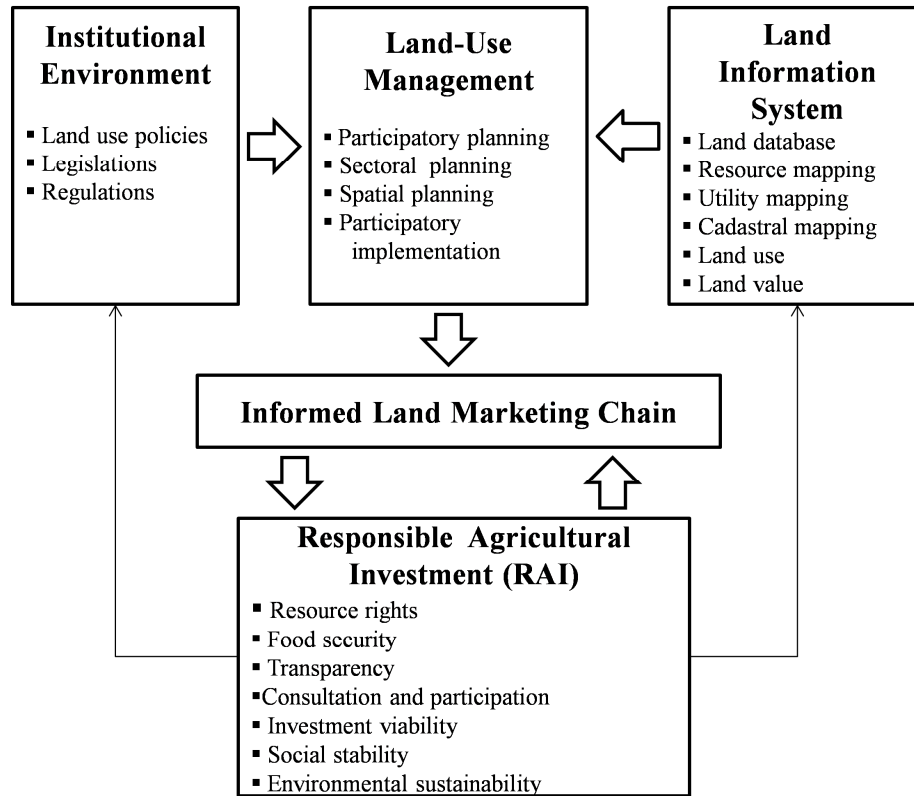


Figure 5.1 Integrated Land Use Management (ILUM). Adapted from Enemark *et al.* (2014)

In an integrated land use management system, different land use interests are balanced against the broader developmental objectives of a country or region. It serves as a base for planning and control of land use through institutional mechanisms and incentives. As described by Reidsma *et al.* (2011) and Enemark *et al.* (2014), effective land use planning and control requires up-to-date land use data that help understanding the spatial, temporal, and anthropogenic consequences of land use policies and decisions. To this end, in addition to integrating the sectoral and spatial components, the process of land use planning and implementation should be participatory. Furthermore, administration of land for agricultural investment should be inclusive (Dereje *et al.* 2015) and designed to meet not only the interests of investors but also the needs of various stakeholders, particularly, local communities and their livelihood attachment to land and environmental sustainability as other key issues. A responsible agricultural investment is a situation where the process of investment respects resources use rights of local communities, ensures local food

security, transparency, consultation and participation, investment viability, and environmental sustainability (FAO *et al.* 2010).

5.4 Study area and methodology

As one of the regional states of Ethiopia, the Benishangul Gumuz region was officially established in 1995 (GOE 1995). It is located in 09.17° to 12.06° N latitudes, and 34.10° to 37.04°E longitudes along the Western Ethio-Sudan border (Figure 5.2). The total area of the region is about 50,699 km². According to the Regional Bureau of Agriculture, the overall area of arable land in the region is about 911,877 ha from which less than half has been cultivated. It was briefed that 189, 534 hectares of land in the region is potentially irrigable (GBGR 2012). The region is located in an area where the Grand Renaissance Dam of Ethiopia is under construction over the Abay river. The area includes *Beles, Dabus, Anger, Dhidhsa, and Dindir* rivers which are tributaries of the river.

Topographically, the region ranges between 580 and 2,731 meters above the sea level. Agro-ecologically, the region can be classified into three major climatic zones: (a) *Lowland* or *kolla* (75% of the region) with an altitude below 1500 m. (b) *Midland* (*woyna dega*) zone which constitutes about 24% of the region and has an altitude of 1,500- 2,500 m. (c) *Dega agro-ecologic zone* which accounts for only 1 % of the area of the region and lies with an altitude of 2,500 m (GBGR 2007).

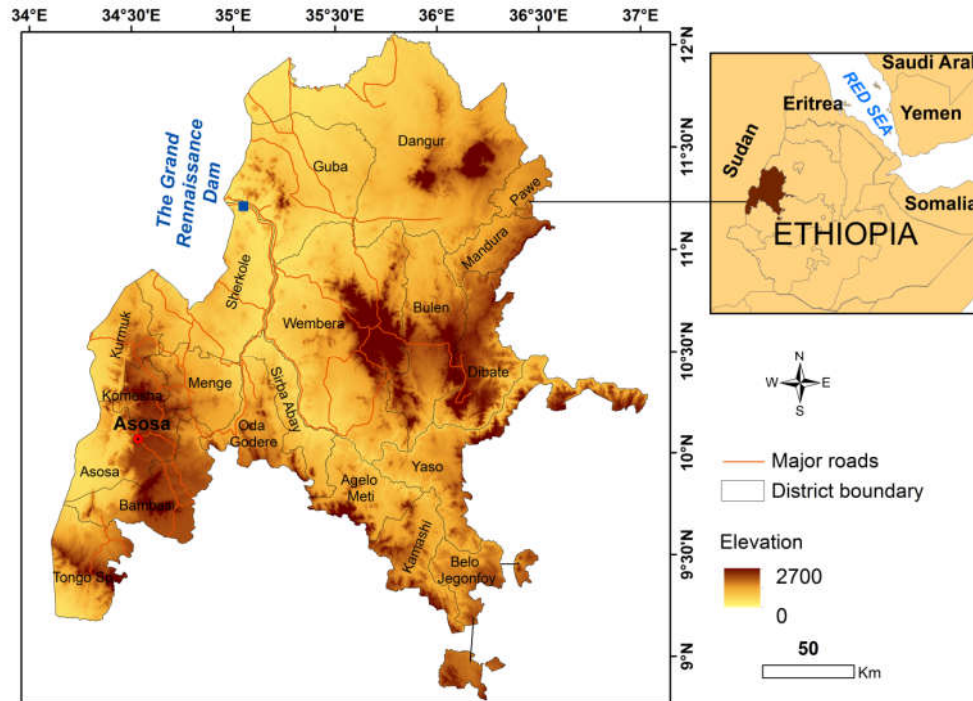


Figure 5.2 Map of the study area (Benishangul Gumuz region)

The land use management and agricultural investment legal-institutional system in Ethiopia is fragmented across different levels of governance, federal ministries, regional bureaus and district organs, throughout the country. To analyze the commercial farmland acquisition process and its effects, multilevel exploration of qualitative and quantitative data is required. Accordingly, the study collected data at federal, regional, district, and village or farm levels (Table 5.1). Rigorous archival review, review of land lease contracts and accompanied documents, extraction of relevant data from accessed databases, and interviews were conducted. Participatory field observation and key informant interviews were also held at federal, regional, and local levels. The quality of the different data sources was verified through available official documents and experts at the respective offices and bureaus.

Table 5.1 Data sources and methods of data collection

Level	Data source ¹	Focus	Method used
Federal	GOE, MOA, EIA (Addis Ababa)	Land laws, regulations, land/investment data	Document review, contract review, extraction of relevant data from accessed databases, and interviews
Regional	GBGR, investment bureau, BoARD (Asosa)	Regional land laws, regulations, and land lease system	Document review, key informant interviews, surveys
District	BoARD, and Natural Resource Protection Case Team (Dangure and Guba)	Practices of delivering land to investors, resettling communities	Key informant interviews, data extraction from regional databases
Village/ farm	Community leaders, investors, and employees	Effects on local communities, environment, concerns from community, investors, and employees	Key informant interviews, data extraction from regional databases, participatory observation

¹ GOE = Federal Government of Ethiopia; EIA = Ethiopian Investment Agency; GBGR=Government of Benishangul Gumuz Region; MOA= Ministry of Agriculture; BoARD = Bureau of Agriculture and Rural Development

A total of 26 interviews were made (4 in federal level institutions, 6 in regional bureaus, 7 at district, and 9 at village levels) in the period from October 2013 to January 2014. Besides, 22 owners and/or managers of commercial farms in the study site were interviewed. A survey of 89 commercial farms were made in the period May 2013 – January 2014 so as to assess the performance of commercial farmers on the ground.

Analysis of the legal, regulatory and institutional contexts which are important land governance foundations in Ethiopia in general and the Benishangul Gumuz region in particular are explained chronologically. The rights and obligations of land lease contractual parties in the contract (the lessee and the lessor) were analyzed considering integrated land use management (ILUM) (Smith *et al.* 2000; Enemark *et al.* 2005; FAO *et al.* 2010). Descriptive statistics and relevant statistical tests such as paired sample t-test are made as a complement for the qualitative data analysis and explain the economic, social, and environmental implications of the ongoing commercial land acquisition in the study area. STATA (version 11) software was used to conduct statistical computations. A paired sample t-test (with a significant level of $\alpha = 0.05$) was run to compare the amount of land taken in the form of lease and the amount of land developed. Furthermore, with a significance level of $\alpha = 0.05$, paired t-test was made for the amount of land size leased by an investor versus the size of land cultivated, and regression analysis on the amount of land

developed and employment generated so as to see whether significant amount of land was developed and the expected level of employment opportunity was achieved.

5.5 Results and Discussion

5.5.1 Institutional framework of land governance in Ethiopia

According to the Constitution of the Federal Democratic Republic of Ethiopia (GOE 1997). The right for land ownership and other natural resources of the country are exclusively granted to the State and the peoples of Ethiopia. This implies that, all subsidiary laws and regulations of the country which could be issued either by the Federal or Regional State bodies recognize usufruct rights to land which can be in the form of state, communal or group, and private holdings. Private ownership of land is prohibited although the right to use and inherit land is possible. Private ownership of land is prohibited to ensure equity of land use among citizens and between generations, especially in the rural areas where livelihood exclusively depends on land; if not, the country would be threatened by the social predicaments of land accumulation within few hands (GOE 2005b). If land is allocated and accumulated within few hands, it will result in majority landless citizens.

It is up to the federal government to instruct the amount and type of land a citizen may hold in the country. The major justification given for this is that if land is privatized, small-holder farmers may sell it when they face financial difficulties (desperation sales) and ultimately the country's land would be under the hands of a few rich farmers. The concentration of land in a few hands and inequality in land ownership adversely affects human capital promoting institutions, for instance public schooling (Galor *et al.* 2009). Such concentrations have already happened in some Latin American countries such as Colombia (Cárdenas 2012). Inequitable allocation of land contributed to land related conflicts and unrest in a country, for instance the case of Brazil (Pestana *et al.* 2013).

Prohibition of private ownership of land, on the other hand, may not be an adequate warranty for equitable distribution of land among citizens. The policy which prohibits private ownership of land has been criticized because it stifles farmland investments and could lead to unproductive and excessively small parcel of land size (Samuel 2006; Crewett *et al* 2008). According to Nyssen (1998), land tenure system in Ethiopia has positive contribution to the unprecedented involvement of farmers in soil and water conservation because land is ‘equally’ shared among farmers unlike previous land holding systems. Some studies (Borras *et al.*, 2012; McMichael, 2013; Wolford *et al.* 2013) showed that governments play important role in the contemporary ramifications of the political economy of a global capitalist system where land acquisition is considered as part of the ‘security mercantilism’ in international relations. Consolidating all the land in Ethiopia under the custody of the state on the other hand, is considered as suppressing citizens’ rights to have private land ownership which is one of the continuing debates in Ethiopia. The federal government, through the constitution and other laws that followed later, assigned mandates and jurisdiction to the different federal and regional government organs as summarized chronologically in Appendix 1.

The current land use and land governance institutional framework of Ethiopia is the result of a number of consecutive institutional and regulatory evolutions. According to the 1955 constitution of Ethiopia, all natural resources of the country (water, forest, land, etc) became state domain since 1955 (IGE 1955). Later in 1974, ownership for land became one of the major causes for the socialist driven revolution in the country which overthrew the imperial/feudal system in the country. ‘Land to the tiller’ was one of the mottos of the revolution. As a result of the 1974 socialist revolution in Ethiopia, all forms of private ownership of land were abolished without any compensation, and all lands used for agriculture or grazing purposes throughout the country declared to be the collective property of Ethiopians (GOE 1975a,b). Due to the functioning supreme law of Ethiopia (i.e., the 1995 constitution of the country), land and all other natural resources are commonly owned by the Nations, Nationalities and Peoples of Ethiopia and it is not subject to sale or to other means of exchange. Regional states are given the power and mandate to administer land and other natural resources in accordance with federal laws. Peasants and pastoralists have usufruct right over land without any charge and without time limit including the safeguard against expulsion from ‘their’ land unless it is intended for public purposes which is subject to compensation (GOE 1995; 1997).

In addition to the chronologically stated proclamations and regulations, under the tenets of the 2005's Federal Rural Land Administration and Land Use Proclamation (Federal proclamation no.456/2005), non-pastoralist regions of Ethiopia have enacted their regional rural land administration laws, regulations and guidelines. The first two regions in this case are Tigray (regional proclamation no.97/2006, and land use regulation no.37/2007), and Amhara (regional proclamation no.133/2006, and land use regulation no.51/2007). Likewise, the Southern Region's Rural Land Administration and Use Proclamation (regional proclamation no.97/2006), the Oromia Rural Land Administration and Use Proclamation (regional proclamation no. 130/2007). As explained by Tigistu (2011), the Gambela and Benishangul Gumuz regions enacted their land proclamation in 2010. The Benishangul Gumuz Regional State has a regional Rural investment Land Use Regulation, regulation no.29/2009. The remaining regions (Afar, Harari and Somali) lack legislation for administering their rural and clan based land use, hence it is currently difficult to enforce laws and formally recognize peasants' and pastoralists' rights in these regions.

5.5.2 Investment land supply and the land lease contracts

According to official investment guideline developed by the Ethiopian Investment Agency, as of 2012, a total of 11,545,902 ha of potential investment land was made available for investors in Ethiopia (Figure 5.3). We argue that the figure seems exaggerated though further assessment is required. Moreover, there is variation in stating figures among different authors, and such discrepancies of figures are common not only for Ethiopia but also for other host countries though the reasons for such discrepancy are poor land use planning and less informative investment land supply (Edelman *et al.* 2013; Scoones *et al.* 2013).

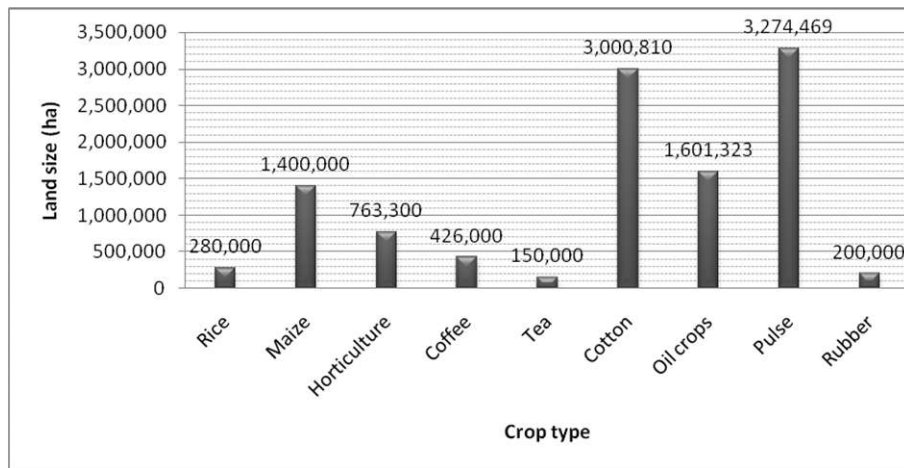


Figure 5.3 Potential areas of agricultural investment in Ethiopia (EIA 2013)

For instance, according to Deininger *et al.* (2011), since mid 2010, the total amount of land allocated to local and foreign investors is 1.2 million ha with a regional distribution of 535,000 ha (Gambela), 380,000 ha (Oromia), 191,500 ha (Benishangul-Gumuz), 60,500 ha (SNNP), 20,000 ha (Afar), and 18,000 ha (Amhara). However, according to recent information from Ministry of Agriculture (MoA 2013) (i.e., since October 2013), totally, there are about 238 foreign agricultural investment projects from about 32 origins/countries (including the Ethiopian diasporas) which took a total of 736,228 ha of land in the different regions of Ethiopia. Concerning the total amount of land delivered to investors (both foreign and domestic), the Benishangul Gumuz Region has taken the lead with 600,254 hectares of land delivered to investors followed by Oromiya and Gambella regional states with 458,292 and 399,491 ha respectively (Figure 5.4).

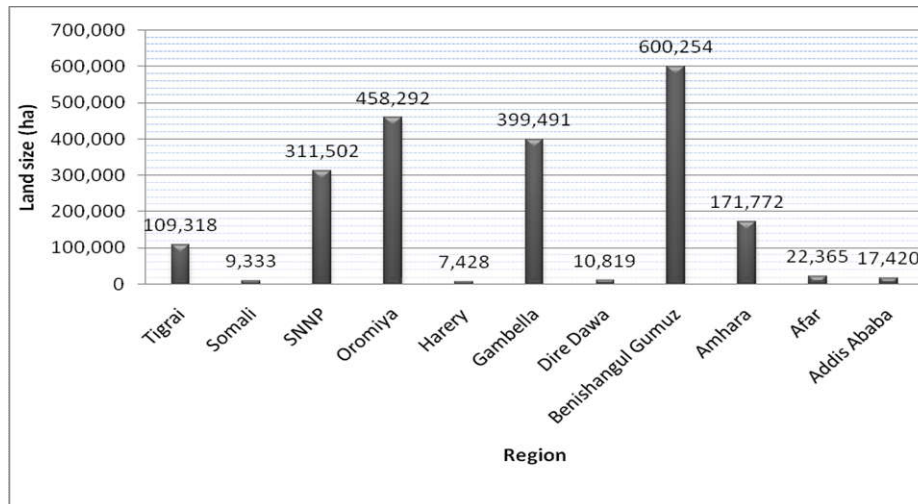


Figure 5.4 Land delivered to investors in different regions of Ethiopia (MoA 2013)

According to the revised land use directive which was developed in 2009 and became effective in 2011/2012, there was no maximum limit set on the amount of land that an investor could take. The maximum threshold of land that can be given to an investor is set based on the type of land development (Table 5.2), the capacity of the project (its capital and skilled man power), level of employment creation, and fertility level of the land.

‘Foreigners can buy as much British Columbia farmland as they want-and they are’(Farmland grab 2014:1) and similar arguments by many contributors in the field such as Oviedo (2011), GRAIN (2011), Lavers (2012), and Margulis and Porter (2013). However, the context in Ethiopia is different. There is a limit both in terms of land size and land lease period while land is leased for investors depending on the area of investment and other factors due to which foreigners cannot buy as much land as they want (Tables 5.2 and 5.3). *‘...The Ministry of Agriculture has given the responsibility of providing technical support for private investors investing in agriculture. The support ranges from providing land above 5000 ha...’* (EIA 2012:37). Lands of size 5000 ha and above and which are found in a single place will be administered by the Ministry of Agriculture, and lands below 5000 ha found in different places (or pockets lands) will be administered by an appropriate regional office (MoA 2009).

Table 5.2 Maximum threshold of land size for an investment project (MoA 2009)

Area of investment	Threshold (land in ha)	Area of Investment	Threshold (land in ha)
Biofuel	50,000	Food crop	20,000
Palm oil	50,000	Oil crop	20,000
Rubber tree	10,000	Vegetable production	150
Cotton	20,000	Fruit and enset production	5,000
Forestry	20,000	Livestock farming	30
Sugar cane	20,000	Animal fattening	5
Coffee plantation	5,000	Seed reproduction	5,000
Tea plantation	5,000	Wild animal production	50
Forage production	5,000	Tobacco production	5,000

The Benishangul Gumuz regional government has also set a maximum threshold of land for different areas of investment (Table 5.3). Although the regional government's proposition of delivering 200-500 ha of land to a single investor is ambitious, vague and imprudent, it did not indicate a land lease period limit for an investment land of 200 ha and less. Besides, some of the regulatory points could be contrary to what is stated by the Federal Government. Because the base for setting the threshold by the federal government is *land size* (i.e., no limit in terms of years of investment operation) while the threshold by the regional government is made in terms of land size and years. However, with specific reference to the horticulture sector, the land lease period further varies according to the type of land (i.e., either cultivated or non-cultivated). Moreover, the regional government limited the land lease holding period of 25 to 35 years (Table 5.3).

Table 5.3 Type of investment land and land lease duration

Type of investment land		Lease period/duration (years)	
		201-500 ha	Above 500 ha
Cultivated land	Rain fed	20-25	30-35
	Irrigation	20-30	30-35
Non-cultivated land	Rain fed	25-30	35-40
	Irrigation	20-25	30-35
Dairy production		20	25
Fast-growing perennial production		20	35
Horticulture		30	35
Livestock rearing and/or fattening		20	25

Source: Regional land use regulation (GBGR 2009)

Although the Benishangul Gumuz regional government set 20-35 years as the maximum limit of lease periods for investment lands in the region, there are companies in the same region with contracts of 50 years. These companies hold land on large-scale basis and the

contractual agreement was made not between the regional government and the company but with the Federal government and the company. The reasons for this is that regions have ‘delegated their authority upwards’ to the Federal Government (i.e, Ministry of Agriculture), for leasing adjoining farm land areas of above 5000 ha so as to expedite the development of large farm lands for export and industrial crops.

5.5.3 What is in the land lease contract?

Commercial land lease agreements in Ethiopia are generally bilateral. Meaning, land lease agreements are made between the investor termed in contracts as ‘lessee’ and the responsible government body, mainly the Ministry of Agriculture (MOA) called ‘lessor’. Followings describe the rights and obligations of each party.

5.5.3.1 Lessee

The lessee has vested with rights to develop land for the cultivation of crops and plantations as agreed with the lessor. The lessee can build relevant infrastructure and facilities which are helpful to enable its investment operations upon consultation and permit from concerned bodies. Moreover, the lessee can administer or develop the leased land by itself or through a legally delegated agency or person. There is full right to use mechanization or other methods that the lessee consider as proper. The right to get additional land is maintained for the lessee based on performance on the ground. Upon presentation of convincing reasons or for better options, by providing at least six months time to the lessor, the lessee can cancel the contract (Stebek 2011).

The lessee is obliged to make good care and conservation of the leased land and its natural resources with specific obligations to: (i) conserve trees which have not been cleared for land preparation, (ii) apply appropriate farming methods to avoid soil erosion, (iii) adhere to all laws and proclamations related to the conservation of natural resources, and (iv) conduct environmental impact assessment (EIA) followed by submission of the EIA report within three months (the EIA obligation was added to the contractual agreements recently and used for those land lease agreements made since 2010/2011 following the environmental damages by most of the land lease agreements made between 2007/2008 – 2009/2010), (v) submit an action plan in advance about the use of leased land together with

the contract agreement document to the Ministry of Agriculture at the time of agreement (although what is practically found is the contract agreement and no submitted action plan!), (vi) pay the agreed down payments, and (vii) start operation on the land within six months from the date of the execution of the land lease agreement. The lessee is expected to develop at least one-third of the land within one-year period, and develop all the land within three years from the date of the execution of the land lease agreement. For some companies this obligation is adjusted to ‘develop at least 10% of the leased plot of land within the first year period from the date of the execution of the land lease agreement, and should develop the whole leased land within five years period.’ Yet, no justifiable is found for having two different statements in this part.

Upon terminating the land lease contract or revocation of investment licenses, the lessee should clean the land from all his assets and hand it over to the lessor within one year and providing investment activity reports and correct data upon request from Ministry of Agriculture. Besides, the lessee should pay land lease rent every year at the rate stated in the agreements. The lessee should not make any unauthorized use of leased land without a written consent from the lessor. Until three-fourth of the land is developed, the lessee cannot transfer the land or properties developed on the land to any other individual or company. In addition, an organization or company which leased the land in its name cannot reallocate the land to its individual members or shareholders, and failure to do so results in an automatic revocation of a contract. Upon developing three-fourth of the land, the lessee can transfer the land or properties developed on the land to any other individual or company only with permit from the lessor.

5.5.3.2 Lessor

The lessor holds exclusive right to monitor the activities of the lessee in accordance with the mutually agreed contract without causing any hindrance to the activities and operations of the lessee. The lessor has also the right to amend the land rent rate (decrease or increase) in consultation with the lessee. Finally, after 2010/2011, a new statement is added under the lessor’s right: ‘*With a convincing reason and for using the land for a better function (...) the lessor can revoke the land use contract*’ [Article 5:5 of the contractual template, (MoA 2010)]. This implies that, according to key informant officers in the Ministry of Agriculture, the lessor can revoke the leased land any time and has created a sense of

insecurity among potential investors and preclusion among investors which already leased land.

Followings are the obligations of lessor: (i) to supply investment land which is free of any constraint on the ground to the lessee within ten days from the time of contractual agreement. However, this does not happen in practice. Many of the investors received the land between 6 and 15 months after signing of of the contract that faced many local impediments (for instance land assumed as free by the government was already in use by local people), overlapping problems with other investors, and unsuitable land for agricultural practices, (ii) to provide investment privileges and incentives in accordance with available directives promulgated by the government, (iii) to ensure the lessee that there are no impediments (legal or other) in relation to land preparation, (iv) to secure access to the lessee for soil testing facilities or map databases of regional or federal government research centers, (v) to guarantee peace and security (in collaboration with other governmental bodies) around the investment areas free of cost from the side of the investee, (vi) if the investee fails to start developing land within the agreed time or fails to develop land in accordance with agreements entered or causes any damage to local natural resources or fails to pay lease fees, the lessor may be obliged to extend the time for such compliance or obliged to terminate the contract.

Generally, the land lease contractual agreement is focused on maintaining the interests of the two parties: the lessee (the commercial companies which acquire land) and the lessor (the governmental body: either the Ministry of Agriculture or the corresponding delegated body in the regions, i.e., the regional Bureau of Agriculture and Rural Development). There is no single statement in any of the contractual documents or templates which requests for the participation of any other stakeholders (e.g., local communities) when signing the land lease contracts.

In addition to the rights and obligations of the parties in the contract, the economic, social, and environmental significance of land lease agreements should be explored. How feasible are the contracts economically? For instance, how much is the land lease price across the districts of the Benishangul Gumuz region? How much is the status of large-scale agricultural investment projects in the region and what are the factors which determine progression at farm level in terms of the amount of cultivated land? Besides, the social and

environmental aspects of the contracts should be explored so as to have better understanding of the contracts and their practical implementation on the ground. The following section deals with the economic, social, and environmental perspectives of large-scale agricultural investment in the study site.

5.5.4 The gains and losses

5.5.4.1 The socio-economic achievement so far

Since land is a part of the supplies considered to be marketed to attract foreign direct investment, the expectation is clear: attraction of foreign capital, economic use of ‘free’ land and improving the internal state revenue through business (or income) tax yet, there is no objective land valuation in Ethiopia both at the federal and regional levels although there is a number of methods and techniques that could be used to measure the benefits of farmland such as hedonic pricing and contingent valuation (Ciriacy-wantrup 1947; Diamond and Hausman 1994; Ready *et al.* 1997; Venkatachalam 2004). Given that, the price quoted for different types of land is not based on its true values and amenities.

The federal government proposes the price of land simply on the basis of distance from the capital city to the location of the leased land. To put it in a nutshell, the stated price of land does not reflect the real value of land, very low prices compared to local land rental prices. The country is not benefitting from the actual benefits of land because the value of land is properly determined which results in extreme low land lease prices for large-scale commercial farmlands compared to the local informal land market values. Besides, there is no formal economic benefit sharing mechanism with local people. The benefit of land acquisition to local people is expected in the form of some social gains such as employment opportunities, construction of infrastructures, and technology transfer; all of which are not formal requirements expected from investors.

According to the interviews made with the lessees, the lower land lease price is considered as a compensation for the state’s low infrastructure, bureaucratic land acquisition process, and challenging business operating environment. Although the government of Ethiopia has a number of consecutive reforms to create a smooth investment and business operating environment, according to a recent the World Bank’s report: ‘*Globally, Ethiopia stands at*

166 in the ranking of 189 economies on the ease of starting a business' (World Bank 2013a:16). Nevertheless, this ranking is a point of debate as there is a growing investment flow to the country. This is because the number of business enterprises formed in the country within few years has increased by six folds in the period 2002-2012. Besides, there is a number of investment incentive packages, improved infrastructure and attractive investment environment (GOE 2012b; EIA 2013). However, pursuing the improvement of business operating environment in Ethiopia together with proper land use valuation and land integrated use planning can play a significant role in boosting the economic benefits of Ethiopian farmlands. Coming to the land lease pricing system, the Benishangul Gumuz regional government had its own land lease rent price for each district developed in 2008 and made it effective since then (Table 5.4).

While the nature of land (cultivated and non-cultivated) is considered as a determinant for setting land lease periods, it is not considered for determining land lease prices. Figure 5.5 displays the status of large-scale agricultural investment projects in the Benishangul Gumuz region. Due to various reasons, the average amount of land cultivated or developed by investors is significantly lower than the average amount of land leased to investors.

Table 5.4 Farm land lease price across districts of the region

Land lease price ha/year	Districts
Birr 50 (Euro 3.14*)	Sirba Abay Kumruk
Birr 60 (Euro 3.77)	Agalo Komashi Menge Odabildglo Sherkole Wenbera Yaso
Birr 70 (Euro 4.40)	Asosa Homosha Bambasi Belewjiganfoy Bulen Dibate Dangure Guba Maokomo Mandura Pawe

* 1 Euro = 15.90 Birr (Ethiopian/local currency), 2009; the current exchange rate is about 1 Euro equal to 15.90 Birr.

Source: Regional land use regulation (GBGR 2009)

The major reasons for this difference are lack of adequate information about the nature and suitability of land upon which investors agreed to develop, and farmland overlapping challenges and farm border disputes. Furthermore, challenging processes related to the import of agricultural inputs, discrepancy in the capacity of many investors in terms of the capital they promised to invest in and they actually invested, fear of contract cancellation by the government.

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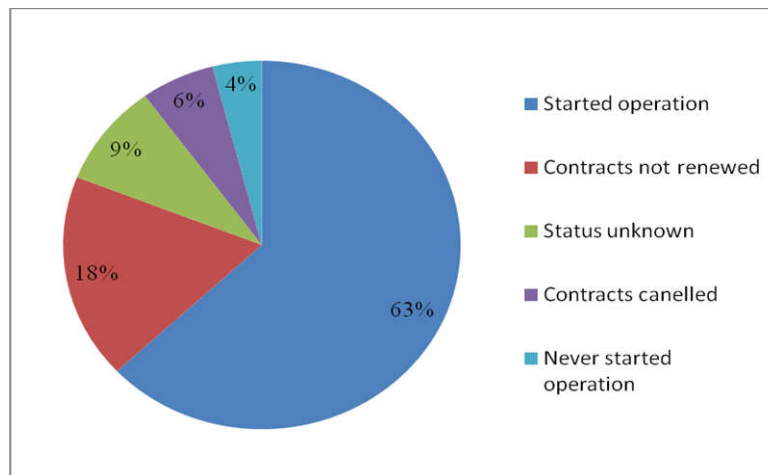


Figure 5.5 The status of large-scale Transnational (LSTN) agricultural investment projects in Benishangul Gumuz

Source: Investment Bureau (Asosa) and own survey

A paired sample t-test was applied to compare the amount of land taken in the form of lease and the amount of land developed (i.e., either started operation as operation is

measured in terms of ‘developed’ land size or fully entered into production of crops). According to the regional investment bureau, a ‘developed land’ is a leased land which is under commercial farmers or ‘investors’ and at least land preparation has started. Accordingly, the average land size developed (or cultivated) by investors (158.32 ha) is significantly ($\alpha \leq 0.05$) lower than that of the average land size on which investors agreed to develop (461.45 ha). There is a higher variation among the amount of land delivered to investors (with standard deviation of 774.73) as compared to the variation among the amount of land developed so far (with standard deviation of 232.60 and $\alpha \leq 0.05$) (Table 5.5). This implies that, investors have either lack the capacity to cultivate the land they took or discouraged to cultivate as they agreed on paper due to limited infrastructure where the farmlands are located.

Table 5.5 Paired t-test, size of land leased versus size of land cultivated

Variable	Obs	Mean	Std.error	Std.deviation
Size of land leased	86	461.4535	83.5418	774.7348
Size of cultivated land	86	158.318	25.08216	232.6024
Difference	86	303.1355	63.54804	589.3203

Mean(diff) = mean(Size of land leased - Size of cultivated land), t = 4.770
 Ho: mean(diff) = 0 degrees of freedom = 85
 Ha: mean(diff) < 0, Ha: mean(diff) != 0, Ha: mean(diff) > 0
 Pr(T < t) = 1.0000, Pr(|T| > |t|) = 0.0000, Pr(T > t) = 0.0000

There is also a policy issue on which debate is undergoing between export promotion and the stabilization of local food markets. As stated in the Ethiopian Investment Guide of 2012, those companies which export half or three-quarter of their production, are entitled to get comparably more incentive such as exemption from income tax (EIA 2012:38) compared to those investors which supply their production to the domestic market. Domestic food market inflation takes place, on the other hand, and still this export policy exists. Encouraging the export through explicitly stated incentives is good for Ethiopia as a developing country but ensuring the appropriate balance export promotion and stabilizing the domestic food supply market is imperative.

Respecting existing land use rights of local people, ensuring food security, transparency, good governance, community consultation and participation are among the desirable social standards for land deals so that investment can have a positive contribution to local

development. Article 92(3) of the constitution of Ethiopia promulgates that local people have the right to be consulted fully and express their view in planning and execution of environmental policies, projects and programs that affect them directly (GOE 1995). With respect to the participation of indigenous communities in Gumuz, before land is supplied for commercial investors, community level consultative discussions were made. There is a number of minutes and signed documents in district offices showing the consents of local communities through their representatives. However, nothing is formally stated on the land lease contractual agreements regarding the rights and options for local communities. District authorities mainly have difficult assignments of handling claims, conflicts and grievances voiced by local communities in relation to commercial farming companies. The two leading neighboring districts where 80% of the transnational companies got land in the form of long-term land lease contracts in the Benishangul Gumuz region are Guba and Dangure districts. There are dislocations or resettlement of local communities from the land they lived for years.

Key informants and local administrative officials have different justifications for this displacement. According to the key informants, the eviction is considered as part of the preparation to supply 'their land' to investors. The local administrators call the displacement as 'villagization' programme which was made to supply improved social infrastructure such as road, school, clinics, water supply, electric energy supply, etc, though the practice on the ground has not seen so far. According to the data extracted from the study areas, a total of 2,396 households were dislocated in three years period (Tables 5.6 and 5.7). The resettlement is creating a pressure upon the recipient villagers and the environment.

Table 5.6 Dislocated and recipient households in the Guba district

Kebele*	Resettled households	Households in recipient village(s)	Total (% increase of number of households)
Abela Horus	83	78	161 (106.4%)
Almehal	87	306	393 (28.4%)
Bengo	211	54	265 (390.7%)
Iyssid	104	98	202 (106.12%)
Wedelbahit	46	13	59 (3.54%)
Cumulative average	531	549	1080 (96.72%)

Source: Own computation at Guba District office, Mankush

**A 'kebele' is the smallest administrative unit in Ethiopian governance structure which consists a minimum of five hundred households or a population of 3,500-4,000 persons.*

Table 5.7 Resettled and recipient households in the Dangure district

Kebele*	Resettled households	Households in recipient village(s)	Total (% increase of number of households)
Azaltiktli	97	73	170 (133%)
Aypapo	158	38	196 (415.8%)
Burji	173	190	363 (91.05%)
Gitsi	115	110	225(104.54%)
Dabuhkokel	99	104	203(95.19%)
Jimtiya	144	149	293(96.64%)
Gublak	69	330	399(20.9%)
Chidanguya	74	23	97(321.74%)
Dibatie	48	106	154(45.28%)
Bawla	60	58	118 (103.45%)
Juraysis	54	60	114(90%)
DekMariam	299	95	394(314.73%)
Bengez	11	57	68(19.3%)
Kotay	44	122	166(36.07%)
Anjakuaya	133	66	199(201.52%)
Abaydar	287	78	365(368%)
Total (average% increase)	1865	1659	3524 (112.42%)

Source: Own computation at Dangure District office, Mambuk

If we see the 'performance' of the villagization program, 13% of the households in Guba and 16% of those in Dangure have been part of the villagization programme performed by district administration offices and the regional state. If the recipient communities in the villagization program are taken into account, 27% of households in Guba and 30% of the households in Dangure are affected by the villagization programs. Furthermore, employment opportunity and ensuring national food security are part of the presumptions behind the commercial supply of farmlands. Since October 2013, throughout the region, employment opportunity was created for 4,094 people from which 848 are permanent and 3,246 are temporary. There is a high possibility of further employment opportunities that will be available in parallel to the farmland operational progress and growth of companies in the region.

Although there may be many factors which determine the amount of land developed by an investor, we checked the level of effect from the five factors (as indicated in Table 5.8) which were prominently mentioned by key informants. So as to know the factors (and for which we have data) which may determine the size of land developed, regression analysis was made. According to the results of the regression output, R-squared = 0.75, adjusted R-squared = 0.73, implying that the independent variables (i.e size of land taken or leased, level of permanent employment generated, level of temporary employment generated, distance of farm lands from all weather road, and investor's level of education) explain about 73% of the variability in the dependent variable (i.e size of land developed or cultivated).

The regression model is statistically significant, $F(5, 80) = 47.38$, $p=0.0001$, indicating that overall, the model applied can significantly predict the dependent variable, i.e the size of land developed or cultivated (Table 5.8). Among other variables, total size of land leased (i.e, land developed) has a significant effect upon the size of land developed and cultivated by an investor. Similarly, distance of farm from an all weather road has a significant effect upon the size of land developed or cultivated by an investor. This implies that improving rural infrastructure (particularly road) is indispensable to enhance farm level performance of commercial farms. Other factors, such as amount of labor employed and investor's level of education has insignificant effect upon the size of land developed or cultivated by an investor.

The output correlates with the observation we have in the field that much of the temporary labour force is used to clear the land (land preparation) which is commonly made with supervising permanent employees. The more permanent employees, the more temporary employment. Both the amount of land taken and the amount of land developed do not have a statistically significant effect on the level of temporary employment so far. The most probable reason for this is that significant amount of land is not developed so far, as temporary employees are required either for weeding or cultivation works once investors enter into full production. However, the amount of land developed is expected to have a meaningful effect on the level of (temporary) employment after companies enter into fullscale production in the near future.

Table 5.8 Regression analysis on the main factors influencing size of cultivated land

Independent variables	COEFFICIENTS				
	B	Std.error	Beta	t	Sig.
Size of land leased	0.25	0.02	0.841	14.81	0.000
Permanent employees	0.11	3.15	0.002	0.03	0.973
Temporary employees	0.18	0.69	0.016	0.25	0.801
Distance from road	-2.13	0.88	-0.138	-2.41	0.018
Level of education	2.01	3.01	0.038	0.67	0.508
R-squared	0.75				
Adjusted R-squared	0.73				
Standard error	120				
F-value	47.38				
Level of significance	< 0.001				

Concerning the food security effect of farmland acquisition, there are key concerns among local communities and stakeholders in the country. Local Gumuz communities are losing access to non-timber forest products and their traditional sources of food, the natural forest areas, where they have been accustomed for generations. There is a dramatic shift in terms of land use and consequently the livelihood of local people: a shift from forest dependent means of living to customary farming practices without adequate support and training of farming practices. Furthermore, the socialization of the resettled groups of households (in some cases with different ethnicity) with the recipient ones is not easy. Understanding the wider context and the overall predicaments of local people in relation to local resource access for local communities is required.

5.5.4.2 Ecological degradation

As stipulated in Article 92 (2) of the national constitution of Ethiopia, the implementation of development programs and projects shall not have damaging effects on natural environment. Furthermore, according to the country's environmental impact assessment law (proclamation no. 299/2002), proper accomplishment of environmental impacts of a development project before its implementation is mandatory (GOE 2002b). However, in practice no environmental impact assessment reports are prepared which are cross-checked in various data bases and through relevant key informants and confirmed by investors. Parallel to land clearance for commercial farming, forest wildfire is also one of the most prevalent challenges observed during the field visits made in the region. The main causes for forest fire in the region include commercial farmers who burn their wood biomass so as to clear land for tillage, local people who practice wild honey production, and natural wild fires occurring due to the dry-hot seasons. There is deforestation on the ground by the investees in the Benishangul Gumuz region but no action has been taken for years.

Land conversion from forests to 'farm lands' has contributed to deforestation of the natural forest resource bases of the region as well. However, the forest resources of Benishangul could have been conserved as national buffer zones for expanding the Sahara desert. It is very common to observe huge woody masses in every commercial farm, and an ongoing land clearing and preparation (deforestation) (Figure 5.6).



Figure 5.6 Deforestation is commonly seen and it is part of 'land clearance' by companies
(June 2012, Guba district)

Following deforestation, many of the commercial farms have started growing commercial crops, such as biofuel tree (Figure 5.7) and edible crops; resulted in huge tracts of land converted from forest to commercial crop farms. As a result, there is a huge loss in biodiversity (both flora and fauna). Moreover, the environmental cost of the villagization program in the study region is clearly visible which contributed to additional deforestation and degradation of forest resources (Figure 5. 8).



Figure 5.7 Pongamia (a biofuel tree seedling) by Shapoorji-Pallonji (S & P) Company
(June 2012, Dangure district)



Figure 5.8 The villagization program has contributed to deforestation
(June 2012, Dangure district)

The other pressing issue in the Guba district is locally called ‘Dam-in-Between’, i.e., the Grand Ethiopian Renaissance Dam (GERD), the building of which started in 2011. Its reservoir will have a capacity of $63 \times 10^9 \text{ m}^3$, covering a total area of 1800 km^2 (Salini Impregilo 2011). The dam will be the largest dam in Africa and the 8th largest hydroelectric power dam in the world (ERTA 2011). However, it was in this region where the dam is located, that the government of Ethiopia supplied huge parcels of commercial farmlands on long-term land lease basis. The reservoir will be threatened by sediment deposition if there is no conducive natural buffer zone. Similar challenge was already observed by previous studies in Northern part of the country, for instance, sediment deposition in reservoirs is a serious off-site consequence of soil erosion (Haregeweyn *et al.* 2006). To have such a natural buffer zone, land and forest areas in the closer upper watershed should have been conserved properly, but the practice in the ground by the land deals has made it the opposite. Restoration of forest ecosystem services will be important both in terms of sustainable agricultural production and protection of aquatic ecosystem (Tilman *et al.* 2002; Chazdon 2008).

5.6 Conclusion

While it is imperative to encourage and attract agricultural investment for the economy of developing countries of Africa, it is equally important to meet the desirable social, economic, and environmental standards of the sector. Lessons learned from the Benishangul Gumuz region highlight that supplying huge tracts of farm lands to large-scale agricultural investment requires integrated land use planning, appropriate land valuation, functional land governance and monitoring frameworks, capacity to implement the various social, and environmental laws. Land should be seen not only from the economic benefits of large scale agricultural investment, but also from the angle of other marketable environmental services such as payments for environmental services.

Sustainable land use alternatives other than commercial farming, such as reducing emissions from deforestation and forest degradation, and foster conservation and enhancement of forest carbon stocks (REDD+) should be considered especially in those ecologically fragile areas where the threat of desertification is surging (Resosudarmo *et al.*, 2014). Countries should not ambitiously supply large-scale farmlands without adequate

preparation, land use planning, proper land valuation, and capable monitoring framework. Adequate consultations should have primarily been made with local communities aiming their active participation when formulating the contract and all agreements. Accordingly, commercial land acquisitions should pass through ‘inclusive’ deals that integrate biophysical environment, stakeholders, governance and institutions (Dereje *et al.* 2015). Following the acquisition of land by transnational companies, there is a dramatic shift in terms of land use and the livelihood of local people: a shift from forest dependent means of living to customary farming practices without adequate support and training of farming practices.

Integration and harmonization of large scale commercial farming with other local development projects is crucially important for countries which supply tracts of large scale farm lands to investors. For instance, there is a big concern in the context the Benishangul Gumuz region of Ethiopia where the fate of large-scale commercial farmlands around the Grand Ethiopian Renaissance Dam (GERD) where long-term land use contract is made between the government of Ethiopia and commercial companies (Goitom, 2014). What will be the long-term effect of those large-scale mechanized commercial farms which are operating the upper watersheds of the region upon the functionality and sustainability of the reservoir of the dam? Introducing cadastral systems and fit-for-purpose land management approach can contribute to resolving the prevailing challenges and predicaments of large-scale private commercial farming in the region (Enemark 2005; Enemark *et al.* 2014).

Large-scale agricultural investment in the Benishangul Gumuz region in general and Guba district in particular is at the crossing point of protecting reservoir of the hydroelectric dam or continuing in the supply of large scale farm lands which has resulted in significant deforestation and land conversion. Besides, the forest resources of the Benishangul Gumuz region could have been conserved as national buffer zones for expanding the Sahara desert. Moreover, the critical functions of forestlands in deterring the expansion of the Sahara desert to western SSA is indispensable. Determinants of employment among commercial farmlands in commercial land supplying developing countries in general, and in the study area in particular, household level welfare effects, land use land cover changes, and the nexus between large-scale commercial farming and mega hydro dam and its reservoir can be further issues for future studies to create more lessons learned from commercial

farmland acquisition in Ethiopia. Lastly, improving rural infrastructure, particularly road, is indispensable to enhance farm level performance of commercial farms.

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Chapter 6 Environmental response on land deals: A case of peak discharge and sediment transport

Adapted from Dereje, T., Lanckriet, S., Azadi, H., Asfaha, T.G, Mitiku, H., Witlox, F., Nyssen, J. (2016). *Effects of land deals on peak discharge and sediment transport in the catchments around the Grand Ethiopian Renaissance Dam.*(Under review).

Abstract Land degradation poses siltation threats to reservoirs, and hence, sustainable hydropower development necessitates conservation of upstream catchments. Ethiopia is constructing Africa's largest hydropower dam, the Grand Ethiopian Renaissance Dam (GERD), on the Blue Nile. Given the commercialization of large tracts of land in the closer catchments, there is a need to explore the effects on peak discharge and suspended sediment concentration (SSC). A field survey was conducted on 20 ephemeral streams to compare annual maximum peak discharges between catchments (0.4 – 15.5 km²), eight of which drain commercial farms and twelve others land under traditional management. We measured channel characteristics, observed flood marks and applied the empirical Manning equation to calculate peak discharges. SSC samples were taken during each runoff event from a stream in each of the two dominant land management categories. Results indicated that there is a 51% increase in the magnitude of peak runoff from commercial farms compared to traditionally managed lands. Catchments dominated by commercial farms also have a significantly higher SSC (mean = $6.44 \pm 2.23 \text{ g l}^{-1}$) compared to catchments without commercial farms (mean = $2.77 \pm 2.31 \text{ g l}^{-1}$). Forests and woodlands have strong buffering effect, croplands are generating higher peak discharges and sediment transport. Leasing forests and woodland to agricultural companies has resulted in deforestation. Consequently, the increased runoff response may lead to downstream bank erosion, affects downstream communities, and the increased sediment transport poses a significant threat to the 4.8 billion dollars hydropower reservoir of the GERD.

6.1 Introduction

Sustainable hydroelectric power development requires conservation of upstream catchments because sediment deposition can be a threat to reservoirs (Adams, 1989; Devi *et al.*, 2008). The Government of Ethiopia is constructing Africa's largest hydroelectric power station on the Blue Nile called the Grand Ethiopian Renaissance Dam (GERD). On the other hand, the Nile basin is characterised by severe land degradation and variability of river discharges (Bewket & Teferi, 2009; Frankl *et al.*, 2011; Nyssen *et al.*, 2004). Soil erosion from large-scale farms has been a challenge in Ethiopia in earlier times. According to Joyce (1943), soil erosion and gullying were conspicuous on the large Italian tractor-ploughing schemes in Ethiopia. Later on, during the socialist regime in Ethiopia, high rates of soil loss were measured on large mechanised state farms (Alemayehu, 1992). The high erosion rates were attributed to monoculture cropping, improper cultivation, mechanisation and large farm sizes with extremely long slopes up to 200-500 m. Hurni (1983) observed soil erosion, particularly slight gullying and abundant rill erosion, on half of the large-scale farm lands in the country.

Conversion of natural land cover to farmlands can have a significant effect on the hydrological functions of catchments in other countries (Andréassian, 2004; Buytaert *et al.*, 2005; Guillemette *et al.*, 2005). Brown (2012) pointed to topsoil loss from mechanised farms in countries such as Chad, Mongolia, North Korea and Haiti. Although commercialization of farmlands is assumed to cause land degradation, the effects of the contemporary large-scale land acquisitions or 'land grabbing' upon stream response and soil loss is a less explored area of study around where the GERD is located (Dereje *et al.*, 2016).

The GERD is a roller-compacted concrete dam with a height of 145 m, complemented by a saddle dam up to 50 m high and 5 km long (IPoE, 2013). After impoundment, its reservoir will extend 246 km into the Blue Nile valley, as well as into the valleys of its tributaries such as Beles River (Figure 6.1). The dam is located 20 km east of the border between Ethiopia and Sudan. The reservoir covers 1874 km² at the full supply level will be at 640 m a.s.l. With a water storage volume of 74.01 billion m³ (due completion in 2017), the dam is expected to generate 15,692 GWh of energy annually. However, leasing large tracts of land to both international and domestic investors in the upper catchments, close to its reservoir

has become one of the emerging issues which have not given the desired level of investigation and policy attention (Dereje *et al.*, 2016). Our study focuses on exploring the impacts of commercial farms on peak discharge and suspended sediment concentration (SSC) in the catchments nearer to the reservoir of the GERD.

6.2 Materials and methods

6.2.1 Study area

The location of the study area (Figure 6.1) is in Benishangul-Gumuz Region, a low-lying peripheral region, located between the Western Escarpment of the Ethiopian highlands and the Sudanese border between 11° - 11°30' N and 35°30' - 36° E. The average annual rainfall of the areas is 1280 mm. The summer rainfall (July to September) accounts for 85% of the annual precipitation. The indigenous people in the study area, the Gumuz communities, are used to customary and communal 'ownership' of land. They are shifting cultivators who involve in a slash-and-burn farming. Besides, they support their livelihood through hunting, fishing, gathering, and honey production.

There is ongoing land conversion in the area, especially after the government of Ethiopia offered millions of hectares of land for companies (EIA, 2005). Consequently, investors occupy forest and woodland for commercialised agriculture. Commercial catchments are characterised with tractor ploughing on larger plots of farms (average size of 18 ha) where some of the plots have up to 2.2 km length. Under the obligations of the lessee, commercial farmers were agreed to conduct an environmental impact assessment, conservation, and apply appropriate farming methods to prevent soil erosion. However, there is a lack of scientific evidence about the actual effect of commercialization of Gumuz lowlands upon stream flow and soil erosion and the interplay with the emerging (the biggest in Africa) hydropower reservoir. For the study, twenty comparable and representative catchments (0.4 – 15.48 km²) are considered, eight of which are predominantly under commercial farming while twelve are mainly non-commercial lands with mixed use (Figures 6.1 and 6.2). The study area is predominantly low-relief with an average altitude of 870 m a.s.l, mean slope gradient of less than 2%, and mean slope aspect of 197° (i.e., South-West).

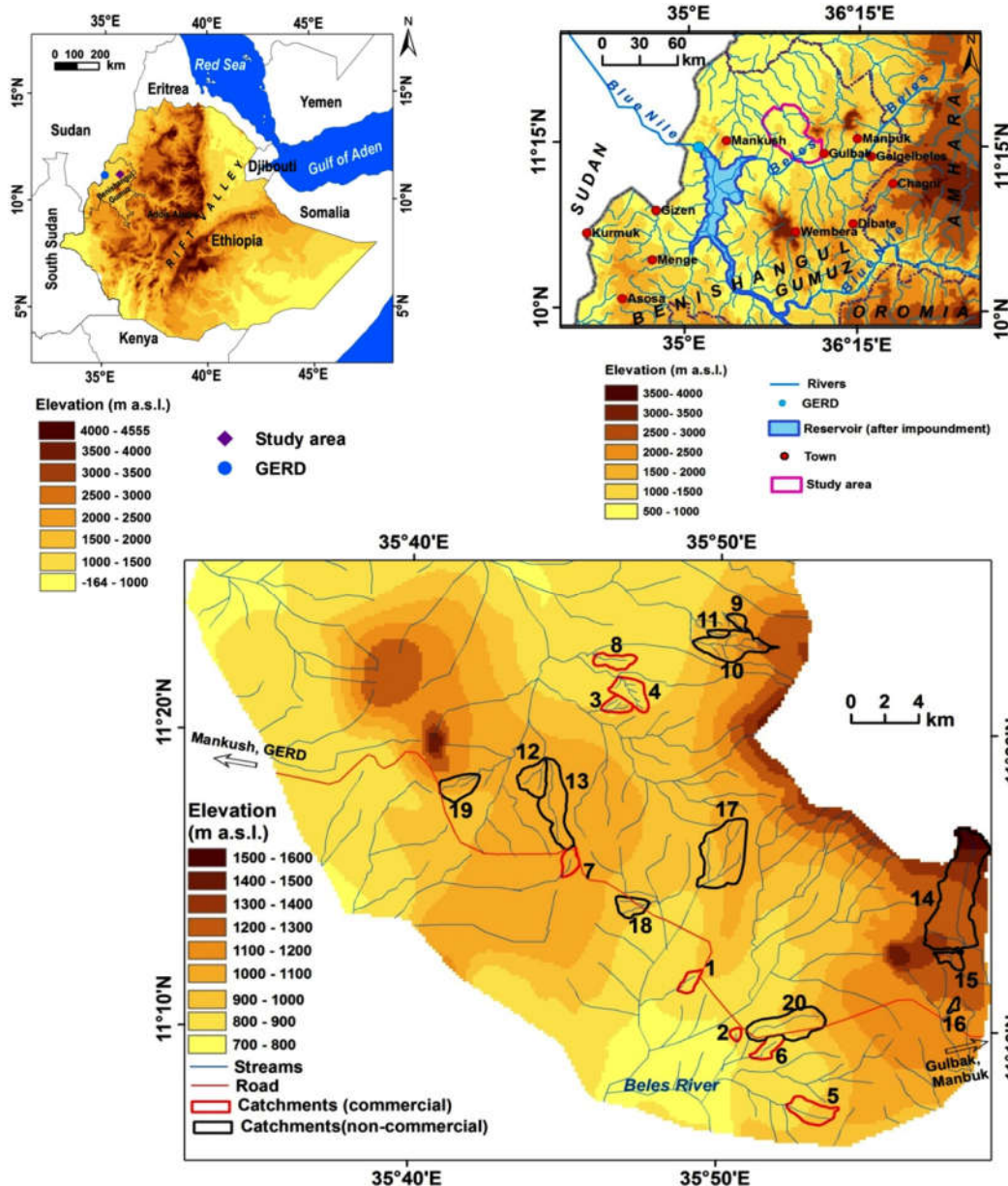


Figure 6.1 Location of GERD and the study area

6.2.2 Land cover variables

By adapting available techniques of land cover classification, eight land cover classes were identified (Torello-Raventos *et al.*, 2013). High-resolution Google Maps (2012/2013), Digital Globe, NASA Aqua MODIS imageries (2014/15) were co-registered on an image-to-image basis. Co-registration was made to the topographic maps (1: 50,000) as the reference positional accuracy of x and y coordinates were determined by root-mean-

square error (RMSE_{x,y}) and it was between 0.001 and 0.48 m. For ground truthing, ground control points (GCPs), n=410, were collected in the field using the handheld Global Navigation Satellite System (GNSS). The GCPs were unambiguously identifiable ground points such as camps, farm level monitoring sites, village points, bridges, road features, remarkable trees, local administration posts, rivers and other topographic features

Furthermore, the GCPs were indispensable to verify remotely sensed data as remote sensing imagery are under the influence of geometric distortions (Eltohamy & Hamza, 2009). Repeated land cover observation in collaboration with local key informants and photographs of 2012-2015 were also valuable inputs to make the land cover classes. Finally, detailed field verification was made (February-August 2015) with the land use maps of each catchment at hand.

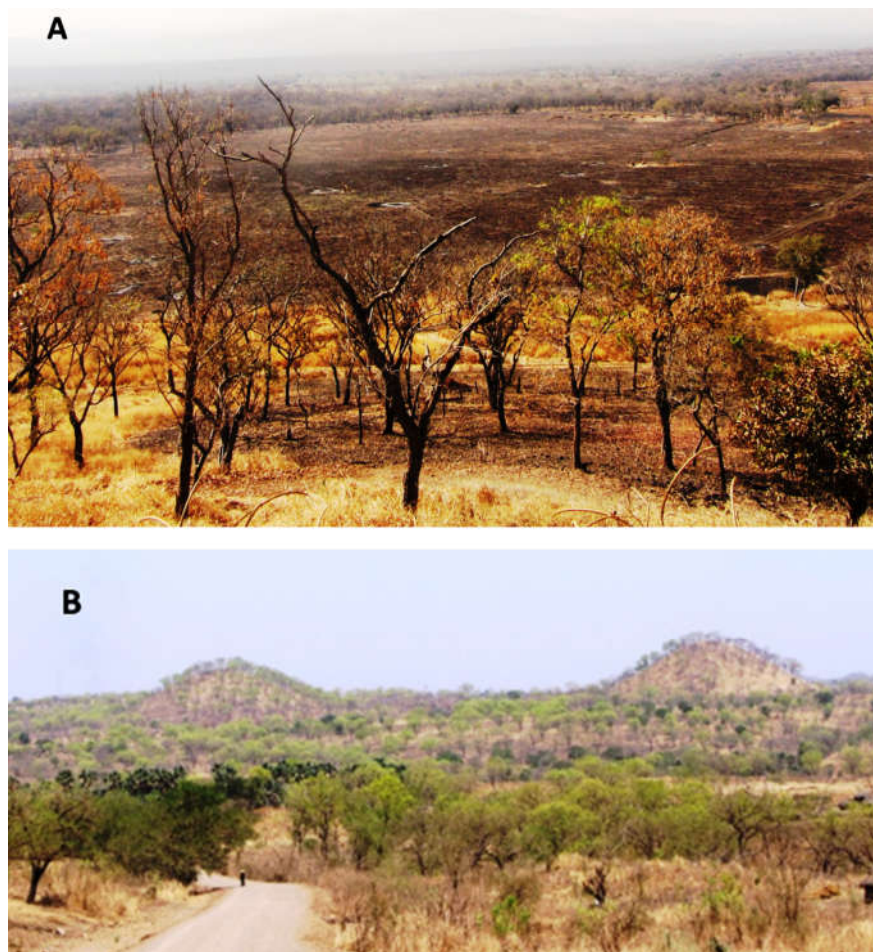


Figure 6.2 Partial views of the study area: Abraham catchment, typical commercial farming area (A), Kuda Guna area, typical for non-commercial farming (B).

In addition to the percentage of forest and woodland cover, the forest distribution index (Kcv) across the catchments can determine the runoff variability (Quynh & Bao, 2006):

$$Kcv = sd/m \quad (1)$$

Where Kcv is forest cover distribution, sd is standard deviation, m is the mean value of ten randomized trials (K_i 's) which fall within the polygons of forest cover class. Kcv is usually categorized into four groups: (i) $0 < Kcv < 10\%$: even distribution, (ii) $10\% < Kcv < 20\%$: relatively even distribution; (iii) $20\% < Kcv < 30\%$: uneven distribution, and (iv) $Kcv > 30\%$: very uneven distribution

Based on Kcv values and percentage of forest cover, integrated index of forest cover and its distribution (RCD) is computed.

$$RCD = FC/Kcv \quad (2)$$

Where, FC is forest cover (%) and where Kcv is forest cover distribution.

6.2.3 Morphometric variables

Catchment-based morphometric characteristics and streams affect runoff in various ways. For example, they influence the time distribution of runoff response from stream channels and the whole catchment (Bruijnzeel *et al.*, 2011). Using a digital elevation model (DEM), i.e., ASTER-DEM and topographic maps (scale, 1:50,000), values for relevant geomorphometric variables (Table 6.1) were computed. Finally, using the national geological map of Ethiopia (GSE, 1996), the lithological profile was defined for each catchment.

Table 6.1 Morphometric factors of the study

Geomorphometric variable	Method or model used	Equation no.
Catchment geometry		
Catchment area (A, km ²)	GIS analysis (Schumm, 1956)	
Catchment perimeter (Pc, km)	GIS analysis (Schumm, 1956)	
Catchment length (Lc, km)	GIS analysis (Schumm, 1956)	
Compactness coefficient (Cc)	$Cc = Pc / 2\sqrt{\pi A} \approx 0.2841 \frac{Pc}{\sqrt{A}}$ (Gravelius, 1914)	(3)
Drainage characteristics		
Length of main channel (L _{mc} , km)	GIS analysis (Schumm, 1956)	
Stream length (Ls, km)	$Ls = \sum_{i=1}^n Lsi$ (Strahler, 1957)	(4)
Drainage texture (Dt)	$Dt = Ns / Pc$ (Horton, 1945)	(5)
Drainage density (Dd, km km ⁻²)	$Dd = Ls / A$ (Horton, 1945)	(6)
Infiltration number (I _f , dimensionless)	$I_f = Dd * Df$ (Faniran, 1968)	(7)
Length of overland flow (Lo)	$Lo = 0.5D_d$ (Horton, 1945)	(8)
Relief characteristics		
Hypsometric integral (Hi)	$Hi = (Hmean - Hmin) / (Hmax - Hmin)$ (Schumm, 1956)	(9)
Ruggedness number (Rn)	$Rn = Hd * Dd$ (Patton & Baker, 1976)	(10)
Average catchment slope (Sc, mm ⁻¹)	$Sc = Hd / Ld$ (Schumm, 1956)	(11)
Time factor		
Time of concentration (T _c)	$T_c = K * Lmc^{0.77} / Smc^{0.385}$ (Kirpich, 1940)	(12)

Lmc: length of main channel(km); Dt: Drainage texture; Dd: Drainage density; Lf: infiltration number; Lsi: Length of streams 1, 2, 3,n (km); n: number of streams; Cc: compactness coefficient; H: Elevation, Hean: average elevation; Hmin: minimum elevation; Hmax: maximum elevation; Hd: catchment elevation difference between the highest and the lowest topography; Ld : difference in length; Lmc: length of main channel; Smc: slope of main channel; K: a unit conversion coefficient where K= 0.0195.

6.2.4 Sediment sampling and calibration

Twin catchments (Figure 6.3) were compared for suspended sediment concentration. The catchments are not only near each other but also very similar regarding relevant variables such as rainfall, lithology, altitude, and average catchment slope, yet significantly different in land use/land cover, as the one is mainly under commercial farming and the other traditionally managed. Suspended sediment concentration (SSC) samples (n=30, 15 from each of the sediment monitoring stations of the two catchments) were taken once per rainy

day during the rainy season. Samples were taken during runoff discharge using a plastic bottle on a stick. We aimed to sample during the peak of each event, as the sediment load at that moment; best translates the erosivity of the catchment.

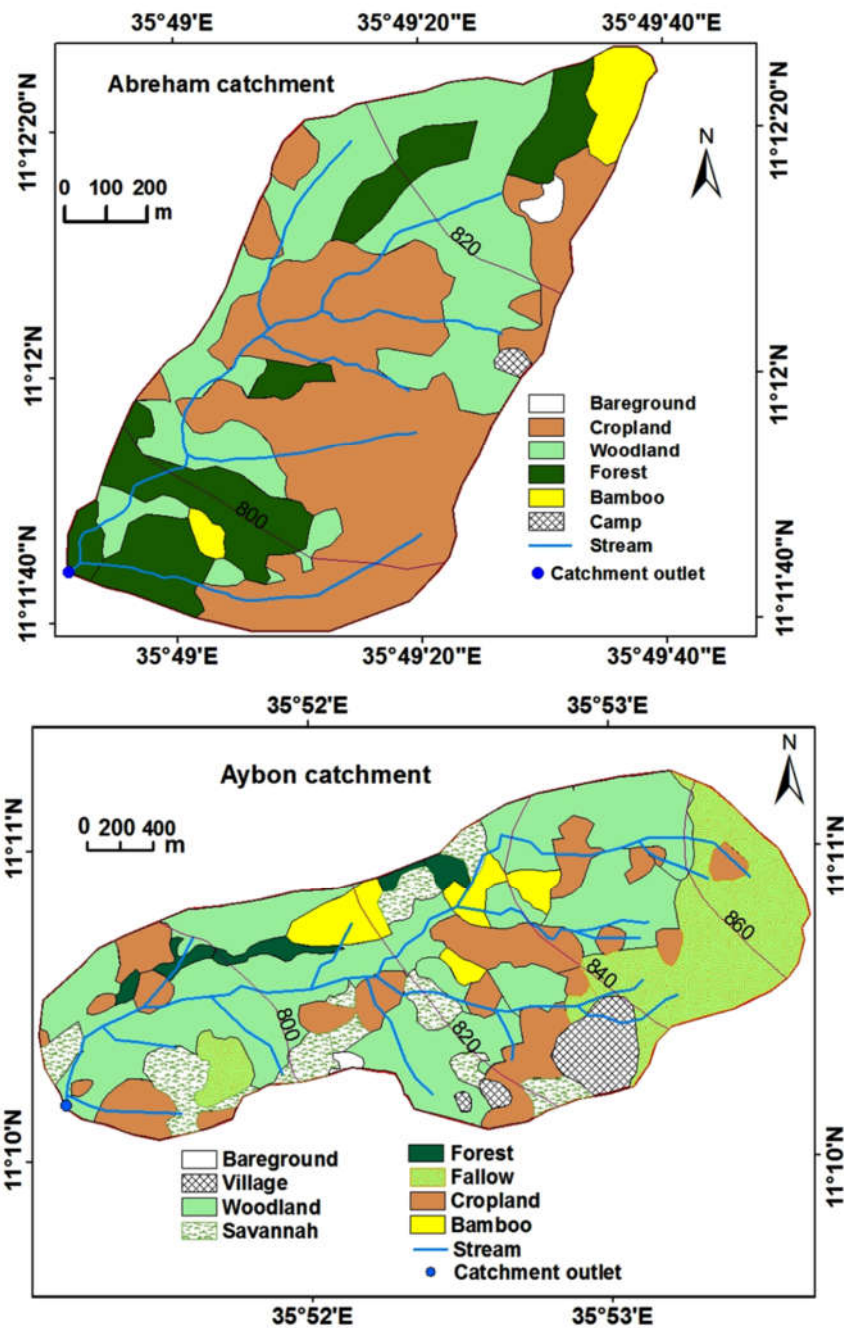


Figure 6.3 Land cover and location of sediment sampling stations: Abreham and Aybon catchments

6.2.5 Computation of peak discharge

There are different methods of measuring discharge from catchments. The instantaneous measurement of peak discharge is challenging because of the requirements of permanent instrumentation, and the destructive character and flashness of the major discharge events in dryland rivers (Lumbroso & Gaume, 2012). For our case, as it was not difficult to obtain peak mark points at the outlet of catchments (Figure 6.4), annual peak discharges were obtained using indirect methods (El-Hames, 2012; USGS, 1982).



Figure 6.4 Stream peak flow marks

The Manning's equation was applied to determine peak runoff as it is recommended for computing open channel flows (Williams, 1970):

$$Q_p = AcV \quad (13)$$

Where Q_p is annual peak discharge ($m^3 s^{-1}$), Ac is the cross-sectional area of the channel section (m^2) for the level of annual peak flood (as indicated by flood marks), V is average flow velocity ($m s^{-1}$). Ac was computed as the product of the average stream channel width and its depth. V was calculated using the Manning's empirical formula:

$$V = (R^{2/3} S^{1/2})/n \quad (14)$$

Where R is hydraulic radius (m) which is cross-sectional area divided by the wetted perimeter; S is average slope gradient of the channel ($m m^{-1}$), and n is the Manning's roughness coefficient. As there is a strong relationship between the peak discharge

estimation and estimation of Manning's n values which is usually done using qualitative field observation. Besides, multiple photographs taken from different directions were used to evaluate n values. The values of n were determined through expert evaluation whereby eight experts assessed the n value using, at least, four photographs of every channel taken from different directions. The lists of the factors that affect the value determined for roughness coefficients were adapted from Cowan's (1956) method (Appendix II) which considers specific factors to calculate the Manning's roughness coefficient (N):

$$N = (n_0 + n_1 + n_2 + n_3 + n_4)/m \quad (15)$$

Where n_0 is materials involved, n_1 is the degree of irregularity, n_2 is variation in channel cross section, n_3 is the effect of obstruction, n_4 is an effect of vegetation and m is the degree of meandering. Since total peak discharges events across the catchments were also dependent on catchment area, to compare catchments on their runoff response, peak discharge values were normalized per catchment area (Blume *et al.*, 2007):

$$C_p = Q_p/A_c \quad (16)$$

Where C_p is peak discharge coefficient for a particular catchment ($m^3s^{-1}km^{-2}$), Q_p is annual peak discharge (m^3s^{-1}), A_c is catchment area (km^2). Rainfall is positively influenced by altitude (Davie, 2008). However, the catchments are almost similar in altitude. According to Beven & Hornberger (1982), in a relatively homogeneous topography, the effect of rainfall variability was in the timing of the runoff hydrograph only, with an inconsiderate effect on peak storm volume. Furthermore, recent rainfall data (2012-2015) obtained from companies located in catchments show that the annual rainfall is nearly the same as the rainfall data obtained from Manbuk ($11^{\circ}17'36''N$, $36^{\circ}14'39''E$), the nearby meteorological station.

Finally, we made normality checks on the data using Shapiro-Wilk test, which is helpful to know whether a sample is drawn from a normally distributed population or not (Shapiro & Wilk, 1965). To make a comparison of variables between commercialized and non-commercialized catchments, a two-sample T-test was conducted for normally distributed samples, while the Mann-Whitney T-test was applied for variables lacking normality in their distribution (Mann & Whitney, 1947).

6.3 Results and discussion

6.3.1 Land cover variability and effect on peak flow

On average, the commercialized catchments comprise of cropland (58%), forest 9%, woodland (21%), savannah (6%), bamboo (3%), and other land covers (3%). The non-commercialized catchments constitute woodland (38%), forest (27%), cropland (17%), savannah (10%), fallow or *bukuna* land (in local Gumuz language) (4%), bamboo (4%), and others (1%) (Table 6.2). Results show a significantly lower ($P < 0.01$) forest cover in commercialized catchments (mean = 9.10%, SD = 8.96) than non-commercialized catchments (mean = 27%, SD = 23.17). Besides, the commercialized catchments have a significantly lower ($P \leq 0.01$) integrated forest cover and its distribution (RCD) index (mean = 0.36, SD = 0.73) compared to the non-commercialized catchments (mean = 1.80, SD = 1.46). While forest is very unevenly distributed in the commercialized catchments (mean = 63.10, SD = 48), it is in a relatively even distribution in the case of the non-commercialized catchments (mean = 19.70, SD = 10.81).

Table 6.2 Mann-Whitney t-test for land cover variables across catchments (in %)

Land cover	Commercialized (n = 8)			Non-commercialized (n = 12)		
	Min-Max	Mean	SD	Min/Max	Mean	SD
Bare ground	0.10-2.5	1.00	0.69	0-1.92	0.58	0.55
Bamboo	0-7.64	3.10	3.28	0-8.33	3.76	2.82
Cropland	19-82.3	57.5**	19.52	0-52.20	16.96**	19.40
Fallow	0-6.20	0.80	2.20	0-17.70	4.03	5.74
Forest	1.5-26.4	9.10*	8.94	2.6-73.24	27*	23.17
Savannah	0-16.31	5.6	5.10	0-20.33	9.20	6.24
Village/Camp	0-5.21	1.80	2.07	0-4.04	0.60	1.23
Woodland	8.70-41.70	21.20*	12	18.20-68.80	38*	16.26
Vegetation ^a	11.10-74.90	38.90**	18.84	47.25-100	78**	20.48
Kcv ^b	12.30-158.14	63.10*	48	9.20-43	19.70*	10.81
RCD ^c	0.03-2.15	0.36**	0.73	0.35-4.57	1.80**	1.46

^a Vegetation : combination of bamboo, forest, savannah, and woodland

^b Kcv : forest distribution index

^c RCD : integrated index of forest cover and its distribution

Difference between commercialized and non-commercialized catchment areas is significant (* $P \leq 0.05$, ** $P \leq 0.01$)

In terms of annual peak discharge (Table 6.3), the catchments exposed to commercial farming have a higher (by 51%) C_p (mean = 6.91, SD = 1.03) compared to the non-commercialized (mean = 4.58, SD = 0.82).

For the latter group of the catchments, a higher percentage of vegetation cover has better buffering effects among the non-commercialized catchments, a distinct role of forest and woodland (Birkinshaw & Bathurst, 2011). Percentage of crop land cover has a significant positive correlation with catchment specific runoff response (C_p), with $R^2 = 0.75$, $P \leq 0.01$ (commercialized catchments) and $R^2 = 0.56$, $P \leq 0.01$ (non-commercialized catchments) (Table 6.4). For the non-commercialized catchments, there is a negative correlation between C_p and RCD ($R^2 = 0.63$). In addition to forest, low woodland coverage among the commercialized catchments has a significant contribution towards a higher peak flow, and this is in line with the findings of Guillemette *et al.* (2005) and (Rowe, 1963).

Table 6.3 Peak discharge (Qp), catchment-specific peak discharge coefficients (Cp).

Catchment	Ac ^a	Sc ^b	V ^c	n ^d	Qp (m ³ s ⁻¹) ^e	Cp ^f
Abreham	5.82	0.01	1.34	0.06	7.78	6.95
Belay	2.58	0.01	0.93	0.04	2.40	6.00
Anjakoya	2.49	0.05	3.75	0.04	9.34	7.02
SP5	7.39	0.03	3.15	0.05	23.27	8.08
Trakon	4.15	0.02	3.68	0.03	15.26	4.97
Jura small	3.18	0.02	3.35	0.03	10.65	7.01
Zeleke	2.34	0.06	4.30	0.04	10.04	7.12
SP6	4.91	0.03	2.94	0.05	14.43	8.11
Mean (Commercial, n =8)	4.11	0.03	2.93	0.04*	11.65	6.91**
SD (Commercial)	1.82	0.02	1.19	0.01	6.16	1.03
SP2	1.63	0.04	2.03	0.05	3.30	4.23
Sanchel small	6.94	0.03	3.78	0.04	26.24	5.04
SP1	1.09	0.02	1.59	0.05	1.73	3.39
Epinach	10.32	0.02	1.43	0.09	14.74	5.27
Kodem	13.89	0.02	2.12	0.07	29.46	4.99
Kemem	19.12	0.05	3.75	0.08	71.75	5.00
Esinga	2.31	0.04	2.00	0.07	4.61	3.75
Ekuramtsa	0.67	0.07	2.67	0.04	1.79	4.48
Aysika	7.23	0.05	4.32	0.05	31.22	3.40
Datish	4.43	0.02	2.38	0.05	10.54	5.79
Aymila	7.04	0.03	2.18	0.06	15.32	5.57
Aybon	7.53	0.02	3.29	0.04	24.82	4.10
Mean (Non-commercial, n = 12)	6.85	0.03	2.63	0.06*	19.63	4.58**
SD (Non-commercial)	5.54	0.02	0.94	0.02	19.71	0.82

^aAc: cross-section area of the channel section (m²), ^bSc: average slope gradient of the channel, ^cV: average velocity (ms⁻¹), ^dn: Manning's roughness coefficient. ^eQp, peak discharge, ^fCp, catchment-specific peak discharge coefficient. Difference between commercialized and non-commercialized catchment areas is significant (** P ≤ 0.01, * P ≤ 0.05)

Table 6.4 Significant correlation coefficients ^a

<i>Commercial catchments</i>	Coef.	Std.error	T	R ²	P-value
Crop land	0.046	0.011	4.22	0.75	0.006
(Constant)	4.25	0.65	6.47		0.001
Forest	-0.10	0.035	2.36	0.45	0.049
(Constant)	7.61	0.28	17.53		0.000
Vegetation ^b	-0.048	0.011	-4.19	0.77	0.007
(Constant)	8.74	0.48	18.12		0.000
Wood land	-0.08	0.15	-5.21	0.82	0.002
(constant)	8.56	0.36	23.70		0.000
RCD ^c	-1.08	0.40	-2.87	0.78	0.029
(Constant)	7.28	0.29	15.20		0.000
<i>Non-commercial catchments</i>	Coef.	Std.error	T	R ²	P-value
Crop land	0.03	0.01	3.56	0.56	0.005
(Constant)	4.05	0.22	18.55		0.000
Vegetation ^b	-0.03	0.03	-3.21	0.51	0.009
(Constant)	6.8	0.70	9.51		0.000
RCD ^c	-0.42	0.133	-2.80	0.63	0.019
(Constant)	5.25	0.03	14.33		0.000

^a Dependent variable: catchment-specific peak discharge coefficients (C_p)

^b Vegetation: the sum of forest, wood land, bamboo, and savannah

^c RCD : integrated index of forest cover and its distribution

6.3.2 Morphometric variability and effect on peak flow

Based on the comparison made using 14 morphometric variables (Table 6.5), no significant difference found between the two groups of the catchments except for one variable (i.e., ruggedness number). The non-commercialized catchments have a significantly higher ruggedness number (mean = 243, SD = 424) than the commercialized ones (mean = 32.7, SD = 32.39). The result implies that commercial farmers were wise enough in choosing relatively less rugged terrains (investment land) which are more suitable for mechanized farming while traditional farmers were pushed to relatively rugged topographies. With the intention of providing improved public services, parallel to the land commercialization process, government resettled scattered villages to designated settlement sites through a regional villagization programme. Catchments which farmers left following the villagization scheme was leased to investors. Later, resettled villagers have begun abandoning the resettlement sites and started returning to their original villages and have

recently started reclaiming leased lands. Consequently, tension between investors and local communities has increased.

Correlation between all the independent variables with catchment-specific peak discharge coefficients (C_p) was examined. It was found that none of the morphometric variables have significant ($P \leq 0.05$) correlation with catchment-specific peak discharge coefficients (C_p). This result is different from studies which were conducted in other areas, of course with a relatively higher undulating topographic features (El-Hames, 2012) and where the contrast in land management is less pronounced than in our case.

Table 6.5 T-test on basic morphometric characteristics of catchments

Morphometric Variable	Commercialized			Non-commercialized		
	Min-Max	Mean (n = 8)	SD	Min-Max	Mean (n = 12)	SD
Area (km ²)	0.40-3.07	1.69	0.89	0.32-15.48	4.35	4.46
Perimeter (km)	2.37-7.71	5.41	1.69	2.77-21	8.85	5.48
Stream length (km)	0.37-5.48	3.37	1.72	0.60-38.96	9.59	11.14
Catchment length (km)	0.83-3.09	2.25	0.73	1.14-8.77	3.55	2.33
Length of main channel (km)	0.60-2.98	1.79	0.87	0.60-8.35	3.52	2.53
Drainage texture	0.16-2.20	1.03	0.66	0.33-3.54	1.36	0.88
Drainage density	0.93-3.95	2.03	0.91	0.94-3.44	2.24	0.77
Infiltration number	0.70-35.26	8.95	11.00	2.22-22.06	8.68	6.06
Overland flow length	0.46-1.97	1.01	0.46	0.47-1.72	1.12	0.38
Compactness coefficient	1.05-1.30	1.20	0.08	1.1-1.55	1.30	0.15
Hypsometric integral	0.25-0.52	0.42	0.09	0.17-0.64	0.45	0.12
Ruggedness number	3.70-82.93	32.70*	32.39	9.51-1550	243*	424
Catchment slope gradient (mean)	0.01-0.01	0.01	00	0.01-0.07	0.03	0.02
Time of concentration (minute)	15.46-43.14	31.2	8.07	8.72-84.60	40.05	25.54

Difference between commercialized and non-commercialized catchment areas is significant (* $P \leq 0.05$)

The percentages of vegetation cover, cropland cover and integrated index of forest cover and its distribution (RCD) have substantial control on C_p . These independent variables which demonstrated substantially meaningful relations with C_p were combined in multiple regression equations. Though ruggedness number (R_n) does not have a significant

correlation with Cp and as it is the only variable with which the two groups of catchments are significantly different, we consider it for running the multiple regression. Therefore, Cp can be explained as a function of RCD, percentage of crop land cover (CL), and ruggedness number (Rn). Variance inflation factor (VIF) was checked to avoid any multicollinearity problem. The statistical rule of thumb is variance inflation factor (VIF) should not be greater than 10 (O'Brien, 2007). We found VIF of 3.45 and 1.41 for equation 17 and 18 respectively. Finally, the regression equations become:

$$Cp_{\text{commercial}} = -0.23RCD + 0.06CL + 0.16Rn - 3.02, R^2 = 0.90 \quad (17)$$

$$Cp_{\text{non-commercial}} = -0.16RCD + 0.03CL + 0.001Rn + 4.3, R^2 = 0.81 \quad (18)$$

The two regression results reveal that the catchment specific coefficient (Cp) can be explained and determined by joint effect of the percentage of the cropland cover, of the ruggedness number (Rn), and inversely of the integrated index of forest cover and its distribution (RCD).

6.3.3 Sediment concentration and commercial land clearing

According to the observation, we had during the sediment sampling endeavour, suspended sediment concentration (SSC) values are higher at the beginning of the rainy month (early July) and gradually decline (after the first week of August). An important reason for this is the combined effect of low vegetation and ploughing at the beginning of the rainy season than later. The river draining Abraham, representative for the commercialized catchments has a significantly higher SSC ($P \leq 0.01$) (mean = 6.44 g l^{-1} , SD = 2.23 than Aybon, a typical non-commercialized catchment (mean = 2.77 g l^{-1} , SD = 2.31). At both catchment outlets, the sediment concentration increases with increasing rainfall, but it stays smaller, on average by 3.67 g l^{-1} for the catchments with traditional farmlands (Figure 6.5). Evidence from catchments in semi-arid tropical highlands of northern Ethiopia indicated mean SSC of 3.06-11.96 g l^{-1} (Vanmaercke *et al.*, 2010). Land use is a leading factor which controls soil erosion and SSC (Hooke, 2000; Leopold, 1956; Syvitski & Kettner, 2011). Availability of bukuna (i.e., fallow lands), better vegetation cover and absence of mechanized farming contributed for a significantly lower SSC across catchments of traditional farmlands. Besides, the role of roots that remain after burning probably contributed to low soil erosion in the traditionally cultivated Gumuz lands whereas, in the deeply ploughed commercial farms, the roots are destroyed. There us scientific literature

about the role of roots in minimizing soil erosion. For instance, de Baets *et al.* (2007), Ghidey & Alberts (1997), and Mamo & Bubenzer (2001).

Exposition of upstream catchments to commercial agriculture resulted in a higher sediment concentration, which is in line with the findings by Mekonnen *et al.* (2014), Alemayehu (1992), Hurni (1983), and Joyce (1943). In contrast, vegetation cover can buffer sediment transport into streams in contrast to deforested catchments (Birkinshaw & Bathurst, 2011). Therefore, deforestation followed by soil erosion is the primary process which is happening along the catchments and resulting in the higher suspended sediment concentration of streams in the study areas which results in the threat of siltation to the GERD. As we have observed in the field, the application of fire for clearing farmlands frequently led to fire in both types of catchments.

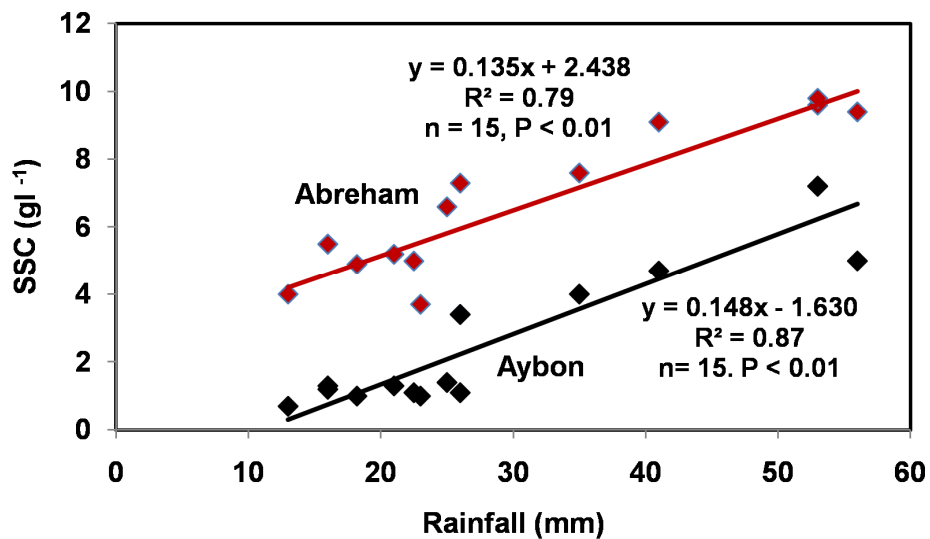


Figure 6.5 Suspended sediment concentration vs event rainfall in the twin catchments (Abreham with large commercial farming activities and Aybon with traditional land management)

Despite the fact that there is frequent wildfire on traditional farming, sediment concentration is higher in catchments draining commercial farms, as in the latter case vegetation barriers are almost absent. In addition to a presumed loss of biodiversity, wildfire has a long-term alteration of the physical, chemical and biological properties of soil (Verma & Jayakumar, 2012). Besides, uncontrolled forest fire results in burnt soils which ultimately compromises soil health (Fernández *et al.*, 2007). Though fire is

commonly used to clean their farms, traditional farmers, on the contrary, are better in applying buffer strips and fallowing. Though commercial farmers agreed to provide proper care for the land and to respect contour ploughing and the rule of 50 m buffer strip on their plots, a few of them use natural conservation belts and vetiver grass (*Chrysopogon zizanioides*). Companies agreed to conduct environmental impact assessment and deliver the report within three months from the signed date of the lease contract, yet none of them did it; there is a limitation in enforcing conservation rules. Obligations of rural land users are stated in the national constitution (GoE, 1995), the rural land administration and use law, Proclamation no.456/2005 (GoE, 2005) and the regional land use proclamation, Proclamation no.85/2010 (GBGR, 2010). According to the laws, a rural land holder is obliged to protect his land from damage; failure to do so results in an immediate loss of land use right

6.4 Conclusions

The runoff response and sediment transport in 20 sample catchments with a contrasted intensity of commercial farming was investigated. Results indicate that the commercialization of Ethiopia's savannah woodlands to both foreign and domestic companies significantly rose annual peak discharges. Catchments which are under pressure from commercial farms had a significantly higher suspended sediment concentration compared to the non-commercial land uses. While downstream communities are at risk of flooding, Ethiopia's mega hydropower station, the Grand Ethiopian Renaissance Dam (GERD) is at a threat of siltation and irregularity in the flow. We have noticed the importance of land-cover in effectively predicting peak runoff while morphometric parameters are relatively defective in explaining such a response in the catchments with undulating topography in the lowlands. We found that the integrated index of forest cover and its distribution (RCD) could be a better predictor variable for the catchment-specific peak discharge coefficient (C_p) than forest cover alone.

Soil erosion is often considered as one of the central processes of land degradation and can be used as a desertification risk indicator (Darkoh, 1998; Sterk, 2003; Vanmaercke *et al.*, 2011), and hence, the results are parts of the warning to retard desertification. The smallholder traditional farmers are still better in controlling erosion than large-scale

commercial farmers. “The Ethiopian farmer, however, is erosion minded. Evidence of this is visible all over the country” (Joyce, 1943: 36). Land degradation is contextual (Warren, 2002), and hence, both in-situ conservation and sediment trapping can play a role to reverse the situation (Mekonnen *et al.*, 2014). Besides, inclusive and legitimate land deal processes with the enforcement of land conservation laws could play a part towards sustainable land use practices (Dereje *et al.*, 2015). Further with a continuous gauging and the analysis of spatio-temporal variability of runoff and sediment transport will increase the understanding of the low-lying catchments at Ethiopia’s western margins and the effects of these processes on the GERD.

6.5 References

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Chapter 7 Commercial land deals and the interactions between investors and local people: Evidence from Western Ethiopia

Adapted from Dereje, T., Nyssen, J., Azadi, H., Lanckriet, Mitiku, H., Witlox, F. (2016). *Commercial land deals and the interactions between investors and local people: Evidence from Western Ethiopia*. Submitted.

Abstract The study explores transnational land deals from a regional perspective and investigates investor-local people interactions and the factors that underpin them. Empirical analysis utilizes survey data from the Benishangul-Gumuz region, a topographically low-lying region of Ethiopia. Descriptive statistics and an ordinal regression model (ORM) was used to analyze data. In this study, we explored the factors that determine investor-local people interactions (ILPI) with possible dyadic outcomes, which range from confrontation to collaboration. Notwithstanding the conventional centre-periphery discourses on availability of ‘unutilized’ cultivable lands, findings show that land is already under the pressure of competing demands in the region for transnational and local, private and government, and small-scale and agro-industrial purposes. We have observed that the investor-local people interaction is a complex construct influenced by multiple socioeconomic, managerial, and governance-related factors. While community consultation, land use class, local employment, and development of water sources (i.e., boreholes) have a significant effect upon ILPI, the influence of other factors such as compensation for expropriated property and the farm’s distance from a community village are observable, but insignificant. Consideration of the factors which underpin investor-local people collaborative interaction and synchronizing existing land uses and prioritizing competing demands for land is important. It is essential to build the regional capacity with an outlook that supports inclusive local development.

7.1 Introduction

The soaring global prices for agricultural commodities coupled with the desire to meet the needs of domestic consumption in net food importing countries has exacerbated the demand for large swatches of arable land (Cotula *et al.*, 2009; Osabuohien, 2014; Vandergeten *et al.*, 2016). Likewise, the rising need for clean energy sources in response to climate variability (Corson & MacDonald, 2012) has driven companies and governments away from advanced and emerging economies in order to mobilize capital and acquire large tracts of land. Thus, the inundation of financial market-food-energy-climate crises and the desire for biofuel (Hassan & Kalam, 2013) have fuelled the rising interest in land. Finally, but most importantly, governments of developing nations wish to attract foreign direct investment (FDI) as part of their strategy to gain momentum for their growing economies (Dereje *et al.*, 2016a; Lavers, 2012a; Vandergeten *et al.*, 2016).

Developing countries, such as Ethiopia, are examples that of when the government has played a determining role in promoting the supply of investment land and re-engineering the intricacies related to the country's investment and business licensing (Dereje *et al.*, 2016b; 2016c). As long as the trend of acquiring further swatches of arable land persists, the number of land deals will continue to rise. Large-scale commercial land acquisition, however, is rife with debate, hype, and scepticism; most fearing that it may not provide the intended results (Boamah, 2014; Hall, 2011). Correspondingly, the debate has received widespread attention by media outlets.

In Ethiopia, a case in point for this chapter, preliminary evidence is still emerging. For example, Maru & Rutten (2015) explored the supposition that the commercialization of farms on a large scale basis adversely affected the local people in Oromia region. The contributions made so far, approached the interactions in large-scale land acquisition unidirectionally. That is, there was no 'cooperation' on the part of local populations in terms of commercial land acquisition (Borras & Franco, 2013). However, in reality, cooperation is possible between commercial farmers and local people which, in all likelihood, would have a positive outcome; a win-win situation as a result of a (Azadi *et al.*, 2013) conceivable inclusive land deal (Dereje *et al.*, 2015) scenarios. The types of investor-local people dyadic interactions (ILPI) and the factors that underpin them, remain

unknown. Knowledge about the local level of interaction between large-scale commercial companies and residents is, therefore, necessary to better understand global land deals vis-à-vis with local development processes. The contribution of local institutional frameworks (in our case the regional constitution) in addressing investor-local people interactions is also explained.

7.2 Study area and methodology

7.2.1 Study area

The Benishangul-Gumuz region of Ethiopia is the case study area. It is a low-lying peripheral region, located between the plateau of Injibara, i.e., the western escarpment of the Ethiopian highlands, and the Sudanese and South-Sudanese borders; between 9°10' – 11°30'N and 34°00' – 36°00'E (Figure 7.1). The region is one of the nine regional states which was established in 1995 according to the federal constitution of Ethiopia (GoE, 1995). Topographically, the area is 580-3131 meters above sea level (m a.s.l.), and predominantly consists of lowland. There are a few mountain ranges, namely, the Belaya and Dangure mountains which are isolated from the rest of the Abyssinian highlands by the deeply incised Nile valley (Kuls, 1962), as seen in Figure 7.2. Among the big rivers of Ethiopia, four cross the region: the Blue Nile, Beles, Dabus, and the Didesa.

Kuls (1962) noticed that the area is quite different from the highlands, which were largely deforested and is primarily made up of bare arable land and pasture surfaces, while dense savannah woodlands more or less cover the entire lowland closer to Beles river. Recently, however, vegetation in the area is under severe pressure, especially following large-scale agro-industrial projects and encroachment (Dereje *et al.*, 2016a). Shifting cultivation (with slash and burn practices), subsided with gathering, hunting, fishing, and the production of honey as the primary livelihood strategies of the indigenous communities (Kuls, 1962, Abdussamad, 1995; Dereje *et al.*, 2016b). Furthermore, communities in the region engaged in traditional gold mining activities and have recently been able to generate employment on commercial farms.

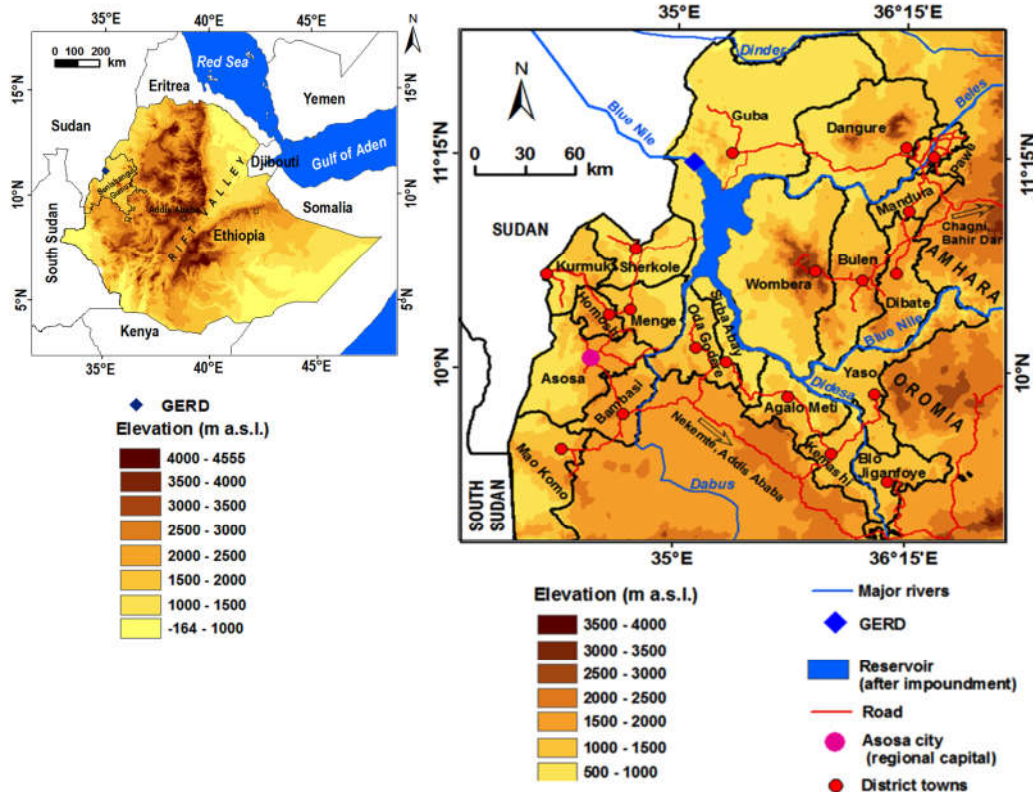


Figure 7.1 Location and altitude map of the study area (the Benishangul-Gumuz region)



Figure 7.2 Partial view the study area, the Karinchachi ranges located between mount Belaya and mount Dangure

(Approximate elevation is 990 m a.s.l for the Gumuz farmlands in front and 2200 m a.s.l in the ridges).

While several ethnic groups inhabit the region, none of them constitutes more than 50% of its overall population. With an estimated area of 50,700 km² (BoFED 2011), the

Benishangul-Gumuz region has twenty districts. According to the census in 2007, the regional population was 784,345, forming 174, 445 households (CSA 2010). According to the regional constitution, there are two broad groups of communities (or ethnic groups), the titular and the non-titular community (or ethnic) groups; considering the former as ‘native to the region’ and others not. Accordingly, while the Bertha, Gumuz, Shinasha, Mao, and Komo are titular members of the region, the Amhara, Oromo, Agaw-Awi, Tigrie, and many others are non-titular (GBGR, 2002).

7.3 Methodology

7.3.1 Data sources

The study used a mixed-method approach that encompasses both quantitative and qualitative measurements (Creswell, 2003). There were fifteen key informants (i.e., one from each of the fourteen districts where transnational investors operate and one from the region) whose responsibilities are attached to both conventional and commercial farming. Furthermore, the study triangulated key informant information with survey results which were carried out in order to identify investor-local people interactions and to explore the factors which determine interaction status. We examined the land deals that are transnational (i.e. foreign and Ethiopian diaspora investors) and operated at a large-scale, i.e., farmland deals of 200 ha and above (Dereje *et al.*, 2016c; Rulli *et al.*, 2013) and that have already started operation. A sample of 64 cases of investor-local people interactive were randomly drawn from a list of 76 large-scale transnational investors who held certified land deals and who are currently operating. The sample size was determined using Yamane’s formula (Yamane, 1967).

$$n_1 = \frac{N_1}{(1 + N_1 X(e)^2)} \quad (1)$$

Where, n_1 is the sample size (number of investors who were considered for the investor-local people interactive study), N_1 is the population of large-scale transnational investors, and $e = 0.05$ (i.e., percentage of the impression of sampling error that can be tolerated).

7.3.2 Data analysis

7.3.2.1 Investor-local people interaction (ILPI) outcome: conceptual and operational definition

Previous studies with ordinal outcome variables heavily relied on multiple regression models in order to investigate the relationships between an ordinal outcome variable and explanatory variables, as in the case of Ellickson & Logsdon (2002) and Pincus (1986). Local resistance to and cooperation with the large-scale land acquisition and stakeholder interactions (Dereje *et al.*, 2015; Tsegaye, 2015; Schneider, 2011; Toulmin, 2009; Luo, 2002) were useful when establishing the framework of our study on a 5-point ordinal scale. Furthermore, dyadic relationships can be drawn in an ordinal range of outcomes (Robbins & Judge, 2011; Balsler, 1999; Luo, 2002).

Ordinal outcomes represent the categorical outcomes where there is clear low to high natural ranking among the outcomes, but the distance between adjacent categories is unknown (Wooldridge, 2009). Furthermore, as explained by Leedy and Ormrod (2016), phenomenology is a useful tool to understand perspectives, perceptions, and views of a particular phenomenon (in our case the investor-local people interaction) by which the researcher(s) can deduce what something looks like based on insider's point of view. According to Leedy and Ormrod (2016), a phenomenological study is one that seeks to understand people's perspectives, perceptions, and views of a particular phenomenon. Additionally, Creswell (2003) considers phenomenological studies to be a critical approach to describe the meanings of the lived experiences of a situation, concept, topic, or issue.

In modelling, numerical values are assigned to such outcomes, but the numerical values are ordinal and only reflect the ranking of the results (Mckelvey & Zavoina, 1975). Similarly, we can assign a dependent variable, 'y', with the values 1 for "disputed", 2 for "latent", 3 for "conformist" investor-local people interactions in order to define each possible categorical outcome.

(i) *Outcome 1 (dispute)*: the prevalence of a disagreement or argument between investor and local people but that does not reach a level of hostility or conflict. For a disputed outcome, at least either one point of dispute or confrontation is recorded locally.

(ii) *Outcome 2 (latent)*: a situation between dispute and confirmatory relationship with no traceable evidence is scored that indicates the existence of a dispute and confirmatory relationship.

(iii) *Outcome 3 (conformist)*: there is evidence indicating that locals confirm the investors as a legal business entity that operates in the farming sector or cooperative or positive towards the investor.

We determined the variables (Table 7.1) which could possibly underpin the investor-local people interactive outcome. After the reviewing the literature on local reactions to land acquisition and a basic understanding of the phenomenology of land acquisition the Benishangul-Gumuz region, we synthesized the factors that could possibly determine local reactions to the large-scale transnational agricultural investors. In combination with repeated field visits, the role of previous contributions of Baum and Helaine (1999), Schneider (2011), Borrás and Franco (2014), Tsegaye (2015), Dereje *et al.* (2015), Stephens (2013), and World Bank (2010) were indispensable.

7.3.2.2 Defining the explanatory variables

We solicited the variables (Table 7.1) which possibly underpin the investor-local people interactive outcome.

Table 7.1 Variables summary and expected sign in relation to the outcome variable-collaboration

Variables	Expected sign	Explanation for variables
Administrative variables		
Compensation for displacement or for expropriation (comp)	+	1 if no displacement or if displacement and compensation is made in 6 months, 0 otherwise
Community consultation (cons)	+	Number of community consultations made
Land use before delivered for investor		
Preceding predominant land use classes (Lndu)	-	1=Former village, 2= <i>bukuna</i> (fallow) or crop land, 3= forest, 4 = woodland, 5 = savannah, 6 = bamboo land
Location variables		
Distance from the nearest village (Dnv)	-	Distance of the farm's camp from (km)
Key personnel's managerial attributes		
Level of education (Educ)	-	Investor's key personnel's (i.e. the one who is in charge of farm level operations) level of education in years (yr)
Experience in agriculture (Exp1)	+	Number of years (yr) engaged in farming or agriculture
Managerial experience (Exp2)	+	Number of years as team leader or above
Operational variables		
Size of land occupied (Slo)	-	Size of land the investor occupied (ha)
Year of operation (Yop)	+/-	Number of years since the investor has started cultivation (years)
Development of boreholes (Dws)*	+	1 if the investor developed a borehole for its farm and/or camp, 0 otherwise
Employment for local people (Elp)*	+	Number of villagers employed permanently
Employment for migrant people (Emp)*	-	Number of migrant permanent employees
Community support program		
Road construction (Roc)*	+	Size of all weather road constructed by the investor (km)
Number of rooms constructed (Nrc)*	+	Number of rooms (school, health post, offices, centres, etc) constructed by the investor (s)

[†]Arranged based on local key informant; * values are normalized per the size of land occupied (Slo) to determine coefficients, ratios and marginal effects of the variables indicated.

7.3.2.3 Model specification

Ordered models, specially ordered logit and ordered probit models are more suitable to predict outcomes of the type we stated above (Greene, 2012). According to the generic regression function:

$$y_i^* = \mathbf{x}_i\beta + \varepsilon_i, \quad (2)$$

Where y_i^* is the unobservable value of the dependent variable, \mathbf{x}_i is a vector of variables that explains the variation in the observed dependent variable; β is a vector of coefficients; and ε the disturbance term. If the unobservable (latent) variable y^* denotes a natural ordering among the possible outcomes, then the observed dependent variable can assume a data generating process of the following type:

$$y = \begin{cases} 1 = \text{disputed} & \text{if } y_i^* \leq \mu_1 \\ 2 = \text{latent} & \text{if } \mu_1 < y_i^* \leq \mu_2 \\ 3 = \text{conformist} & \text{if } \mu_2 < y_i^* \leq \mu_3 \end{cases} \quad (3)$$

Where y_i is the observed score for the dependent variable ‘investor local people interaction (ILPI)’, μ_i are the threshold parameters to be estimated along with β , and ε_i is assumed normally distributed.

The probability that $y_i = 1$ is presented as

$$\begin{aligned} \Pr(y_i = 1) &= \Pr(y_i^* \leq \mu_1) = \Pr(\mathbf{x}_i\beta + \varepsilon_i \leq \mu_1) \\ &= \Pr(\varepsilon_i \leq \mu_1 - \mathbf{x}_i\beta) = \Phi(\mu_1 - \mathbf{x}_i\beta) \end{aligned} \quad (6)$$

The probability that $y_i = 2$ is presented as

$$\begin{aligned} \Pr(y_i = 2) &= \Pr(\mu_1 < y_i^* \leq \mu_2) = \Pr(\mu_1 < \mathbf{x}_i\beta + \varepsilon_i) \times \Pr(\mathbf{x}_i\beta + \varepsilon_i \leq \mu_2) \\ &= \Pr(\varepsilon_i < \mathbf{x}_i\beta - \mu_1) \times \Pr(\varepsilon_i \leq \mu_2 - \mathbf{x}_i\beta) \\ &= \Phi(\mu_2 - \mathbf{x}_i\beta) - \Phi(\mu_1 - \mathbf{x}_i\beta) \end{aligned} \quad (7)$$

The probability that $y_i = 3$ is presented as same procedure as equation 7

Using these probability outcomes, the log-likelihood function for final outcome (i.e., ILPI) estimation can be composed as:

$$\begin{aligned} L &= \Pr(y_i = 1) \times \Pr(y_i = 2) \times \Pr(y_i = 3) \\ \ln L &= \ln[\Pr(y_i = 1)] + \ln[\Pr(y_i = 2)] + \ln[\Pr(y_i = 3)] \end{aligned} \quad (8)$$

which gives rise to:

$$\ln L = \sum_{y_i=1} \ln[\Phi(\mu_1 - \mathbf{x}_i\beta)] + \sum_{y_i=2} \ln[\Phi(\mu_2 - \mathbf{x}_i\beta) - \Phi(\mu_1 - \mathbf{x}_i\beta)] + \sum_{y_i=3} \ln[\Phi(\mu_3 - \mathbf{x}_i\beta) - \Phi(\mu_2 - \mathbf{x}_i\beta)] \quad (9)$$

Supposing that the probability for the investor-local people interaction (ILPI) outcome level is $P_i = P(y = i/x)$. Then the proportional odds model (POM) is useful when analyzing ordinal outcomes (Wooldridge, 2009), and involves fitting a set of equations for cumulative distribution probabilities of the outcome categories, which is:

$$\frac{P(y \leq j/x)}{P(y > j/x)} = \exp(\alpha_j - \beta^r x), \dots j = 1, 2, 3 \quad (10)$$

Where $P(y \leq j/x)$ denotes the conditional probability of having the most desired j level of interaction provided by a vector of covariates x , $P(y > j/x)$ is the probability of an interaction level being above the level j , β^r is a column vector of coefficients and the unknown parameters α satisfy $-\infty \leq \alpha_1 < \alpha_2 < \alpha_3 \leq +\infty$. The regression coefficient β_i for the i^{th} explanatory variable x_i , is the odds-ratio for the y by x_i association, *ceteris paribus*. The model presumes that the relationships between x and the dichotomized y do not depend on the category j , the point at which the dichotomization in the POM is constructed, and this implies that β_i for the i^{th} explanatory variable, values for x_i do not depend on j . It is named as the proportional odds model due to the assumption of similar odds ratios across the categories (McCullagh, 1980). Moreover, marginal effects of an increase in a covariate, i.e., an explanatory variable x_i , on the probability of increasing (or decreasing) investor local people interaction (ILPI) outcome level to alternative j was derived using:

$$\partial p_{ij} / \partial x_{ri} = \{F'(\alpha_{j-1} - x'_i \beta) - F'(\alpha_j - x'_i \beta)\} \beta_r, \quad (11)$$

Where $\partial p_{ij} / \partial x_{ri}$ refers to the marginal effect of a change in regressor x_i on the probability of achieving j level of ILPI outcome and F is the logistic cumulative distribution function (cdf), and β_r is the coefficient.

Stata-11 was used to analyze data. Before interpreting the results, model fitness was checked. Including the test for independence of irrelevant alternatives (McFadden, 1987), all assumptions relevant to the application of ordered logistic regression were met and conceivable explanatory variables were incorporated into the model

7.4 Results

7.4.1 Land deals in the Benishangul-Gumuz region

Large scale transnational land deals and land supply in the region were provided by two lessors: by the federal government through Ministry of Agriculture (MoA) and by the regional government of Benisangul-Gumuz through its investment bureau.

Table 7.2 Land transferred to federal land bank from the Benishangul-Gumuz region

Zone/Special district/	District	Land size (ha)	Time
	Dangure	31,000	First round*
Metekel	Pawe	2,200	(11December 2008)
	Sherkole	163,930	
Asosa	Kurmuk	81,930	Second round*
	Menge	52,582	(22 October 2011)
Kemashe	Sirba Abay	44,899	
Mao komo special district	Mao komo	80,527	
Total		457,068	

* Contracts signed between MoA and Government of the Benishangul-Gumuz region

Following the request of the federal government of Ethiopia, the Benishangul-Gumuz region is one of the regional states that submitted 'potentially available unoccupied' land for investment to the federal land bank in two rounds (Table 7.2). The federal land bank was supplied with 457,068 ha of land and operates under the Ministry of Agriculture, meaning that the ministry leases to investors on behalf of the region. In addition to the stated figure, the regional government leased land on its own way to investors, usually called 'non-federal investors.'

Regarding the number of investors and the amount of land commercialized in the region, the figures change frequently as data is updated following further land acquisition, validation of farmlands on the ground, investors abandonment of investment operations', government decisions on using the land for other purposes, etc. According to data accessed in June 2012, a total of 600,254 ha of land was 'allotted' to 306 investment projects

(Dereje *et al.*, 2016a), as shown in Table 7.3. However, the land was ‘allocated’ with limited validation on the ground and with some later changes in figures.

Table 7.3 Distribution of agricultural investment projects the Benishangul-Gumuz region

Sn	Project location (Districts)	Number of projects			Land size (ha)		
		Domestic	Transnational ¹	Total	Domestic	Transnational	Total
1	Agalo Meti	1	-	1	60	-	60
2	Asosa	12	4	16	3680	10918	14598
3	Bambasi	2	5	7	1490	3120	4610
4	Blojiganfoye	12	2	14	8771	15360	24131
5	Bulen	3	-	3	9030	-	9030
6	Dangure	16	15	31	26770	79980	106750
7	Guba	78	39	117	45246	153174	198420
8	Homosha	2	1	3	3200	1300	4500
9	Mandura	4	-	4	2100	-	2100
10	Maokomo	30	7	37	19735	15015	34750
11	Menge	10	4	14	16055	8645	24700
12	Oda Godere	26	4	30	18072	4828	22900
13	Pawe	6	5	11	13675	114570	128245
14	Sherkole	2	2	4	1635	9365	11000
15	Sirba Abay	1	1	2	600	400	1000
16	Wombera	3	-	3	1160	-	1160
17	Kurmuk	1	-	1	5000	-	5000
18	Yaso	5	3	8	7300	-	7300
Total (June 2012)		214	92	306	180 072	420182	600,254
Total (March 2015)		198	79	269	89239	189634	278,873

Source: Own computation from databases at MOA, and Investment Bureau (Benishangul-Gumuz region)

¹Transnational projects comprises both Ethiopian diasporas and foreign companies

While 600, 254 ha (computed to 2012) was allotted to investors, 420,172 ha (i.e.,70%) has been put on leasehold by transnational investors and domestic investors have occupied 180,072 ha (Table 7.3). Later, in 2015, the total amount of land under investors' leasehold in the region was 278,873 ha, from which large-scale transnational investors (Ethiopian diasporas and foreign companies) occupied 189,634 ha (i.e., 68%), Table 7.4.

Table 7.4 Large scale transnational investors in the Benishangul-Gumuz region
(March 2015)

SN	International companies	Origin	land(ha)
1	Sun Biofuel PLC	UK	(80,000) ¹
2	S&P Energy Solutions PLC	India	50,000
3	Halwan Adnan	Sudan	5000
4	Hashim Ismael Farm	SaudiArabia	3000
5	Lotes International	SaudiArabia	3000
6	Usman Esa Farm	SaudiArabia	1000
7	Yeshimebet Farm	UK	1000
8	Habi Hotel PVT LTD Company	USA	700
9	Feridem Agri Development	USA	650
10	Michael Dismod Agricultural Investment	Turkey	377
11	Horizon Plantation Ethiopia PLC	Saudi-Arabia	20,000
12	CLC Agro-Industry PLC	India	25,000
Land leased by international companies			189,727
Land leased by 71 diaspora investors			169,146
Total land leased to transnational investors²			358,873
Sun biofuel (quit operation)			(80,000) ¹
Total land currently leased by transnational investors			278,873

Source: Own computation from databases at MOA, and Investment Bureau (Benishangul-Gumuz region) ¹The company has abandoned operation. ²From 83 transnational investors, 74 are on operation, the remaining 9 investors are with unknown status.

7.4.2 Investor-local people interactions and determinants

The predicting variables and the investor-local people interactive (ILPI) outcomes are summarized in Table 7.5. As shown, there is a large variation regarding the land size among investors. Of the cases under conformist ILPI, 64% either did not receive land compensation for displacement or expropriation within six months of their land being appropriated, if expropriation had occurred. In contrast to the 36% of the cases of disputed ILPI (Table 7.5), while some other tendencies include that either conformist or collaborative relationship increases with distance from village or construction of assets that can be used by the community. The significance of such relationships and their combined effect will be addressed further in this section.

Table 7.5 Averages of predictor variables by Investor-local people interactive outcomes

Predictor variable	Investor-local people interaction (ILPI) outcomes		
	Disputed	Latent	Conformist
ILPI outcome (%)	56	22	22
Compensation	0.36(0.49)	0.79(0.43)	0.64(0.50)
Consultation	2.69(1.83)	3.50(2.18)	3.86(1.70)
Land use class	2.53(1.32)	4.00(1.36)	4.64(0.74)
Distance from village (km)	2.83(2.04)	4.79(2.97)	7.00(2.00)
Education level (yr)	6.89(3.99)	10.29(4.29)	13.50(2.71)
Agricultural experience (yr)	9.19(4.44)	10.00(4.62)	9.21(4.23)
Managerial experience (yr)	1.00(1.64)	1.21(2.39)	1.36(1.08)
Land size (ha)	970.64(1177.64)	4051.80(13226.40)	2520.29(6518.90)
Years of operation	7.58(1.76)	7.86(1.66)	8.00(1.47)
Developed borehole	0.19 (0.40)	0.57(0.85)	0.57(0.51)
Employees (local)	0.81(0.79)	1.71(1.98)	2.50(1.16)
Employees (non-locals)	5.00 (2.08)	5.21(4.35)	5.64(2.76)
Road construction (km)	2.69(1.28)	2.93(3.38)	4.57(2.95)
Rooms constructed	0.36(0.76)	0.79(1.67)	2.36(1.65)

The numbers in brackets are standard deviations

22% of the investors are operating in a conformist relationship with local community, implying that there are substantial agreements between them and that, most importantly, local communities perceive investors positively and in some cases collaborate with their investment operations (Table 7.5). For instance, the local people collaborate by shifting their grazing places, contribute labour during land preparation and construction of local facilities, such as roads, investor's camp establishments, etc.

The other type of investor-local people (ILIP) outcome, about 22% are in latent situations, i.e., when the relationships are neither in agreement nor disagreement. Such interactions may remain as they are or can be improved to conformist stages or may worsen into a disputed relationship depending on local conditions and the investors' activities through time. Disputed relationships constitute 56%, implying that more than half of the community-investor interactions are characterized by the prevalence of disagreements between investors and local people. In the case of disputed relationships, the basic causes are sets of unmet interests or postponed promises among the local community as was notified to the investor, local, and district administrative bodies. The confrontation scenario is characterized by the loss of property, physical attacks, and sometimes the loss of life.

Table 7.6 Determinants of investor-local people interaction: ordered model coefficients

Covariate	Ordered logit coefficient		Ordered probit coefficient	
	Coefficient	SE ¹	Coefficient	SE ¹
Compensation	0.161	1.453	0.160	0.771
Consultation	1.260**	0.610	0.557**	0.283
Land use class	1.124**	0.489	0.512**	0.234
Distance from village (km)	0.446*	0.345	0.273*	0.176
Education level (yr)	0.310	0.193	0.143	0.093
Agricultural experience (yr)	-0.188	0.220	-0.084	0.107
Managerial experience (yr)	0.392	0.534	0.221	0.280
Land size (ha)	-0.0002	0.0001	-0.0001	0.0001
Years of operation	0.060	0.506	0.019	0.246
Developed borehole	2.157*	1.155	1.087*	0.587
Local employment [Le/ SI ²]	2.424**	1.021	1.206**	0.503
Non-local employment [NLe/SI]	-1.148**	0.546	-0.509	0.255
Road constructed [Rdc/SI]	1.062	0.600	0.434	0.276
Room constructed [Rmc/SI]	0.032	0.756	0.084	0.386
Intercept 1	11.517**	5.780	5.803**	2.732
Intercept 2	18.950**	7.638	9.482**	3.454
Wald chi-square (14)	99.26***		99.12***	
McFadden's R ² (i.e., Pseudo R ²)	0.792		0.781	

¹SE = Standard error; ²SI = size of land leased to an investor; *, **and *** implies significant at 10%, 5% and 1% level of significance respectively.

Table 7.6 summarized the results of the investor-local people interactive (ILPI) model outcome. The model chi-squares are higher, with 14 degrees of freedom; implying a highly significant output and the presence of predictors with a significant effect upon the outcome variable, i.e., investor local people interaction (ILPI). As the intercept parameters are significantly different from each other, the five categories cannot be combined further. Community consultation, land use class, distance of farm from village, development of boreholes by investors for its farms, and local employment have a significant effect upon the outcomes of investor-local people interaction (Table 7.6). Since the logit and probit ordered model coefficients differ by a scale factor, the magnitude of the coefficients is not interpretive (Verbeek, 2012).

Table 7.7 Determinants of investor-local people interaction: ordered model odds ratio

Covariate	Odds Ratio	Standard error	95% CI
Compensation	1.175	1.707	0.068 – 20.265
Consultation	3.524**	2.151	1.066 – 11.654
Land use class	3.077**	1.505	1.180 – 8.025
Distance from village (km)	1.561*	0.546	0.787 – 3.099
Education level (yr)	1.363	0.264	0.933 – 1.992
Agricultural experience (yr)	0.829	0.182	0.539 – 1.274
Managerial experience (yr)	1.480	0.790	0.520 – 4.215
Land size (ha)	1.000	0.0002	1.000 – 1.0001
Years of operation	1.062	0.537	0.394 – 2.861
Developed borehole	8.643*	9.981	0.899 – 83.103
Local employment [Le/ SI ¹]	11.300*	11.535	1.527 – 83.581
Non-local employment[NLe/SI]	0.317	0.173	0.109 – 0.926
Road constructed [Rdc/SI]	2.892	1.735	0.892 – 9.371
Room constructed [Rmc/SI]	1.033	0.780	0.235 – 4.540
Intercept 1	11.517**	5.780	-0.195 – 22.840
Intercept 2	18.947**	7.638	3.977 – 33.917
Wald chi-square (14)	99.26***		
McFadden's R ² (aka Pseudo R ²)	0.792		

¹SI = size of land leased to an investor ;*, **and *** implies significant at 10%, 5% and 1% level of significance respectively.

To know the extent of the effects upon the ordinal outcome variable ILPI, an odds ratio is determined (Table 7.7). With an increase in the number of community consultation by a unit, the odds of achieving a conformist or collaborative investor-local people relationship increases by a factor of 3.524 (i.e., an increase of 352. 4%) with varying level of significance, *ceteris paribus*. Keeping other factors constant, land use class, distance from village, development of boreholes, and local employment have positive contributions to the odds of achieving a desirable investor-local people interaction options by a respective factors as indicated by Table 7.7. For instance, respecting local communities' pre-deal land use classes increases the odds of achieving a conformatory or positive investor-local people relationship by a factor of 3.077, assuming other variables remained unchanged. The level of effect of each variable upon the outcome variable is determined in the form of marginal effects (Table 7.8).

Table 7.8 Determinants of investor-local people interaction: Ordered logit marginal effects

Covariate	Disputed = 1 (dy/dx)	Latent = 2 (dy/dx)	Conformist = 3 (dy/dx)
Compensation	-0.033 (0.300)	0.032 (0.294)	0.00 (0.002)
Consultation	-0.255 (0.161)**	0.253 (0.160)*	0.002 (0.004)
Land use class	-0.228 (0.136)*	0.226 (0.136)*	0.002 (0.003)*
Distance from village (km)	-0.090 (0.058)*	0.090 (0.057)	0.001 (0.001)
Education level (yr)	-0.063 (0.041)	0.062 (0.041)	0.001 (0.001)
Agricultural experience (yr)	0.038 (0.047)	-0.038 (0.047)	-0.0002 (0.001)
Managerial experience (yr)	-0.080 (0.122)	0.079 (0.122)	0.001 (0.001)
Land size (ha)	0.0001 (0.0001)	-0.0001 (0.0001)	-3.95e-07 (0.000)
Years of operation	-0.012 (0.100)	0.012 (0.100)	0.0001 (0.001)
Developed borehole	-0.437 (0.301)**	0.434 (0.301)**	0.003 (0.006)
Local employment [Le/ SI ¹]	-0.491 (0.300)*	0.488(0.295)**	0.004 (0.001)
Non-local employment[NLe/SI]	0.233 (0.156)	-0.231 (0.156)	-0.002 (0.003)
Road constructed [Rdc/SI]	-0.215 (0.151)	0.214 (0.151)	0.002 (0.003)
Room constructed [Rmc/SI]	-0.006 (0.152)	0.006 (0.151)	0.0001 (0.001)

¹SI = size of land leased to an investor; *, and ** implies significant at 10%, and 5% level of significance respectively.

From Table 8, a unit level increment in community consultation helps significantly in improving investor-local people interactions through reducing the likelihood for the instances of disputes by 25.5%, *ceteris paribus*. Respecting local community's land use, and increasing investor farm distance from community villages also have contributed in reducing the likelihood of investor-local people disputes by 22.8% and 9% respectively, keeping other things constant. Development of boreholes by investors to use for their farm (rather than competing for water with local communities), and employment of local people has a significant positive contribution in establishing better or desirable investor-local people relationship. The more local people are employed, the more cooperative other community members and most importantly during investor-local people disagreement, local employs play important negotiation role before controversies are escalated. Employing non-local people has an adverse but insignificant effect on the investor-local people relationship, and the reason we got is that the non-local employees also engage in encroachment in collaboration with some local people and the issue are much more complicated than presumed.

7.5 Discussion

7.5.1 Context and land deals in the Benishangul-Gumuz region

Basically, land rights are engines for local economic growth (Rudi *et al.*, 2014). Recognizing customary land holdings positively contributes to the promotion of local governance (Biitir & Nara, 2016), equitable land management (Ubink & Quan, 2008), and less costly dispute resolution procedures (Cecchi & Melesse, 2016). Consequently, it is important to renegotiate and reform the formal statutory land regulations with age old customary landholding systems that can help in developing confidence among local communities (Van Leeuwen, 2014) and encourage optimal land use practices (Rudel & Meyfroidt, 2014).

According to the statutory law, there is a maximum and a minimum size of land that is able to be held by a household (GBGR, 2011). The minimum peasant holding being 2 ha (for rainfed farming) and 0.20 ha (for irrigation). To halt the further fragmentation of holdings,

a minimum parcel of 0.25 ha for rainfed and 0.10 ha for irrigation farming was set. The maximum peasant holding size is 5 ha (in the highlands and midlands) while it is 10 ha in the lowlands. Furthermore, polygamous lowland households were entitled to hold an additional 5 ha per wife. Especially among the Gumuz,, having more than one wife is traditional; even wives push their husbands to have more wives. Their justification for doing so correlates with Boserup's explanation of women's role in economic development (Boserup, 1970).

Communities are experiencing a statutorily driven livelihood transformation: changing completely from shifting cultivation to sedentary farming. In praxis, however, shifting cultivation has not yet been abandoned and local communities have started supporting their livelihoods by renting land (mostly without being restricted to their household holdings) to others, mainly to the highlanders of neighbouring regions. Though traditional farming practices are better at minimizing soil loss (Dereje *et al.*, 2016b), the law favours land leases made between peasants and commercial farmers, as compared to leasing to traditional farmers. "*Duration of land leases between the peasant and the lease shall be up to two years for traditional agricultural and ten years for users of modern technology*" (GBGR, 2010).

Concerning the size of commercialized land, there is a series of variations in the figures. Initially, records indicated 600, 254 ha was leased out to private investors and was later lowered to 278,873 ha in March 2015 (Table 7.3). Yet, the demand for land in the region is rising, behind which there are three basic reasons. First, even if some companies have abandoned their investment operations, , land is reallocated to the state driven projects in the region, such as the GERD and large-scale sugar development. The UK-based Sun Biofuels PLC was one of the companies which abandoned its operations. The company had signed an agreement for over 80,000 ha (Table 4) of Jatropha plantation with the initial annual lease price of Birr 25 (\approx EUR 2.38) ha⁻¹ for 50 years (Abbink, 2011). The company ceased operation after clearing 60 hectares (ha) of the experimental plantation after verifying the unsuitability of the soil for the jatropha (*Jatropha curcas*) plantation. The vertisols, i.e., heavy black soil impaired with in-depth and extensive cracks in the dry season, was the main reason that they stopped the operation. The Beles Sugar Development Project (BSDP), another investor and one of the national projects run by the state-owned Ethiopian Sugar Corporation (ESC), took over a significant amount of the

land that Sun Biofuel had abandoned (ESC, 2015). In many cases, land that was assumed to be free for investment was not actually free, but was under customary community use or was forest and wood land (Figure 7.3).



Figure 7.3 Partial topographic view of the lowlands with commercial farming at the front.

The second reason; investors who leased land closer to GERD were forced to stop investing, was that the land was required for the reservoir and buzzer zone of the dam (Figure 7.4). Most of them, however, are being provided a substitute investment land in the same region. Salini Impregilo (the Italian company which invested a major share in order to construct the dam) announced that 180 km² of land is required as a reservoir area (Salini Impregilo, 2012). According to International Panel of Experts (IPoE, 2013), the dam needs 187.4 km² for its lake area, with a reservoir that extends 246 km into the Blue Nile valleys, a full supply level of 640 m a.s.l., and a water volume of 74.01 billion m³. Construction is making good progress and plans to complete it by 2017.

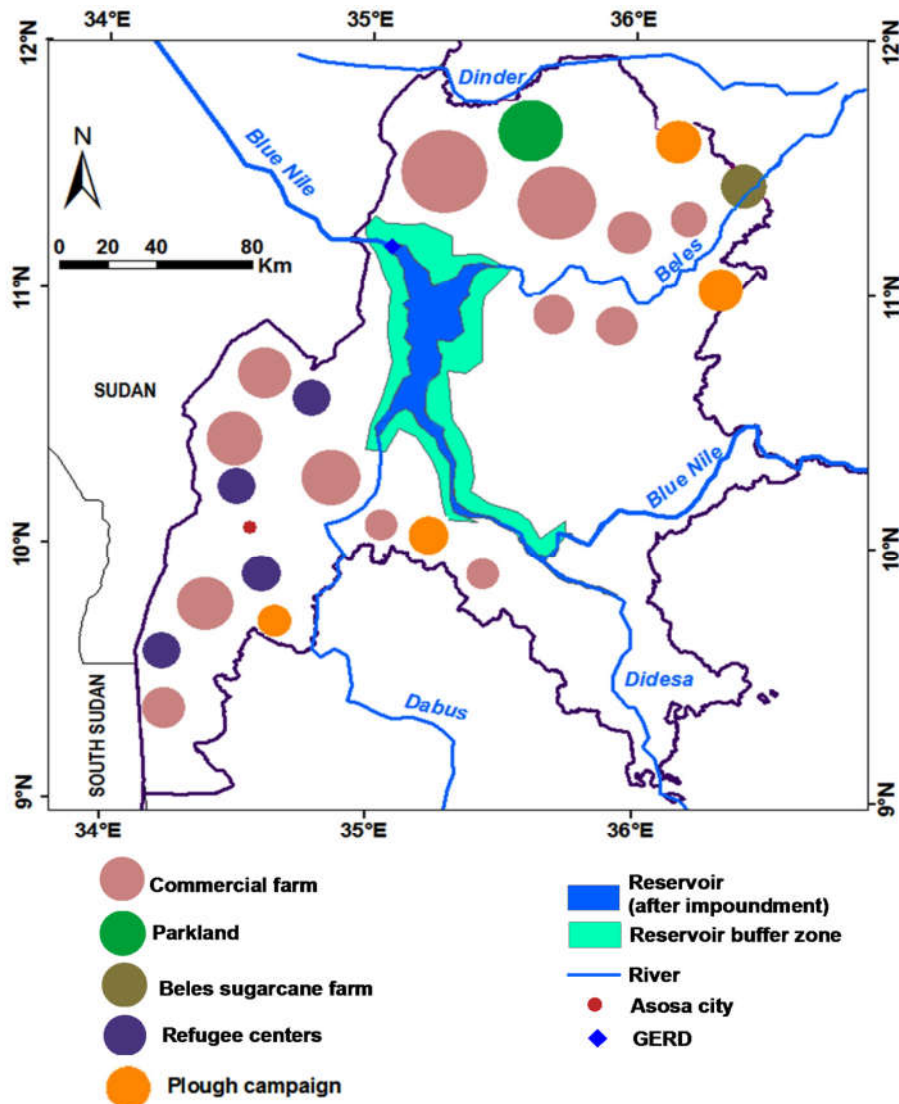


Figure 7.4 Major forces and pressure areas for land in the Benihangul-Gumuz region.

The third reason behind the competing demands for land in the region is the governments' plan to delineate parkland ecosystems in the Dangure and Guba districts of the region. The proposed park is intended to be a new biodiversity conservation and wildlife protection corridor in the Benishangul-Gumuz region. Conservationists announced the "amazing discovery" of a previously unknown lion population closer to Ethiopia's Alatish game park in the neighbouring Amhara region, closer to the Ethio-Sudanese border, in November 2015 (Bauer and Gebeyehu, 2015). Alatish has recently been set aside as a park by the Amhara regional state and it is believed to play a key role in the conservation of a major proportion of the Sahelian and Sudan-Guinea biome for birds, mammal fauna, and other organisms (Tadesse & Afework, 2008).

Both the national government and the international community were less aware of the area and considered it only as a ‘possible range’ for the species, implying that they suspected the presence of lions yet it was not confirmed (EWCA, 2012; IUCN, 2006). However, recent proof indicated the presence of elephants in the region beforehand, even around Chagni (Beke, 1844), a town in the neighbouring Amhara region. Currently elephants are limited to remote areas closer to Alatish park, which adjoins the Sudanese Dinder National Park. While performing field work, the lead author observed the variety of wildlife that inhabits the area, such as cheetahs, Mantled guereza (i.e. the Abyssinian black-and-white colobus which is found rarely in the remote lower fringes of mount Dangure), antelope, porcupines, boars, fox, zebra, varieties of monkeys, and others. Moreover, wild honey bees are commonly available in the region, although they are becoming endangered due to the ongoing ecological damages.

Since the region is adjacent to a war-ravaged country, i.e., South-Sudan, there is a huge influx of South-Sudanese into Ethiopia. The Gambela and Benishangul-Gumuz regions are the recipients of these refugees and the region holds more than 50,000 South-Sudanese refugees in centers located in its four districts (UNHCR, 2016), Figure 7.5. The refugee factor has both direct and indirect impacts upon the local people, ecosystem, and the refugees (Betts, 2010). Sometimes conflicts break out between refugees and host communities regarding the use of local environmental resources, synonymous with the explanation provided by Martin (2005).



Figure 7.5 One of UNHCR's refugee camps, Bambasi district (Shewakena & Harris, 2015)

7.5.2 Investor-local people interactions

Community consultation, land use classes that the investor occupies, investors' effort in developing private water sources, and employment of local and non-locals are factors that significantly determine the types of investor-local people interactive (ILPI) outcomes in the Benishangul-Gumuz region (Table 7.6). Many of our findings reinforce the Group of Eight's (G8's) call for responsible agricultural investment (World Bank *et al.*, 2010), later contextualized and re-examined by Stephens (2013). The more the community holds consultations, the less likely they are to compromise the interests of the local community in the entire process of land acquisition and investment operations. As a result, investors develop goodwill among community members and a higher propensity to develop either a confirmatory or collaborative relationship. Occupation of certain land use classes, i.e., former villages and *bukuna* (land used for fallow) contributed significantly to disputes or confrontations, as compared to other land use types like the Savannah and bamboo areas. Especially the Gumuz, who have been shifting cultivators and have a stronger psycho-social attachment to their former village sites and fallow lands compared to other land use classes.

Compensation for displacement or expropriation of land for investment has a positive (but insignificant) contribution to the smooth relationship between investors and their

interaction (Tables 7.7 and 7.8). Unlike what other countries, such as Cambodia (Rudel *et al.*, 2014), practice, a compensation scheme has been arranged in the case of the expropriation of a local person's holdings. Though there are different options for compensation of the expropriated holdings (Qian, 2015), the case in the Benishangul-Gumuz region is prominently limited to the provision of a substitute land in the vicinity. However, for generations among the Gumuz, the land has been owned customarily and they consider every parcel of land as their community's land. 'Providing' a substitute land for them as compensation is a less motivating factor, as they do not consider it to be actual compensation. Which obviously leads to an insignificant positive effect on investor-local people interaction.

The development of private water sources by investors is one of the determinants of ILPI outcomes. Water shortage is one of the key challenges in the region. An initial observation that characterizes the area is 7-8 month dry season, when access to water is a challenge for both humans and animals (Kuls, 1962). However, infrastructural limitations and shortages of potable water persists. Though there are not many, investors who do not compete with the local community for water develop more goodwill and end with a collaborative attachment to the local community. Consequently, development of a borehole is one of the significant determinant variables for the possible types of interactions between investors and local people (Tables 7.6, 7.7, and 7.8). Access to water is often one of the sources of conflict for some of the areas. Just as the conflict between an investor and local community in *Icid kebele* of Guba district involves water.

From Table 7.8, most of the variables (though not significant for all cases) have plausible effects upon the ordinal outcomes, except for in collaborative scenarios. For instance, a unitary increment in compensation is associated with a likely, but insignificant, reduction of disputes by 13.5% and improves latent relationship by 3.2%, *ceteris paribus*. Accordingly, increasing community consultation by unit, reduces the incidence of disputes by 25.5.2% and increases latent relationships by 25.3%, but does not have a significant effect towards confirmatory outcomes, *ceteris paribus*. Furthermore, while respecting former land use classes (for example, not leasing former village and fallow lands with which local communities have a strong attachment) reduces the incidence of disputes by 22.8% and helps develop latent relationships by 22.6%, keeping other things constant. Increasing investor farm distance from community villages contributes in reducing the

likelihood of investor-local people disputes 9%, keeping other things constant. Similarly, when investors develop of boreholes for their farms, it reduces the chance of disputes occurring by 43.7% and increases the likelihood of latent relationships by 4.3%, *ceteris paribus*. By employing locals, rather than non-local, disputes are greatly reduced because locals play a key role in reducing tensions and negotiating, while non-locals tends to exacerbate (though insignificant) the likelihood of disputes. There are two basic reasons for the outcomes associated with employing non-locals. First, non-local employees encroach on land resources for their investment in collaboration with informal land lease brokers. Second, local communities are keen to undermine the expansion of commercial farms by preventing investors' access to labour. We find that this is the same in preceding investigations by Tsegaye (2015) and Dereje *et al.* (2016a). With an effectively functioning local government, the investor-local people relationship is able to reach a more desirable level of interaction that may result a better land deal outcomes.

7.6 Conclusion

Within this study, we examined large-scale transnational land deals in one of the peripheral lowland regions of Ethiopia where '*the most dramatic changes are taking place*' (Lavers, 2012b:795). Much of the land considered for lease was assumed to be 'free and underutilized' peripheral lowland. The Benishangul-Gumuz region, a low-lying western region in Ethiopia, is an attractive case in point where the situation, conversely, is entirely different from the conventional assumption of 'underutilized' peripheral lowlands. There is a competitive demand for land from various users that each have divergent interests. Such as large-scale commercial farming, hydropower reservoir and buffer zones, state agro-industrial plantations, smallholder agriculture, delineation of parklands, refugee centers, and other purposes. We have found that large-scale transnational commercial land deals constituted 68% of the overall commercialized land in the region, higher than the African average of 60% (Osabuohien, 2014).

While more than half of the large-scale agricultural investors are in dispute with local communities, less than a quarter of them have established a conformist relationship with locals. In our pursuit of the factors that underpin investor-local people interactions, we

found that compensation for expropriation of land has a positive but not significant effect on improving the relationship between investors and residents. Community consultation, agricultural experience among investors' key personnel, types of pre-lease land use classes, development of private water sources by investors, and local employment significantly determine whether interactions are confrontational, disputed, latent, confirmatory, or collaborative. The investor-local people interactions could have been enhanced further, forming a sound collaborative relationship that better fulfils the interests of local communities and contributes towards win-win land deals. Competition for power among titular minority groups entangled the key institutions in the region rather than providing adequate attention to resolve investor-community disputes for their timely resolution and maximize plausible regional socio-economic achievements from land deals.

While there is a visible commitment from the central government regarding the operation of some of the mega projects in the area, private capital leaving the region is just as apparent and our findings match the remark by Tom Lavers: '*...exploitation of the periphery for the benefit of the centre*' (Lavers, 2012a:127). So far, land in the region is a 'cash cow', where many private agri-businesses formally and informally compete for land for short term gain, but neither with a subsequent reinvestment in the region nor with regard to conserving the land. Although nature's supportive capacity is dynamic (Cohen, 2011), depletion of land resources could be inevitable so long as Benishangul-Gumuz is subject to the common tragedy of individuals behaving contrary to the public good (Hardin, 1968). Because if this, it is time to strengthen both the logical and logistic dimensions of land administration in the region.

As a result of deforestation and loss of habitat, biodiversity is at stake in the study area (Dereje *et al.*, 2016a). While we appreciate the federal and regional governments' commitment to establish a biome conservation zone for the wild fauna and flora, i.e., the delineation of a parkland amid competing land users is not an easy undertaking. Hence, the process should be carried out through the meaningful participation of key stakeholders, such as the local people, scientific groups, decision makers, and the international community. Finally, using the generic regression function, we derived and demonstrated how an ordinal regression model (ORM) is administered to investigate ordinal categorical outcome variables, which can further be applied to related studies in different contexts and scales.

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Chapter 8 Effects of land deals on the livelihood of local communities: Evidences from Dangure, Ethiopia

Dereje, T., Azadi, H., Nyssen, J., Lanckriet, S., Mitiku, H., Witlox, F. (2016). The effect of large-scale commercialization of land upon the livelihood of indigenous communities. Working paper.

8.1 Introduction

Following the soaring food crop prices of 2007-2008 and accompanied economic dynamics within the global agri-food systems, transnational companies and states acquired large tracts of farmlands in developing countries (Cotula *et al.*, 2009; Deininger *et al.*, 2011; GRAIN, 2008). Besides, the rising interests towards biofuels and the surge of carbon markets that require clean energy has led companies to acquire land transnational on a large-scale basis (Borras & Franco, 2012; Corson & MacDonald, 2012).

According to the Transnational Institute, TNI (2016), the convergence of several crises (food, fuel and energy, climate and financial) amid the rise of new hubs of global capital (BRICS economies and some middle-income nations) have paved the way for the rise of 'flex crops and commodities'. Flex crops and products are those that have multiple or flexible uses: food, fodder, fuel, and other commercial-industrial purposes. Destinations for large-scale land deals tend to produce those flex crops, e.g. soya, sugarcane, palm oil, corn, cassava, industrial trees (Borras *et al.*, 2016; TNI, 2016). Regarding the drivers of international land acquisition, it is important to put a figure on the size of each land use. From the total number of transnational land deals, the share of particular land use driver is computed from databases. According to databases at Land Matrix (2015), while food crops (38%) and biofuel (20%) took the bigger share, other drivers constitute non-food

agricultural commodities (for instance cotton and the like) (11%), forestry (13%) and others (18%). According to recent evidence which verified that 36.5 million ha of land has dealt for food (9%), non-food(32%), and flex crops (16%), and multi-use, i.e., several crops in different categories (43%) (Land Matrix, 2016).

Different views exist regarding the effects of transnational land acquisitions. According to World Bank *et al.* (2010), transnational land deals are beneficial for both investing and host states and it should be encouraged through well-managed processes of the deals. However, according to others, for instance De Schutter (2011), transnational land deals have less-poverty reducing effect and higher opportunity cost than allocating lands to alternatives uses by local communities.

The transnational land acquisition is not free from ideological misconceptions attached to large-scale investments. The most commonly traceable misconception that underpins it is that, there is availability or opportunity of surplus land which with investment can be turned into the generation of attractive profit for companies and jobs for developing countries. Globally, the destinations targeted for large-scale investment are commonly considered as empty lands. For instance, described it as ‘empty’, ‘idle’, ‘marginal’, ‘degraded’, ‘unused’, non-forested, unproductive, etc. (Hagmann & Mulugeta, 2008; Lavers, 2012; Messerli *et al.*, 2014; Schneider, 2011; World Bank *et al.*, 2010). Global institutions such as the FAO and the World Bank has sustained this misconception. For example, when the World Bank declares the availability of an enormous ‘reserve’ of potentially ‘suitable’ land of between 445 million and 1.4 billion hectares worldwide as figures stated in Alexandratos & Bruinsma (2012) and Deininger *et al.* (2011).

In order to enhance the positive contribution of transnational land deals, the World Bank has developed principles, i.e., Principles for Responsible Agricultural Investment (PRAI)(World Bank *et al.*, 2010). According to De Schutter (2011), however, that PRAI are simply instruments to ‘destroy the peasantry responsibly’ and hence advised smallholder agriculture which is a more has a pro-poor. Despite the fact that there are arguments in favour of transnational investment in agriculture, its contribution in terms of creating employment opportunities is minimal in Ethiopia mainly due to sluggish implementation of projects, seasonal nature of the agricultural sector, and low rates of wages (Dereje *et al.*, 2016).

Though Ethiopia is one of the host countries for transnational land deals, evidences are lacking about the contributions of the deals upon the livelihood of local communities. Many recommended studies to be conducted about the socio-economic and environmental effects of transnational land deals (Borras & Franco, 2013; Cotula *et al.*, 2009; Cotula, 2016). According to Maru & Rutten (2015), commercialization of land on large-scale basis adversely affected local people in Oromia region where the deals resulted lower income among affected communities compared with unaffected (i.e., counterfactual) communities.

Land is leased on a large-scale basis to investors both by the federal and regional governments in the Benishangul Gumuz region, which is one of the areas of Ethiopia, which is considered as a national growth corridor of the country. Therefore, this study aims to explore the effects of large-scale commercialization of land upon the livelihood of local people in Dangure district. Specifically, the study investigates the effects of land deals on the food security status of households. It also explores the factors which determine the level of food security among affected groups. In the district, there are 31 investors who leased a total of 106,750 ha of land. Of the total 31 investors, 15 are large-scale (who leased a land of ≥ 200 ha) transnational investors (foreign and diaspora) who leased total of 79,980 ha of investment land. It is where bigger transnational companies such as the Indian Shaporji-Pallonji (S &P) which leased 50,000 ha of land for producing pongamia (*Millettia pinnata*), a biofuel crop.

8.2 Study area and methodology

8.2.1 Study area

The study was conducted in *Dangure* district which is one of the districts of Benishangul Gumuz National Regional States of Ethiopia. It is located between $10^{\circ} 58'$ to $12^{\circ}03'$ N latitudes, and $35^{\circ}26'$ to $36^{\circ}24'E$ longitudes (Figure 8.1). *Manbuk* is the administrative capital of the district while Gublak is the other growing business town a town. *Manbuk* is located at 856 km far Northwest of Addis Ababa (on the way Addis-Assosa-Mambuk).

According to the 2007 National Population and Housing Census, the total population of the district was 48,537 of whom 24,360 were male and 24,177 female, with 8,352 (17.21%) of its population live in town. According to BoFED (2011), Dangure district has an area of 4,684.97 km² with 29 administrative kebeles (one of which is *Manbuk* town). In 2011, the total population figure of the district was 58,566 of whom 29,323 were males and 29,243 females, implying a population density of 12.5 persons per km² which is lower in comparison with the regional average of 18.5 persons per km² (ibid).

For years, shifting cultivation, with a slash and burn practice, is the main livelihood strategy of the indigenous communities in the region where sorghum is their staple food (Wallmark, 1981). They also supplement their living with other subsidiary activities such as hunting, fishing, gathering, honey production and collection. The area is in one of the administrative states where most dramatic changes are taking place (Lavers, 2012). Notwithstanding their age old slash and burn land use practices they have started conventional farming methods which is free from shifting cultivation. Recently, especially following the acquisition of commercial farmlands by investors and the villagization or resettlement program in the region, the communities have started a confined and sedentary intensive cultivation. Most of their intensive farming practice is made through renting their land mostly to other communities in the region (Amhara, Oromo, and Shinasha) and those migrant highlanders who come to the region.

Among the local communities (especially in the Bertha and Gumuz), land and related resources are communal properties and the rights to access them are originated from the clan. For ages, clans are the ultimate or real owners of land among the indigenous communities in the region. Within their clan territory, individual clan members enjoy possession right over land. They get land to be cleared and cultivated for 2-3 years and when a decrease in yield is observed, they leave it fallow for 3-5 years. In such a land use process, sometimes clan members may abandon their village temporarily and move to a new fertile place within their clan territory.

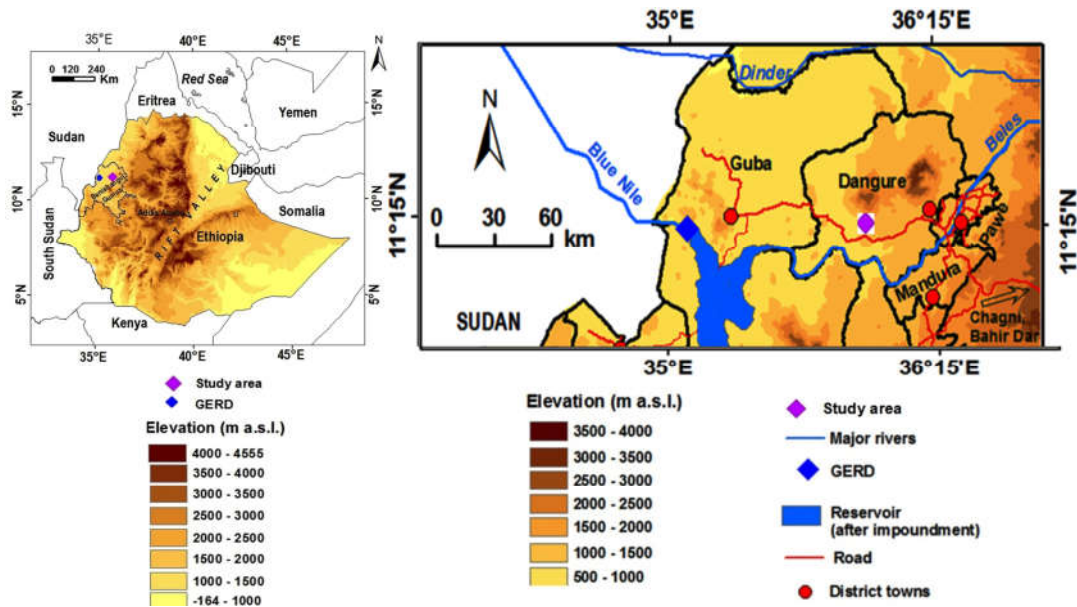


Figure 8.1 location and altitude map of the study area

Traditionally, the Gumuz communities do not move to new places indefinitely, rather they move and stay for some time and return to their original village which they abandoned and left it to regenerate. Despite with all such moves, though sometimes there is conflict within and across clan members, they resolve it through their customary land non-affected practices. The communities have also a very good but almost abandoned culture of alternative (indigenous) intraethnic conflict resolution techniques, called *Tenba*. Whenever the Gumuz enter into a conflict with highlanders (Oromo, Amhara, Shinasha, and Agaw), the Gumuz called them them all ‘Red’, they involve in another traditional conflict resolution technique called *Michu*. *Michu* (literally mean friendship) is a historically successful traditional interethnic conflict resolution technique which seeks for the establishment of an environment of mutual understanding and tolerance.

8.2.2 Methodology

8.2.2.1 Study design

The study used a cross-sectional research design by which data was collected from households in the period February to April 2015. The data were collected using a structured questionnaire (Appendix III). Before data collection, the questionnaire was tested and finally it was approved through face validity and the reliability was confirmed

by estimating Cronbach's alpha ($\alpha = 0.77$) which is within acceptable range of the coefficients of reliability (George & Mallery, 2003).

In addition to survey which was made through a structured questionnaire, key informant interview techniques were employed to collect data. A total of 386 households were surveyed through classifying them in to 'affected' and 'non-affected' groups. Using systematic random sampling technique, while a total of 162 households were chosen from the 'affected' class and 224 households were chosen from the 'non-affected' class. The 'non-affected' groups of households are those which reside in *kebelles* where there are neither large-scale commercial farms nor complains in relation to land lease. *Kebeles* are local administrative units in Ethiopia which consisting of at least 500 households in the case of Ethiopia in general and on average about 390 households in the case of the study area Dangure district(CSA, 2010).

8.2.2.2 Data analysis

Two techniques were used to determine effects of land deals upon livelihood. First, a general output was developed to portray the overall livelihood transformation occurred as a result of an intervention, i.e., leasing out of large tracts of land to companies and investors. Second, as food security is a basic element for an over-all human well-being, food security status of affected communities and non-affected (i.e, counter factual) community groups was determined.

Each of the livelihood capitals have relation with property rights. From these, in the study, we focus on the two capitals: natural capital and physical and financial capital. Ultimately exploring the effect of commercial land deals regarding access to different assets and food security. The modality in which households construct their livelihood strategies depends on how the laws, communal, social, and familiar norms affect the ways in what property rights are defined (Hinojosa, 2005). Institutions affect the livelihood strategies of people indirectly throughout their influence upon property rights (for instance land rights) over capitals (Ostrom, 2009; Payne, 2004). As a result, changes in the appropriation of capitals (e.g., land) through changes in property regimes most probably would lead to different patterns of access (and use) assets and, therefore, to the evolution of their livelihood

strategies. On the other hand, the level of the effect of property rights upon livelihood strategies would depend on the weight that each asset has to its formation.

Determination of household food security index

Studies on the multi-factorial behaviour of food security has provided a number of analytical insights, yet measurement problems persist as a major challenge, for research, program management and evaluation (Maxwell *et al.*, 1999). Though many definitions are available, 'food security' is defined as a situation "*when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life*" (FAO, 1996:3). Later in 2009, the World Summit of Food Security conceptualized it as the "*four pillars of food security are availability, access, utilization, and stability*" and stated that "*the nutritional dimension is integral to the concept*" (FAO, 2009:1). Note: throughout this chapter, poverty refers to the food poverty, i.e level of poverty referenced from predetermined minimum calorie intake of 2200 Kcal.

Analysing the livelihood effects of interventions in a community predominantly involves the comparison of living standards across households. It starts by selecting a welfare measure, and usually a household income or which is adjusted for the size or/and composition of a household. It extends to setting a poverty line (or it can be a food poverty line) at a specific level of welfare corresponding to a certain minimum acceptable standard of living. The line is used as a threshold where households falling below the line categorised as poor and those falling above the line as non-poor. Once the poor (where poverty expressed in terms of poverty line or food poverty line) have been identified, different specific measures like the headcount ratio, food poverty gap, and squared food poverty gap can be estimated and overall food poverty structure can be determined. In the analysis of poverty in general and food poverty in particular is not the precise determination and location of food poverty lines, rather the implied comparison across time or between different groups (Alkire & Foster, 2011).

Absolute poverty lines typically represent the level of expenditure (or income or consumption) required to achieve a minimum level of welfare, which means the line reflects the cost of attaining a given reference level of standard of living or utility that defines the poverty threshold. Among the alternative methods to define poverty line are the

Cost of Basic Needs (CBN), Food Energy Intake (FEI), social subjective poverty line, and a specific amount of dollar a day criterion applied for international comparison by the World Bank (for instance \$1/day till 2008, \$1.25/day in 2008-2015, and \$1.90 after October 2015) (Jefferson, 202; World Bank, 2015). In the current study, we used the CBN approach to estimate food poverty lines. We considered both purchased and imputed value of non-purchased items for own consumption were used to construct food security indicators. In doing so, consumption expenditure is described in adult equivalence as adapted from Dercon & Krishnan (1998) (Appendix IV). To determine the food poverty line, the following steps were followed.

Step 1: To determine the food poverty line by choosing an appropriate bundle of food this is typically consumed by the poor households. To this end, the poorest 50% were identified as a reference household group considered as typical to the poor sections of the community.

Step 2: The identification of the food items which are commonly consumed by a reference household group so as to establish the food bundle. In our case study areas, a total of 18 food items were chosen and their quantity was determined in a way that they aggregately supply 2200 Kcal, the required level of minimum calorie intake.

Step 3: After selecting the bundle of consumable items, they were valued using an average price for each food item applying internal price data. Prices for the basket of food items were valued by taking the average local market price at Manbuk and Gublak towns.

Step 4: Determination of poverty indices (in our case determination of food poverty indices). The commonly applied poverty indices are the head count index, the poverty gap index, and the squared poverty gap index. The head count index measures the incidence of poverty. It provides the proportion of a household population with a per capita consumption below a defined poverty line. The poverty gap index measures the intensity of poverty and it is the mean poverty gap in a population as a proportion of the poverty line. It is the average distance below the poverty line expressed as a proportion of that line, where the average is established over the whole population, considering the non-poor as having a zero poverty gap. It provides information regarding how far is a household in terms of average per adult consumption/income is from the defined poverty line and measures depth

of poverty. The squared poverty gap index takes into account not only the poverty gap (i.e., how far the poor is from the poverty line) but also the level of inequality which persist among the poor.

To the incidence, depth, and severity of food insecurity, a decomposable procedure of Foster *et al* (1984; 2010), i.e, *Foster-Greer-Thorbecke measure (FGT)*, as stated as follows was applied.

$$FGT(\alpha) = \frac{1}{n} \sum_{i=1}^q \left[\frac{(c-y_i)}{c} \right]^\alpha$$

Where:

n = sample size, i.e number of households

y_i = per adult equivalent calorie intake for the ith household

c = a cutoff point between households who are food secured and who are not as adapted in terms of caloric requirements of 2200 Kcal (MoFED, 2013)

q = the number of food insecure households

α = the weight associated to the level of severity of food security

in the FGT index, if y_i is greater than or equal to c, it implies that the specified household is not food secure.

To determine the effects of independent variables on the household food security (HFS), a binary logit model is employed wherein HFS = 1 if a household is food secure and HFS=0, otherwise. A household above 2200kcal is considered as food secure, otherwise it is not.

Besides, determinants of food security are determined. Applying the Cumulative Distribution Function (CDF), i.e., Logit or Probit models(Gujarati & Porter, 2009), the estimate form can be described as:

$$L_i = \ln\left[\frac{P_i}{(1-P_i)}\right] = \alpha_0 + \alpha_1.A_1 + \alpha_2.A_2 + \alpha_3.A_3 + \alpha_4.A_4 + \alpha_5.A_5 + \alpha_6.A_6 + \alpha_7.A_7 + \alpha_8.A_8 + \alpha_9.A_9 + \alpha_{10}.A_{10} + \alpha_{11}.A_{11} + \alpha_{12}.A_{12} + \alpha_{13}.A_{13} + \alpha_{14}.A_{14} + U_i$$

L_i = logit/or log of the odds ratio/, which is linear both in A_i and the parameters, indicating the change in food security per a change in a respective dependent variable by a unit

A_i = individual i, where i = 1, 2, 3, 4...14; are independent variables

P_i = the probability that an individual is food secure, and (1-P_i) = the probability that a household is not food secure

α_0 = constant term or intercept, indicating the aggregate effect of constant factors on household food security

A_1 = Age (Age of household head)

A_2 = Education (literacy status of the household head)

A_3 = Family size (in number)

A_4 = Amount of land size cultivated (ha)

A_5 = Ratio (family size in Adult Equivalent consuming unit)

A_6 = Distance to market (km)

A_7 = Gender (sex of the household head; Male = 1, Female = 0)

A_8 = Labor involvement in the activities of commercial farms (involve = 1, not-involve= 0)

A_9 = Livestock size (considered in tropical livestock unit – TLU). TLU conversion units

adapted are as follows: Calf =0.25, Heifer=0.75, Cow/Ox=1.00, Horse=1.10,

Donkey=0.70, Sheep/Goat=0.13, Chicken=0.013, Bull=1.00, Camel=1.00 and Mule=0.70

(Storck, Bezabih, Berhanu, & Shimelis, 1991)

A_{10} = Total annual farm income (Birr)

A_{11} = Aggregate off-farm income (Birr)

A_{12} = Credit use or not (User = 1; non-use = 0)

A_{13} = Food aid obtained by a household (Birr)

A_{14} = Access to local forest products (timber and/or NTFPs) (secured=1; otherwise=0)

U_i = error term

The model is built on the basis of the following assumptions:

1. Land size owned, labor involvement (i.e., employment) in the investors' commercial farms, amount of land cultivated, farm income, amount of off-farm income, and availability of food aid are positively contributing factors for food security
2. Use of credit opportunities, and access to local forest products are among the institutional factors that can have positive contribution to food security.
3. Age and sex are demographic variables which can influence food security
4. Education as a proxy variable influencing household's food security
5. Family size and distance to market influence household's food security negatively

Before determining or estimating the logistic regression model, test for multicollinearity was made using the Variance Inflation Factor (VIF) for explanatory variables which are

continuous and Contingency Coefficients (C) for those variables which are dummy. Adapting Gujarati (1995), VIF is defined as:

$$VIF(A_i) = \frac{1}{1 - R^2}$$

Where,

A_i = the i^{th} quantitative independent (explanatory) variable regressed on the other quantitative independent (explanatory) variable

R^2 = the coefficient of determination when the variable A_i regressed on the remaining independent variable. If $VIF(A_i) > 10$, it is an indication for the existence of strong multicollinearity between those continuous independent (explanatory) variables. For each the qualitative variables, Contingency Coefficients (C) is determined as follows:

$$C = \sqrt{\frac{A^2}{n + A^2}}$$

Where,

C= Contingency coefficient, $0 < C < 1$

A^2 = A chi-square random variable

n = Sample size

As a rule of thumb, $C > 0.75$ indicates strong association of variables, and $C < 0.75$ implies weak association of variables (Gujarati, 1995).

Descriptive statistics and relevant statistical tests such as the paired sample t-test were used to make important comparisons. STATA (version 11) software was used to conduct statistical computations and tests (with a significant level of $\alpha = 0.05$). Available institutional frameworks such as land holding systems give rise to a set of property right systems have a strong bearing upon the different livelihood capitals though with a different degree of influence (Derman & Hellum, 2007; Niehof, 2004; Wiebe & Meinzen-Dick, 1998).

8.3 Results

8.3.1 Livelihood outcomes and changes

Under this sub-section, we can see how the rising demands for land in general and the large-scale commercialization of land in a ‘peripheral’ region (i.e., more than 600 km away from a national capital) has forced the regional government to develop new land laws. The situation also forced local communities (which were used to customary land holdings for ages) to a complete change in their livelihood as a result of restricted access to land resources.

8.3.2 Pre-land deal livelihood

With specific reference to the study area, Kuls (1962) noticed that the area is quite different from the highlands which were largely deforested and mostly occupied by bare arable land and pasture surfaces, dense savannah woodlands more or less cover the entire lowland closer to Beles river. However, recently vegetation in the area is under severe pressure especially following large-scale agro-industrial projects and encroachment (Tsegaye, 2015; Dereje *et al.*, 2016). Shifting cultivation (with a slash and burn practice), subsided with gathering, hunting, fishing, and production of honey is the primary livelihood strategy of the indigenous communities (Kuls, 1962, Abdussamad, 1995). Besides, communities in the region engage in traditional gold mining activities and recently some employment is generated in commercial farms.

In the pre-deal (i.e pre land deal) situation, the Gumuz often talk about two categories of people in their traditional wealth ranking system: the poor and the rich. The rich are those who have more than 20 cattle, more than 15 goats and over 10 sheep and 5 or more chicken. Besides, they should have a good deal of grain reserve to be used during bad seasons. On the other, the poor may have a cow, 5 goats and no sheep and 5 chickens while the household remains deficient of grain reserves to withstand occasional shocks in times

of crisis. The poor are more vulnerable to environmental hazards and find it difficult to cope with the economic and social impacts.

According to the traditional seasonal calendar of the Gumuz, most people are engaged in agriculture in the months between June and November. Between December and March/April, most people especially adult men tend to be occupied in off-farm and non-farm activities such as gold mining and wage employment while taking care of their land and preparing it for next agricultural season starting from as early as February or March. By May sowing of some cereals such as sorghum begins. The highest decline in household food grain reserve is expected in the months of March and April during which declining food shortage and income is augmented through other means.

According to Gumuz traditional division of labor, the father is responsible for major income earning and agricultural activities: farming (recently using oxen), Clearing of the land, sowing, trade, and traditional gold mining activities. and The mother is preoccupied with domestic household chores such as cooking, fetching water and fire wood, but is also actively involved in hoe agriculture, weeding , preparing local brewed alcoholic drinks called *bordie*, while the male child looks after goats, assist his father in many of the activities including gold mining, looking after the cattle and goats. The female child does activities similar to her mother's: fetching water, fire wood and assist her mom in other activities such as cooking. Men are often responsible for marketing of agricultural produces. According to traditional gender hierarchy, women occupy lower status despite the fact that they shoulder high workload. They have little access to improved technologies and decision making at a household and community levels.

The social relations between the different cultural groups in the region are generally good despite differences in social structure and religious creed (most of the Mao Komo groups are Muslims while the majority of Gumuz, Berta, and Shinsha tend to be Christians). Often there is a physical boundary (such as rivers and mountains) separating these people. Relations with neighboring ethnic such as the Amhara and Oromo are also generally good except in certain instances of disagreements between farmers where occasional elements of mistrust and low intensity conflict develops over land use contacts.

Conflict resolution among the Gumuz take the form of reconciliations (*mangma and michu*). Serious offences such as killings often lead to retaliations. The peaceful resolution often involves exchange marriage in which the perpetrator of the killings provides one of his sisters to the brother of the deceased. If he does not have sisters to offer as wives, he asks his fathers' brother to help by "lending" him a potential wife for the other party. Otherwise, blood money has to be arranged to be apportioned among the brothers of the deceased. This may sometimes amount to about 12,000 Ethiopian Birr (500-600 Euro) depending the economic conditions of the family. Often this is facilitated by elders from another clan. The elders are elected based on age, impartiality, ability to convince others and rhetoric ability as well as experience and wisdom in conflict resolution. The perpetrator hides for over a fortnight until formal resettlement procedures are initiated by elders. Not only the killer but also the entire family members will have to make themselves less visible for fear of reprisals: women, children under 5 and the old are often not targeted. Elders then organize dispute processing meetings in order to arrive as a mutually binding settlement often expressed in the form of arbitration. Perpetrators often remain in hiding during the discussion and their close relatives (often his brother or/and his uncle) represent him in such important meetings. Often they have to submit to decisions made by the elders. The deceased will also be represented by his brothers or uncles who appear with slight hair shave to symbolize grief.

After major settlements are reached another meeting is arranged to embark on yet another very important ritual in the resolution process. A goat is slaughtered and the brothers of the killer and the deceased are given a blood stain on the hands and are asked to hold the thigh bone on both sides and the bone are broken by the elders in the middle using a stone. Then people enjoy the meat of the goat is consumed by the elders while members of the conflicting parties are excluded from such the ritual. The resolution is not over until another goat is given to the elders as a reward for their role in the peace-making process. Today, such traditional structures have been linked to the formal structure and a mixture of tradition and modern court litigation prevails. Perpetrators remain under custody and are asked to pay blood compensation before formal court cases start. Then, the killer is punished under the penal code and may serve up to 15 years in prison.

8.3.3 Post-land deal livelihood

Before the arrival of commercial farms, communities administer land on the basis of customary holdings of land for ages. However, such forms of landholdings were not formally recognized by the statutory laws of which were declared in 2010. The region's statutory land laws were made following the experience of other regions which have been developed in a different context than the Benishangul-Gumuz region where land was held customarily. According to the proclamation, '*...any peasant who occupied before this proclamation and will occupy land illegally shall have no holding right*' (GBGR, 2010; Art. 5.3). The implication is that, all the land in the region which was held customarily (either for farming or settlement) by the indigenous communities is considered as illegal. In effect, the proclamation put local communities who live there for ages on a similar plate with those newcomer investors. Communities were formally requested to present their official request to local administration. Convincing communities to adhere the statutory land law remains one of the key challenges in the region.

According to the law '*Rural lands hold communally or jointly may be changed to private holding by the government....private investors shall have the right to acquire land, to use on, by rent from the government or any other rural land holder based on the agreement to be made*' (Art.6.3-5). In doing so, while private holdings got a relatively better institutional backup, communal and customary holdings were ignored officially. A situation strengthening the claim that capturing of communal resources is among the pressing challenges facing African customary landholding systems (Sulieman, 2015).

According to the statutory law, there is a maximum and minimum size of land to be held by a household (GBGR, 2011). Minimum peasant holding of 2 ha (for rainfed farming) and 0.20 ha (for irrigation). To halt further fragmentation of holdings, a minimum parcel of 0.25 ha for rainfed and 0.10 ha for irrigation farming is set. The maximum peasant holding size is 5 ha (in the highlands and midlands) while it is 10 ha in the lowlands. Besides, lowland polygamous households were entitled to get additional 5 ha per wife. Though the law says so, there are households with holdings as low as 1.6 ha especially around resettlement villages though the average land holding is 8.4 ha. Traditionally, having more than one wife was a tradition, especially among the Gumuz and even wives push their

husbands to have more wives. Their justification for doing so correlates with Boserup's explanations about women's role economic development (Boserup, 1970).

Communities are in statutorily driven livelihood transformation: from shifting cultivation to a complete sedentary farming. In praxis, however, shifting cultivation has not yet abandoned, and local communities started supporting their livelihood through renting land (mostly without being restricted to their household holdings) to others, mainly to highlanders of neighbouring regions.

Table 8.1 Major changes within the livelihood structure of Gumuz communities

Livelihood capital assets and related factors	Pre-land deal scenario (2010 as reference year)	Post land lead scenario (2015)
Land administration	Customary by clans	By region through certification of holdings
Access to land	Almost free	Restricted
Crop land	Different land in different locations	Predominantly single land in one location
Fallow land	At least 2 fallow lands per household	No fallow land
Grazing land	Free and large	Restricted and small
Garden	Large	Small and some times no garden in resettlement villages
Average land holding	Customarily owned and as much land as a community member needs	8.4 ha per household
Local labour	Labour for own farm, collection of forest resources	Some labour employment in commercial farms, restricted collection of forest
Incidence of conflicts	Rare	Some times
Traditional conflict resolution (eg. <i>michu</i>)	Commonly applied	Rarely applied, substituted by formal hearings
Road	Limited access	Limited access and better in few places
Local price of leased land (ha ⁻¹ yr ⁻¹)	Birr 200-300 (€ 10- 15)	1 quintal of sesame or equivalent to it. In cash, Birr 2700-3200 (€ 108- 128)

Though traditional farming practices are better in minimizing soil loss (Dereje *et al.*, 2016), the law favours land leases made between peasants and commercial farmers as compared to leasing for traditional farming. “*Duration of land leases between the peasant and the lease shall be up to two years for traditional agricultural and ten years for users of modern technology*” (GBGR, 2010). A complete shift in the livelihood structure has observed, especially among the indigenous Gumuz communities. Figure 3 has summarized the situation well.

As a result of increasing arrival of commercial farmers, there is a parallel increase to the advent of small-scale commercial farmers who mostly come from highlands of Ethiopia to get lease land from local Gumuz households. Consequently, the local land lease price has increased for about ten folds compared to the pre-land scenario (Table 2). As the Gumuz communities were prominently shifting cultivators who use so traditional and simple farming tools, they were not used to farm using oxen or other animals like in the case of other parts of Ethiopia.

Although few have started farming using animal power (either oxen or donkeys), more than 90% of the households rented at least half of the land they got from the state to highland migrant farmers. Especially, in the years 2012-2014, most of the households in the communities leased land with a varying price of € 108- 128 per ha per year. At a local level, there are some arrangements in using land between Highlanders (who are familiar with conventional cultivation) and lowlanders (the Gumuz). For instance, if a Gumuz household has 7 ha of farm land suitable for sesame, usually he leased 4 hectares to Highlanders and requests the Highlanders to assist him in the cultivation of the remaining 2 ha, while the last 1 ha can be used for other crops than sesame such as corn and beans. There are also local land brokers with a wider and trans-regional network. These all lead to further encroachment of lowland forest and woodlands which were considered to be parkland area and conservation corridors.

As a result of the surging economic advantage of holding extra land locally, competition for more land sometimes lead to disputes and conflicts. Disputes are stronger especially over a land which either has not yet classified and assigned to a user or for a land which was provided for investors. Conflicts usually exist between investors and local people, investors and highlanders who leased land from the local community, among local households, between highlanders and lowlanders and even among highlanders. Local communities survived and somehow ‘enjoyed’ renting of their holdings to highlanders in the short run. However, since rent holders (highlanders) are looking the short term benefits from land and at least to reach a production break-even point, they usually cultivate the land without adequate care and conservation. As a result, after few years, the lease price for ‘degraded’ farmlands will be minimal, and the overall livelihood of Gumuz communities is at an apparent risk.

The Gumuz people perceive animals are the source of insurance and economic security. Animals are like “banks”, a Gumuz elder once said. Sale of animals is the basis of their adaptation to environmental stress. The Gumuz use them to escape shocks during economic stress. However, from time to time, due to scarcity of grazing land, households have lower livestock than the pre-deal scenario, and lower compared to the counterfactual groups. Due to all these, the capacity of households in resisting upcoming livelihood shocks is low.

8.4 Household food security and its determinants

Table 2 was developed using the procedure of determining food security index, *Foster-Greer-Thorbecke* (FGT) measure (Foster *et al*, 1984). It summarizes the level of food security or insecurity. More specifically, the food insecurity index is further decomposed into the incidence, depth and severity of food insecurity both in affected and non-affected groups of households. The result indicated that by the year 2009/2010, 56% of the households in affected areas and 54% of the households in non-affected areas are food secured. This implies that, 44% of the households in affected areas and 48% of the households in non-affected areas were not food secure, i.e, their consumption was below the recommended level of daily caloric intake (2200kcal).After four years, by the year 2014/2015, while household food security in affected areas is increasing 72%, the level of food security among non-affected groups of households was improved to 78% in non-affected areas which is much closer to the target set by the government of Ethiopia (MoFED, 2010). This indicates that the food security gap between affected and non-affected groups is not much in the short run. However, in the future, affected households (i.e., households affected by land deals) are much susceptible to risk as they are with less shock absorption potential as discussed under section 8.3.1.

Table 8.2 Level of food security (food security index)

Type of food insecurity	Affected groups (n ₁ =162)		Non-affected groups (n ₂ =224)	
	2009/2010 (recall)*	2014/2015	2009/2010 (recall)*	2014/2015
Food secured	91 (56)	117 (72)	121(54)	175(78)
Food insecure (incidence)	36(22)	26(16)	63 (28)	38(17)
Food insecure (depth)	19 (12)	13 (8)	29 (13)	7(3)
Food insecure (severity)	16 (10)	6 (4)	11(5)	4 (2)

* in cross reference with district level (safety net) data. Numbers in the bracket are percentages

From Table 8.2, it clear that food security has improved in both affected and non-affected communities. However, as indicated in Figure 8.2, the improvement among affected communities (16%, i.e 72-56) is less than the improvement scored among non-affected communities (24%, i.e 78-24). The severity of food insecurity for the year 2014/2015 is 4% for affected group and 2% for the non-affected group of households. Similarly, the summary also indicated that the depth of food insecurity, theoretically called food insecurity gap, among affected group of households is relatively higher (8%) than the depth of food insecurity in non-affected group (3%). Food insecurity gap indicates the possibility to approximate resources required to eradicate food insecurity. That is, based on the computed food insecurity gap (depth) for the year 2014/2015, if efforts are made to meet 8% caloric requirement (of insecure households in affected areas), and 3% caloric requirement (of insecure households in non-affected areas), food insecurity can be eradicated.

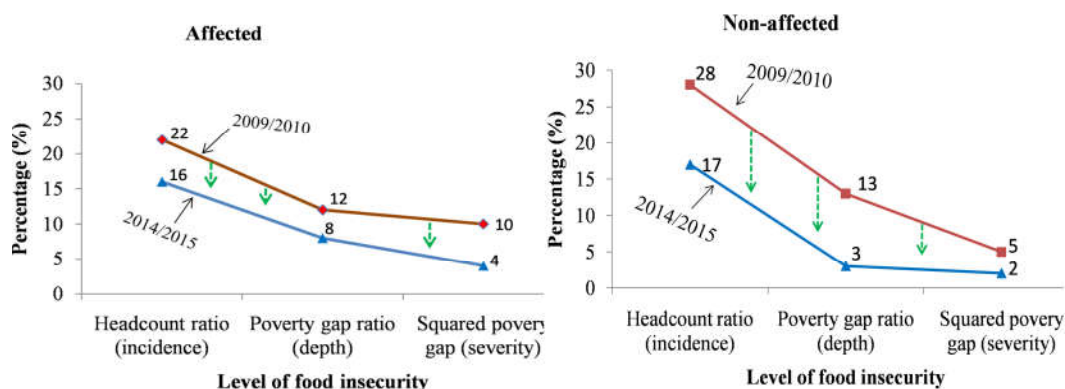


Figure 8.2 Changes and improvements in food poverty line for affected and non-affected groups of households

Table 8.3 indicated the model output which shows the determinant factors of household food security in the non-affected areas where there are commercial farming practices. Before fitting the logistic regression model, test for multicollinearity was made using the Variance Inflation Factor (VIF) for explanatory variables which are continuous and Contingency Coefficients (C) for those variables which are dummy. The VIF value for each explanatory variable was found to be less than 10, implying that there was no problem of multicollinearity among those hypothesized continuous variables fitted in the model. The value computed for C is below 0.75, indicating that there was no multicollinearity problem among those discrete variables. As a result, all the hypothesized explanatory variables were incorporated in the logistic regression model. The quality of the model was assessed using further indicators such as goodness of fit in the model measured by count R^2 which is a favourable output as far as it is above 50% (Maddala and Lahiri, 2010).

Table 8.3 Logit model estimates (maximum likelihood estimates) for the affected group

Variables	Coefficients	Odds ratio	P-value
Age	0.0341	1.2603	0.1004
Sex (Male headed household)	0.179	1.3852	0.7020
Education	0.0457	1.8940	0.3230
Family size (AE)	-0.501	1.0086	0.0329**
Cultivated land size(ha)	0.3564	1.7829**	0.3706
Dependency ratio of hh	-0.4931	0.7162	0.4505
Distance to market	0.0002	1.0010	0.7719
Labour involvement	0.2755	1.2534	0.5972
Livestock size (TLU)	0.2142	1.7321	0.0418**
Total annual farm income	0.1116	1.1223	0.0392**
Aggregate off-farm income	0.1859	1.0067	0.0704*
Credit use (access)	0.4255	1.9560	0.3201
Food aid	0.0309	0.9488	0.2675
Access to forest resource	0.0052	1.1206	0.0364**
Constant	-2.231		0.1852
Pearson Chi-square		81**	
Log.hood		-53.61	
R^2		76%	
Sensitivity		80.72%	
Specificity		71.04%	

***, ** and * significant at 1, 5 and 10 % probability level

Family size, amount of land cultivated by a household, livestock size owned, total annual farm income, aggregate off-farm income, and access to forest resources are the variables that determine the food security status of households in affected areas. Family size is significant at 5% probability level, indicating that households with smaller family size tend to be food secure compared to larger family size households. *Ceteris paribus*, as family size increases by one adult equivalent, food security of a household on average decrease by a factor of 1.0086. The probability of households' food security increases with the increased *amount of cultivated land* at 5% level of significance. Conceivably, cultivated farm size is a proxy for a host of factors such as capital ownership, farm input use, credit access, and capability to resist livelihood shocks. The larger the cultivated farm size is associated with better wealth and household income and increased access to capital, which in turn increase the probability of household's investment on better farm equipment and a shift from hoe-based cultivation to cultivation of land using animal power, i.e oxen or donkeys). *Ceteris paribus*, as cultivated farm size increases by one hectare, the odds ratio that is being in favour of food security increase by a factor of 1.7829.

Size of livestock is indicated to have positive contribution to households' food security at 5% of significance. Normally, through the provision of consumable items such as milk, meat, and milk products livestock can have positive contribution for households' food security. However, incorporating such consumable items in a household's diet is not usual in local communities. For example, milk and its products are not appreciated and almost are not consumed among local Gumuz households because of cultural reasons. Therefore, the livestock contribution for food security is most presumably through selling them and purchasing food items, farm equipment and inputs. *Ceteris paribus*, as the total livestock ownership increases by one Tropical Livestock Unit(TLU), the odds ratio that is being in favour of food security increase by a factor of 1.7321.

Total annual farm income and aggregate off-farm income are also in favour of food security at 5% and 10% probability level respectively. *Ceteris paribus*, as the farm and off-farm income respectively increase by one Birr, the odds ratio that is being in favour of food security increase by a factor of 1.1223 and 1.0067 respectively. Finally, access to forest resource is an institutional factor that has positive contribution to a household's food security at 10% probability level. Households or communities who are accessed and able to use forest resources (which are timber and mainly non-timber products) are able to support

their food security requirements as there are a number of local non-timber forestry products (NTFPs). *Ceteris paribus*, access to a local forest resource favours household food security by a factor of 1.1206.

8.5 Conclusion

Land deals have resulted in competition for local land resources. In the pre-land deal periods, local communities were wholly dependent on nature and engaged in shifting cultivation with a slash and burn practices. Before the arrival of commercial farms, communities administer land by customary holdings. However, such forms of landholdings were not formally recognized by the regional land laws which were approved in 2010. Following the advent of commercial farmers, there has been a parallel increase in the arrival of small-scale commercial farmers who mostly come from highlands of Ethiopia to get lease land from local Gumuz households. Consequently, the local land lease price has increased for about ten folds compared to the pre-land scenario. As the Gumuz communities were prominently shifting cultivators who use so traditional and simple farming tools such as hoes, they were not used to farm using oxen or other animals like in the case of other parts of Ethiopia.

A complete shift in livelihood or transformation has occurred among local communities. As a result of the surging economic advantage of holding extra land locally, competition for more land sometimes lead to disputes and conflicts. Disputes are stronger especially over a land which either has not yet classified and assigned to a user or for a land which was provided for investors. Conflicts usually exist between investors and local people, investors and highlanders who leased land from the local community, among local households, between highlanders and lowlanders and even among highlanders.

Local communities survived the pressure from large-scale commercial farmers through renting of their holdings to highlanders in the short run. However, a rented land is used without conservation. Consequently, after the few years, the lease price for 'degraded' farmlands will be minimal, and the overall livelihood of Gumuz communities is at an apparent risk. It is time to diversify the sources of income among Gumuz households

parallel to building their capacity in many directions ranging from financial saving to conservation of land. There should be a mechanism to monitor brokers' driven local informal land lease markets which are mostly distortive to normal land rental prices. Finally, as traditional local conflict resolutions are getting abandoned in almost all cases, local administration structures are busy with resolving disputes even for minor issues. Therefore, it is important to maintain some of the constructive components of the local conflict resolution procedures, for example through modifying the michu and mangma.

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Chapter 9 Summary and Conclusion

9.1 Introduction

Emerging evidence about the transnational land acquisition reflects profound global economic and social transformations with broad implications for both the future of land resources in general and the fate of world agriculture in particular. Decisions taken today will have considerable repercussions on the livelihood of many communities and the natural environment in the coming decades.

The transnational land deal which many call it 'land grabbing' has gained momentum across many continents since the end of the first decade of the 21st century. While transnational land deals and land acquisition are unfolding fast, policy responses, governance responsiveness to public concerns, and accompanied business and ecological ethics have not yet that much. Many of the scientific contributions made since recently are prominently limited to the drivers of transnational land deals, restricting themselves to the 2007-2008 global economic crises and accompanied business speculations. Few justify it from a broader dimension and long-run time frame, i.e., considering it not as a new phenomenon. Post-land deal effects almost remained as if it is a subject left to socio-environmental activists. The aim of the dissertation was to analyze the features and level of inclusiveness of large-scale transnational commercial land deals, and investigate their effects on environment and livelihood with cases from the Benishangul-Gumuz region of Ethiopia.

This chapter summarized the major results and findings from the different empirical analyses made. Accordingly, while section 9.2 relates the major findings to the research questions, section 9.3 describes overarching conclusion, Section 9.4 points out misconceptions attached to 'land-grabbing.' Section 9.5 states avenues for further studies. Eventually, Section 9.6 concludes with the policy implications of transnational land deals, land use, rural development and (agro-industrial) investment.

9.2 Summary of results

Under this section results are presented for each of the seven research questions. Each of the questions are handled in the form of academic papers which have either been published in a web of science journals, submitted, or under review. The contribution related to the 7th question is a working paper.

1. Which conceptual land deal framework better justify for the governance of transnational land deals?

Chapter 2 dealt with the search for land deal framework better justify the governance of transnational land deals. Scholarly contributions on transnational land acquisition argue towards participatory and win-win land deals (Anseeuw *et al.*, 2013; Azadi *et al.*, 2013; Fao, 2009). However, a ‘win-win’ situation is a necessary but not sufficient condition for land deals to become inclusive or effective green deals. To result in an inclusive land deal, the need exists to broaden the groups of stakeholders (i.e., in addition to the investor and investee) according to various but relevant parameters. Handling of competing interests without a comprehensive land deal framework in an effort to incorporate the diversified interests of land use and powers of stakeholders is a major challenge (Borras *et al.*, 2013; Margulis *et al.*, 2013). Which stakeholders with what power and interest should be framed within the broader ‘transnational land deal’ scenario? The indispensable role of strategic management tools in mapping stakeholders with possible power-interest combinations is crucial to the prevailing multi-polar governance challenges of transnational land grabbing. Consequently, the ‘power-interest grid’, a conceptual map that disaggregates the stakeholders, their power, and the magnitude of interests they are likely to reflect is relevant (Agle *et al.*, 1999; James *et al.*, 1986; Freeman, 1994; Ackermann and Eden, 2003). Therefore, while the recommendations made towards inclusive land deals is acknowledged, resolving conceptualisation limitations in relation to inclusive transnational land governance is so crucial.

In Chapter 2 it was tried to establish the context, i.e., a conceptual land deal framework which could further be refined and adapted at differing space and time scales. In order to arrive at an inclusive land deal framework, it was necessary to categorized stakeholders using power, interest, and legitimacy as the bases for classifying stakeholders. In a nutshell, the process was an effort made to extend the stakeholder approach of strategic

management (Freeman, 1984, 1994) to the contemporary transnational land deal which has plagued with governance-related conceptual deficiencies.

Using the power and interest, the land deal power-interest clustering (LD-PIC) framework was developed which classified stakeholders into four groups ('objects', 'players', 'leaders and context setters', and 'crowd'). Alternatively, by introducing 'legitimacy' in to the 'power' and 'interest' bases of classification, stakeholders in relation to land deal are further disaggregated into seven groups; according to the legitimacy-interest-power (LIP) land deal framework. It tried to resolve conceptualisation limitations for inclusive transnational land governance. Accordingly, actors in land deals are characterised and disaggregated into seven generic groups, i.e., 'inactive', 'discretionary', 'exigent', 'dominant', 'dangerous', 'dependent', and 'definitive' stakeholders. New frameworks that assist towards the advancement of inclusive or participatory land deal frameworks, i.e., the 'land deal power-interest clustering (LD-PIC)' and 'legitimacy-interest-power (LIP)' frameworks were developed. The chapter also suggested how to integrate the biophysical environment, stakeholders, governance, and institutions to deal the challenges of 'land grabbing'.

Employing the conceptual models into the real world land governance platform necessitates the revision of the conventional land deal policy frameworks. According to the conventional land policy framework, land deals are carried out with two principal actors who conclude land deal agreements; i.e., the owner of the land (usually the state, private owners or communities) and the investor who want the land. However, land is not like a mere commodity but a strategic resource and how to use it is not decided solely with 'buyer-seller' agreement, but with the participation of all relevant stakeholders irrespective of the power and interest they are endowed. To this end, the concepts explained about the two frameworks (i.e., LD-PIC and LIP) are important in evaluating land deals and their effects upon different social groups. For instance recently, the European Parliament start realizing that when land deals are executed on the ground their impact upon different social group is not uniform but in a considerably different manner whereby some benefit while other are on lose (Borras *et al.*, 2016).

After analyzing the involvement of EU-based corporate and financial entities in transnational land transactions, the Directorate General for External Policies at the

European Parliament offered a series of recommendations on how to deal with emerging issues of land acquisitions outside the European Union (Cotula, 2016; Borrás *et al.*, 2016). In the end, the chapter concluded that land deals should be inclusive, demonstrating inclusive land deal (ILD) framework as a function of the biophysical environment, governance and institutions, stakeholders, land use and other latent factors such as peculiar local variables.

2. Given the three dimensions of sustainability, the 'social acceptability', 'economic viability' and 'environmental conservation' of the TLDs have been studied, how much sustainable are transnational land deals (TLDs) for investors, host governments, and local communities?

Based on the three main aspects of sustainability, sustainable TLDs are described in the following equation: $SLD = f(SoS + EnS + EcS) + e$. Thus, the sustainability of land deals (SLD) is a function of the three main aspects: social (SoS), environmental (EnS) and economic (EcS) sustainability, and error term (e). How 'sustainable' are transnational land deals for the investor, the host country and the local communities in terms of social, economic and environmental aspects?" and "What are the main sub-indicators that lead to gain or loss in the social, economic and environmental aspects?" To answer the questions, descriptive meta-analysis was used to investigate the sustainability of the TLDs (Chapter 3). Trikalinos *et al.* (2008: 312) defined meta-analysis as "the quantitative synthesis of information from several studies".

With respect to social sustainability, the main drivers responsible for the social (un)sustainability of the TLDs, are the 'tenure arrangements' (TA) and the 'livelihood' (L). Accordingly, 'tenure arrangements' counts 98% wins for the investors, 100% wins for the government and only 5% win for the local communities. From this, it is clearly visible that the land deals made so far considerably favour governments and investors, it lead local communities to a total loss. From the land lease cases reviewed, 94% of them indicated unsustainability in the livelihoods of the local communities and small-scale farmers. Most often, the loss of (farm) land is accompanied by eviction or replacement, in some cases including violent actions from the government or the investor (Kenney-Lazar, 2012; Levien, 2012). When investors come and clear the land, contaminate water sources, or start hunting the local animals, this causes major damage to the local livelihood of many

communities. Pastoralists are especially affected by 'land grabbing' due to losing their grazing lands and the rise of fencing of territories that interferes with their lifestyle.

In terms of providing soft infrastructure to local communities (i.e., contribution in terms of health and education) what is promised by investors and the actual implementation on the ground is different. Though much is promised from investors and hence government and communities were considered as winners only a few case studies have documented the implementation of promises in terms of providing soft infrastructure parallel to their business investment. loss in social sustainability in security for the local communities as well as the investor(s). For almost 50% of the cases, TLDs resulted expropriation of land and hence community's evictions which often resulted in social conflicts and violence, for instance as described in Levien (2012). In terms of social differentiation the majority of the case studies show the collaboration between governments and the elite, diaspora or high class society: they win for almost all of the cases. On the contrary, the local communities face the loss in social differentiation for majority of the cases.

With respect to economic sustainability, the investor(s) gain in 90% of the studies by investing in TLDs and thus introduce foreign capital into the host country, by which the government gains economic sustainability in 97% of the cases. The local community and small-scale farmers lose in almost three-fourth (71%) of the cases reviewed, for instance, in terms of getting less incentives from the government, e.g. having to pay more for land than foreign investors, getting less tax free incentives, credit, etc. In terms of hard-infrastructure which is a more common compensation used by investors to benefit local communities, who gain in almost two-third (62%) of the cases reviewed and investigated. However, the benefit is also valid for the investors (89%) themselves and other people.

In terms of employment, the results of the meta-analysis show almost two-thirds (65%) of the cases evidenced TLDs did not generate the desired level (quantity and quality) of local employment. On the other hand, The majority (88%) of investors, gain from the cheap labour that is abundant in host countries. For the local community, the TLDs provide an increase in employment, but the jobs are often poorly paid, take place in harsh and sometimes unsafe environments, with little security (contracts) and hard working conditions (Grandia, 2013; Benjaminsen & Bryceson, 2012). Generally, both host governments and local communities experience loss in transnational land deals resulting in

a win-loss-loss status of the TLDs. Establishing good land governance is required so that local communities will share the benefits from TLDs. If not, the future state and life supporting systems for local communities will be ruined.

With respect to environmental sustainability, the most commonly affected environmental sub-indicator is forestry, or flora in general. It was also noticed that water and forests are also among the factors that attract investors. The loss of fauna could therefore be linked with the loss of flora, e.g. the clearing of forests. With an increasing monoculture production system, intense application of pesticides and other environmentally less friendly practices, for instance as indicated in Azadi *et al.* (2012), biodiversity is also affected adversely. *'...monoculture is eliminating the rich biodiversity of the Cerrados, which is only now becoming an object of conservation policies* (Wilkinson *et al.*, 2012: 432).

The search for land governance that can bring equitable benefit among investors, government and local people has continued. As stated by Peluso & Lund (2011: 669) *'There is no one grand land grab, but a series of changing contexts, emergent processes and forces, and contestations'*. The global surge in large-scale land investments is increasingly linked to the significant risks of negative impacts on access to and control over natural resources, food security, human rights, and the environment. A need arises to establish better investment business models that should promote inclusive land governance (Dereje *et al.*, 2015), integration with corporate social responsibility of operations (D'Amato & Roome, 2009; Kolk & van Tulder, 2010), and fit-to-purpose land administration systems (Enemark *et al.*, 2014).

3. What are the features of large-scale transnational land deals (LSTLDs) in the South (where Ethiopia is a case in point), and what are the emerging consequences?

To have a further understanding of land deals, in addition to the reintegration and synthesis of the findings from different countries through meta-analysis (as it is discussed under the second research question), it is essential to investigate them in a more particular context. Consequently, Chapter 4 discussed the features and ongoing consequences of large-scale transnational land deals (LSTLDs) from the scene of a country from the global south, i.e. Ethiopia is a case in point. It is a chapter which justified that LSTLDs are not only the

result of *global push factors* (such as the 2007-2008 world food price crises) but also *domestic pull factors* where governments of developing countries offered tracts of ‘free’ and unutilized lands to transnational investors.

In order to meet national development objectives (pull factors), the government of Ethiopia promoted the availability of more than 11.5 million ha of land and was able to attract many transnational investors. In the period of 2005 - 2015, it commercialized nearly 2.47 million ha. We found a significant variation among transnational investors regarding the land size they hold, at $F_{(2,335)} = 56.22$, $p < 0.0001$): foreign companies (mean = 17,018 ha, SE = 2,293), joint-ventures (mean= 5,143, SE = 1, 368), and diaspora (mean = 1,062, SE= 129). The government leased large swatches of land without conducting land valuation, feasibility studies, cost-benefit analysis, environmental impact assessment, and without adequately scrutinizing investors. Consequently, there is small investment performance progress, and many of the investors engage in speculation in the sector by using available policy loopholes. The land rental prices are between € 1.40 and 37.00 ha⁻¹yr⁻¹ for a lease period of 25-50 years, with the most common condition that the lease rates are negotiable and amenable after ten years from the first date of the rental agreement. The lease prices are extremely low even compared with local land rental lease rates. The lease agreements did not consider both the time value of money and appreciative value of land, which are important variables in investment decisions.

LSTLDs deals in Ethiopia are dominated by companies of the Global South, particularly entrepreneurs from India. Ethiopia is a good case in point that indicate the rising (at least the emergence) of South-South investment deals rather than the conventional explanations about North-South capital flows (Margulis *et al.*, 2013; Messerli *et al.*, 2014). Investment capital is flowing from Europe and North-America to the developing countries of the south where ‘land grabbing’ is carried on. However, three-fourths of the land deals show scant levels of performance. The contribution of LSTLDs is between 4.5 – 6% in raising domestic agricultural production but have resulted in non-performing loans for banks of the host country as well. The land deals are probably leading to financial-grabbing, where Ethiopian banks are end up with non-performing loans and then must hustle with chasing ‘investors’ to settle millions of loan that investors borrowed in order to run their projects.

The findings substantiate the dynamics in the usual North-South investment capital flow and the rise of South-South investment deals (Margulis *et al.*, 2013). However, with the context of moving capital, speculation drove non-performing loans and resulted in companies engaging in financial grabbing. Applying Ethiopia's policy of using agricultural land lease holding as collateral for investors (but not for small-scale farmers), banks in the country lent billions, which has resulted in an outstanding loan of 18.6 billion Eth Birr (\approx € 791 million). So far, less than one-third of the LSTDs are operational, and the whole commercial sector has only contributed in raising the agricultural production of the country by 6%. Had it been managed well, it could have significantly contributed to the national economy.

Emerging disputes between transnational investors and the government of Ethiopia can be worth mentioned (for instance the case of Karuturi Global Plc and Ethiopian government explained in Chapter 3). On the other hand, the pressure from transnational agricultural investments upon national economies, contracting parties, local communities, land and natural resources becomes visible. Hence, it is time for governments and stakeholders to work towards the formulation of effective legal frameworks to ensure the positive contribution of transnational agricultural and related investments to sustainable development. Furthermore, institutions started examining transnational land deals from different dimensions. For instance, examining the involvement of EU-based corporate and financial entities in transnational land transactions, European Parliament offered a series of recommendations on how to deal with emerging issues of land acquisitions outside the European Union (Borras *et al.*, 2016).

4. How much effective is the commercialization process of farmlands so far concerning the expected payoffs from agricultural investment in the Benishangul-Gumuz region of Ethiopia?

According to the Constitution of the Federal Democratic Republic of Ethiopia (GoE, 1997), the right of land ownership and other natural resources of the country exclusively belong to the State and the peoples of Ethiopia. Meaning, all subsidiary laws and regulations of the country which could be issued either by the federal or regional state bodies recognize usufructuary rights to land which can be in the form of state, communal or group, and private holdings. While the right to use and inherit land is preserved, private

ownership of land is prohibited. The main justification given for this system is that if land is privatized, small-holder farmers may sell it when they face financial difficulties (desperation sales) and ultimately the country's land would be in the hands of a few rich farmers. As regions are given the power to administer land, regional states in the country have enacted their regional rural land administration laws, regulations, and guidelines. As a result, land is leased to investors both by the federal and regional governments.

The division of power in administering land into federal and regional governments lacks clarity and hence there is a challenge in harmonizing the allocation of land for both commercial farming and government owned (federal or regional) development projects. For example, while the Benishangul-Gumuz regional government set 20–35 years as the maximum lease periods for investment lands in the region, there are companies in the same region with contracts of 50 years which agreed with Ministry of Agriculture, a federal government institution. Lease prices also vary, € 1.40 – 37 ha⁻¹ yr⁻¹ (by the federal government), € 3.14 – 4.4 ha⁻¹ yr⁻¹ (by the regional government). In the Benishangul-Gumuz region, until 2012, the total amount of land delivered to both foreign and domestic investors has taken the lead with 600,254 hectares. Land has leased without Environmental Impact Assessment (EIA) which was a requirement for any investment according to the law of the country. As a result, there has been deforestation and woodland degradation. While more than 63% of the investors started operation on agreed time, the rest are either requesting renewal of contracts due to various reasons, with unknown status, canceled agreements or ceased operation.

The average land size developed (or cultivated) by investors (158.32 ha) is significantly ($\alpha \leq 0.05$) lower than that of the average land size on which investors agreed to develop (461.45 ha) in a period agreed in the land lease contract. There is a higher variation among the amount of land delivered to investors (with standard deviation of 774.73) as compared to the variation among the amount of land developed so far (with standard deviation of 232.60 and $\alpha \leq 0.05$). The average land size developed by investors is significantly lower than that of the average land size on which investors agreed for development and hence the level of employment generated and other socio-economic contribution of investors is so limited. Investors either lack the capacity to develop the land that they took or they are discouraged to cultivate as agreed upon in the contract due to various reasons. On the other

hand, it gives a lesson that before leasing land to investors, adequate preparation should be made especially in ensuring the right type and size of land are leased to the right investors.

5. *What are the environmental responses on land deals? That is, what are the effects of commercial farms on peak discharge and suspended sediment concentration (SSC)?*

The runoff response and sediment transport in 20 sample catchments with a contrasted intensity of commercial farming was investigated. Results indicated that commercial farms have 51% higher peak runoff compared to traditionally managed lands. According to the results from the comparison we made on suspended sediment concentration (SSC), catchments dominated by commercial farms have a significantly higher SSC (mean = $6.44 \pm 2.23 \text{ g l}^{-1}$) compared to catchments without commercial farms (mean = $2.77 \pm 2.31 \text{ g l}^{-1}$). It was noticed that forests and woodlands have strong buffering effect but croplands are generating higher peak discharges and sediment transport. Leasing forests and woodland to agricultural companies has resulted in deforestation. Consequently, the increased runoff response may lead to downstream bank erosion, affects downstream communities, and the increased sediment transport poses a siltation threat to the 4.8 billion dollars hydropower reservoir of the GERD.

Furthermore, it was checked that the integrated index of forest cover and its distribution (RCD) as a better predictor variable for the catchment-specific peak discharge coefficient (C_p) than forest cover alone. Soil erosion is often considered as one of the central processes of land degradation and can be used as a desertification risk indicator (Sterk, 2003; Vanmaercke *et al.*, 2011), and hence, the results are parts of the warning to retard desertification. The smallholder traditional farmers are still better in controlling erosion than large-scale commercial farmers. “The Ethiopian farmer, however, is erosion minded. Evidence of this is visible all over the country” (Joyce, 1943: 36). Land degradation is contextual (Warren, 2002), and hence, both in-situ conservation and sediment trapping can play a role to reverse the situation.

6. *What determines the investor-local people interactive (ILPI) outcomes?*

Investigation was made about large-scale transnational land deals in one of the peripheral lowland regions of Ethiopia where *'the most dramatic changes are taking place'* (Lavers, 2012b:795). Much of the land considered for lease was assumed as a 'free and underutilized' peripheral lowland. The Benishangul-Gumuz region, a low-lying western Ethiopian region is an attractive case in point where the situation, however, is entirely different from the conventional assumption of 'underutilized' peripheral lowlands. There is a competitive demand for land from various users with divergent interests. For instance, for large-scale commercial farming, hydropower reservoir and buffer zones, state agro-industrial plantations, smallholder agriculture, delineation of parklands, refugee centers, and other purposes. Results indicated that large-scale transnational commercial land deals constituted 68% of the overall commercialized land in the region, higher than the African average of 60% (Osabuohien, 2014).

While more than half of the large-scale agricultural investors are either in dispute or confrontation status with local communities, less than a quarter of them have established a conformist or collaborative relationship with locals. In our pursuit of the factors which underpin investor-local people interactions, compensation for expropriation of land has a positive but not significant effect upon improving the relationship between investors and residents. Community consultation, agricultural experience among investors' key personnel, types of pre-lease land use classes, development of own water source by investors, and local employment significantly determine interactions to be either disputed, latent, or confirmatory. The investor-local people interaction could have been enhanced further towards a sound collaborative relation that better fulfils the interests of local communities and contribute towards win-win land deals. Competition for power among titular minority groups entangled key regional institutions from paying adequate attention towards timely resolution of investor-community disputes and maximization of plausible regional socio-economic achievements from land deals.

While there is a visible commitment from the central government regarding running some mega projects in the area, a flight of private capital out of the region is equally observable and our finding goes in line with the remark by Tom Lavers: *'...exploitation of the periphery for the benefit of the centre'* (Lavers, 2012a:127). So far, land in the region is a

‘cash cow’ where many private agri-businesses formally and informally compete for land for short term gain but neither with a subsequent reinvestment in the region nor with conservation of land. Although nature’s supportive capacity is dynamic (Cohen, 2011), depletion of land resources could be inevitable so long as Benishangul-Gumuz region is in a situation analogous to the commons tragedy where individuals behave contrary to the public good (Hardin, 1968). It is time to strengthen both the logical and logistic dimensions of land administration in the region.

Revising the regional constitution from the perspectives of complementary institutional instruments which strive for a more reasonable protection of minorities with the inclusive developmental mindset is essential (Lawson, 2010; UNDP, 2016). Instead of nullifying age old customary landholding systems, integrating them with emerging statutory land regulations is indispensable (Van Leeuwen, 2014). There is a need to prioritize and synchronize the competing demands for land in the region; we recommend a comprehensive cross-disciplinary, regional land use study to ensure sustainable and fit-for-purpose land administration (Enemark *et al.*, 2014).

As a result of deforestation and loss of habitat, biodiversity has been at stake in the study area (Dereje *et al.*, 2016a). While we appreciate the federal and regional governments’ commitment in establishing a biome conservation zone for the wild fauna and flora, the delineation of a parkland amid competing land users will not be a straightforward mission. Hence, the process should be made through meaningful participation of key stakeholders such as the local people, scientific groups, decision makers and the international community. Finally, using the generic regression function, we derived and demonstrated how an ordinal regression model (ORM) is administered to investigate ordinal categorical outcome variables, which can further be applied to related studies with different context and scale.

7. What is the effect of Large-scale transnational land deals (LSTLDs) upon the livelihood of indigenous communities?

Commercialization of land resulted in competition for local land resources. In the pre-land deal periods, local communities were wholly dependent on nature and engaged in shifting cultivation with a slash and burn practices. Before the arrival of commercial farms,

communities administer land by customary holdings. However, such forms of landholdings were not formally recognized by the regional land laws which were approved in 2010. Following the advent of commercial farmers, there has been a parallel increase in the arrival of small-scale commercial farmers who mostly come from highlands of Ethiopia to get lease land from local Gumuz households. Consequently, the local land lease price has increased for about ten folds compared to the pre-land scenario. As the Gumuz communities were prominently shifting cultivators who use so traditional and simple farming tools such as hoes, they were not used to farm using oxen or other animals like in the case of other parts of Ethiopia.

A radical shift in livelihood or transformation has occurred among local communities. As a result of the surging economic advantage of holding extra land locally, competition for more land sometimes lead to disputes and conflicts. Disputes are stronger especially over a land which either has not yet classified and assigned to a user or for a land which was provided for investors. Local communities survived the pressure from large-scale commercial farmers through renting of their holdings to highlanders in the short run. However, a rented land is being cultivated without conservation. Consequently, the lease price for 'degraded' farmlands will be minimal in the future, and the overall livelihood of Gumuz communities is at an apparent risk. It is time to diversify the sources of income among Gumuz households parallel to building their capacity in many directions ranging from financial saving to conservation of land. There should be a mechanism to monitor brokers' driven local informal land lease markets which are mostly distortive to normal land rental prices. As traditional local conflict resolutions are getting abandoned in almost all cases, local administration structures are busy with resolving disputes even for minor issues. It is important to maintain some of the constructive aspects of the local conflict resolution procedures, for example through modifying the michu and mangma.

Finally, it is important to note about the attitudinal change which came among local indigenous people as a result of commercialization of land. Previously, like the advisors in the World Bank, Western Ethiopian Gumuz communities had a long survived notion of 'abundant' land around them until they were restricted through a formal land holding certificate and observe competition for land. With all their limitations, probably land deals resulted in one of the most notable changes in the agrarian history of Ethiopia which transform citizens from shifting cultivators to sedentary farming communities though much has to be done interms of ensuring sustainable livelihood.

9.3 General conclusion

Although with an increasing plethora of literature, the term ‘land grabbing’ is full of ideological misconceptions and lack of factual information. The sustainability of transnational land deals as viewed from social, economic and environmental dimensions is in question. Land deals accomplished so far are prominently less inclusive and concluded with insufficient preparation, feasibility study, and analysis of available alternative. Although multinational investment has the potential to contribute positively towards economic growth and development, it is essential to ensure equity and sustainability. The major players in the global governance, particularly governments of countries in the developing South should reconsider their decision to engage in large-scale transnational land deals, and the way how they are doing it. It is also the time to evaluate their investment laws and land tenure arrangements from the perspectives of ensuring equitable and inclusive development.

While the desire for appropriate governance of transnational land deals is looming, conceptual deficiencies associated with land deals remains unresolved. It is also necessary to broaden the contemporary win-win land deal recommendations to an inclusive land deal framework. Win-win land deal recommendations usually acknowledge land deals as ‘buyer-seller’ ventures and land as a ‘commodity.’ However, in the dissertation, it is argued that land is a strategic resource with many functions and spatiotemporal values. Hence, land deals need be considered as multi-stakeholder inclusive investment arrangements which should be made with a sound understanding of the possible economic, social and biophysical effects and alternatives values of land.

Transnational land deals may play a favorable role in the host countries, investors and to a broader economic development if: (i) they are made with adequate preparation before concluding the deals (for instance, in terms of, land use planning, land resources valuation, and cost-benefit analysis), and (ii) the deals are inclusive and made with greater accountability and public transparency. To have a supportive role, they should also go in line with the fit-to-purpose land administration, sound business feasibility study, vigorous socio-environmental impact assessment, professionally negotiated contracts, and effective regulatory (and monitoring) frameworks. Integrated and catchment-based land resources

conservation is indispensable regardless of how land is dealt and who the user or owner of the land would be.

The study contributes to a better understanding of the nexus among large-scale commercialization of land, the natural environment, and local communities. The study pinpointed and critically explained the different misconceptions associated with 'land grabbing, and proposed further areas of study. Moreover, it suggested policy inputs to be considered so that economically feasible, socially acceptable and environmentally friendly agricultural investments thrive. Collaboration between local and international institutions in further research and development programs can play a prominent role in generating further evidence which will have both scientific and policy importance.

9.4 Critical perspectives: 'land-grabbing' misconceptions

The transnational land acquisition is not free from ideological misconceptions attached to large-scale investments. The most commonly traceable misconception that underpins it is that, there is availability or opportunity of surplus land which with investment can be turned into the generation of attractive profit for companies and jobs for developing countries. Globally, the destinations targeted for large-scale investment are commonly considered as empty lands. For instance, described as 'empty', 'idle', 'marginal', 'degraded', 'unused', non-forested, unproductive, etc. (Hagmann & Mulugeta, 2008; Lavers, 2012; Messerli *et al.*, 2014; Schneider, 2011; World Bank *et al.*, 2010). International Institutions such as the World Bank and FAO have sustained this misconception. For example, when the World Bank declares the availability of an enormous 'reserve' of potentially 'suitable' land of between 445 million and 1.4 billion hectares worldwide as figures stated in Alexandratos & Bruinsma (2012) and Deininger *et al.* (2011).

The second ideological misconception is the assumption that the chronic rural poverty and widespread hunger was based on a crisis of lack of agricultural investment, particularly foreign investment and the focus is given on agricultural production. Besides, vast advocacy was in the making that investments should need to be large-scale, agribusiness-

oriented, and corporate controlled so as to be capable of achieving higher international competitiveness in the increasingly integrated value chains of global agricultural production (World Bank, 2008). Making large-scale farms at the core, link the whole value chain through options, such as out-grower schemes (according to the World Bank) has been considered as an inevitable and 'logical' framework in extending the global capital towards rural economies. Consequently, it created ambition among governments of developing countries about the benefits of large-scale agricultural investment. However, agricultural investment should have seen from broader perspectives of making agriculture suitable for the small-scale farmers as well which require investment in small farming technologies and facilities.

The third ideological misconception associated with the transnational land deal is the consideration of land like other commodities, as a 'thing' solely with economic value. This supposition has led to the promotion of 'greater land security ' with an implication that land deals are beneficial provided that they based on the framework of secured property rights. 'Security' in a land use policy for a such a case mean providing, protecting/or promoting property rights of the exclusive users/owners of land; mainly referring to private and individual rights. However, with such a mindset land tenure security could also imply the property security of bigger landowners (i.e., 'modern' landlords) living in cities and relying on farm workers or tenants in making the land productive. The notion 'security' could also mean capital institutions such as the banks which sell liquid capital for profit, and are usually in need of collateral as a protection for payment default. In the present context of the large-scale land deal and global land acquisition 'security 'is nothing but referring to the security of transnational capital invested on land. Therefore, recommendations about 'land tenure security' require much care and scrutiny than thought. Land is a strategic resource which should be seen beyond the level of commodity and managed strategically with short-term, mid-term and long run societal needs.

The fourth misconception is that large-scale land deals are essential to approach scarcity, shortage of food and oil, i.e., to meet both food system needs and the need for 'cleaner and greener' fuels required to mitigate climate change. The arguments usually provided to both types of scarcities are mere oversimplifications of complex realities as they undermined enormous challenges to simple supply side deficiency or shortage and propose production

increment through large-scale investment as a solution. However, the sustainability of large-scale investment is in question.

Arguments which favor large-scale farming to resolve food scarcity undermined an already existed potential for food adequacy and the challenges in it such as the waste within the food supply chain and loss of harvests. Besides, they underestimated the food security consequences of diverting of land towards the production of non-food products, for instance, agro-fuels, feed, flower, fiber, and 'forests' such as rubber, pulp, timber, woodchips industrial tree plantations. Likewise, arguments about oil scarcity and the motto towards large-scale investment to secure agrofuels for 'green clean' energy has two basic limitations. First, the argument ignored that industrial agriculture (i.e., industrial biofuel crop farming and industrial livestock production) is among the leading emitters of carbon dioxide, nitrous oxide and methane which are key greenhouse gasses. Second, it ignored the current inefficiency as to how the global finite supply of fossil fuel is consumed. That is, a widely growing world's commercial transport sector so as to carry the bulk outputs of large-scale farm production, i.e., industrial food and non-food products over long distances across the world.

Discussions on transnational land acquisitions as a North-South investment deal is the other misconception which is rebutted at least in the case of Ethiopia where South-South land deals dominate. Although much of land is supplied to investors, the majority of the land dealt has not yet developed. The last misconception is about limiting the actors in a land deal to the 'buyer and seller' or a 'lessor and lessee' though there are many actors in the system that consciously or unconsciously play decisive roles in the process of transnational land deals. Consequently, it is essential to reconsider land deals from an inclusive and strategic perspective.

9.5 Avenues for further study

Under the conclusion section of each chapter, issues for further investigation are stated. However, under this sub-section, the major ones are stated. Ensuring upstream-downstream ecological restoration and land resources conservation through incentive arrangements such as the Payment for Environmental Services (PES) may play important role both for the safety of GERD, welfare of local communities, and conservation of nature. How to establish a PES arrangement so that GERD, local communities, and the natural environment thrive? is an interesting area of future research and development cooperation.

Land resource valuation, cost-benefit analysis for alternative land uses, and land use policy analysis can be promising areas of future research. River profiles, catchment characterization, upstream-downstream linkages of hydrological processes, and the hydro-physical interactions with the future manmade lake (i.e, the GERD reservoir) can be also be useful areas of studies in Benishangul-Gumuz.

1. How to govern transnational land deals so that they can have desirable contribution at local, national, and transnational levels ?
2. What is the agricultural production contribution of land deals in general and LSTLDs in particular?
3. What are the land use land cover effects of land commercialization?
4. How much is the level and effect of land acquisition by domestic investors (for instance in Ethiopia?)
5. How to harmonize the different land uses and competing interests for land? For instance, in the case of Ethiopia's Benishangul-Gumuz region where there are commercial farms, small-scale farms, state-sponsored agro-industrial projects, and parklands in the upper catchments while hydropower dam in the lower catchment?
6. The Benishangul-Gumuz region has an enormous variety of flora and fauna species which are under a threat of ecological degradation. For instance, woodlands which are dominated with a number of multipurpose tree species and are under a

continued threat of encroachment. However, due to the continuous pressure, the trees are on the verge of disappearance. Therefore, it is the time to map and establish a regional database for remaining tree species and their conservation. Tree species mapping and function identification study can play an important role.

9.6 Policy implications

Transnational agricultural and agro-industrial investment is increasing with a subsequently rising pressure over land resources and local people. It may play a supportive (but not a fundamental) role to promote national and local economic growth for developing countries which host transnational investment. Transnational land deals can have a favourable role to the host countries and investors if: (i) they are made with adequate preparation before the deals are concluded (example, land use planning, land resources valuation, and cost-benefit analysis), and (ii) the deals are inclusive and made with greater accountability and public transparency. To have a supportive role, they should also go in line with the fit-to-purpose land administration, sound business feasibility study, vigorous socio-environmental impact assessment, professionally negotiated contracts, and effective regulatory (and monitoring) frameworks. Besides, an integrated and catchment-based land resources conservation is crucial regardless of who the user and owner of the land would be.

Placing profit-oriented companies in charge of employment generation and national food security is not a wise policy decision. Furthermore, stronger national agri-industrial development policies and strategies which consider socio-economical, agro-ecological and spatiotemporal variability within a nation are required to strengthen the sustainable production capacity of smallholder farmers. More preferably, sound land resources use strategies and land use decisions should arise from within through national debates and strategy building processes that involve farmers of all type and in consideration of context-specific needs and demands. More importantly, better employment opportunity is not generated by leasing large-tracts of land to capital-intensive commercial farmers. Rather, encouraging the unemployed youth and providing the necessary support to invest on labour intensive cooperative farms can absorb much labour and raise the income levels of millions of citizens in Ethiopia.

With specific reference to the Benishangul-Gumuz region of Ethiopia, first it was important to conduct baseline survey and valuation of resources before reaching a decision to commercialize large tracts of land. In any of the times in its history, there are competing interests for land resources and pressures upon local communities and ecology. While constructing a multibillion hydroelectric power dam (i.e., the GERD) at the lower catchment, commercialization of large tracts of land in the closer upper catchments is not feasible and requires reconsideration. Recently, government has decided to establish a park (i.e., biome conservation zones for the wild fauna and flora) amid competing land users. Deleanting a park is not a mild undertaking, and hence it necessitates meaningful participation of key stakeholders such as the local people, the scientific group, decision makers at different levels and the international community.

Irrespective of the current level of influence and degree of interest, many stakeholders should be considered in land use decisions. Land deals should be made with an inclusive decision and participatory leasing processes. The ambitious promotion by the government about the ‘availability’ of more than 11.5 million ha of land is invalid and hence before striving for commercialization of land, it is important to be realistic and develop an integrated land information system. Valuation of a resource precede its marketing. Land valuation should be held before making investment decisions. While agricultural investment has its own unique features, challenges, and business style and handing it with the same investment policy tools with other areas of investment (such as construction, services, and manufacturing) is not feasible. It is time for Ethiopia to formulate a separate policy and implementation guidelines for agricultural investment. There is a need for a framework that help to resolve land lease disputes.

According to the national investment proclamation, Proclamation No.456/2005, (GoE, 2005a), an investor who has leased rural land can present his use right as collateral to borrow capital from financial institutions in the country. It is leading banks to a higher level of outstanding loans, and neither investors are seen in allocating the finance on agriculture as they promised nor they settled the loan within the agreed period. An investor is assumed to come with an own financial resource to deploy on a leased land than competing for finance from financial institutions of a developing country where there is scarcity of capital.

Expropriation law of landholdings for public purposes and payment of compensations proclamation, i.e. Proclamation No.455/2005 (GoE, 2005b) which disfavours smallholder farmers while considering investors as landlords should be revised to be a more inclusive proclamation. Besides, the law related to the payments of compensation for property situated on landholdings expropriated, Regulation No. 135/2007 (GoE, 2007), lacks equity and hence should be revised. Beyond the formal laws and procedures, corporate social responsibility of businesses and ethical business operations should be promoted parallel to investment decisions in general and agricultural investment processes in particular. Finally, diversification of income sources, provision of infrastructure and improving access to financial institutions to local people is essential.

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Appendix

Appendix 1: The major evolutions of land use-land governance institutional frameworks in Ethiopia.

Proclamation(Regulation)	Basic content related to land
1955: Revised Constitution of Ethiopia(article 130)	All natural resources of the country (water , forest, land, etc) became state domain. Land was part of the sacred trust and meant for the ‘benefit of both the present and succeeding generations of people’ in Ethiopia (IGE 1955). However the imperial system was characterized with feudal lords who possessed land and the majority citizens were tenants. Until the end of the imperial government in 1974, the land tenure system of the country was complex and intricate, it varied from region to region following the occurrence of different socio-political events in the country. Generally, the tenure system could be classified as private tenures and usufructuary tenures. Usufructuary tenure system is mainly based on the type of institutions which hold the eventual reversionary right over the land and could be classified as <i>rist</i> , <i>semon</i> , and <i>maderia</i> , or <i>yemengist</i> (Cohen 1973; Dessalegn 1984). Later in 1974, ownership for land became one of the major causes for the socialist driven revolution in the country which overthrew the imperial/feudal system in the country. ‘Land to the tiller’ was one of the mottos of the revolution.
1975-1982: Public Ownership of Rural Lands proclamation, proclamation no. 31/1975; Peasant Association Organization and Consolidation Proclamation no.71/1975; amended by Peasant Associations Consolidation Proclamation	Abolished (without compensation) all forms of private ownership, and all land used for agriculture or grazing purposes throughout the country declared to become the collective property of Ethiopian people. The law stipulated that no compensation would be paid for rural land or tree crops or any forest on such land (GOE 1975a). In the same year, the proclamation was strengthened by the establishment of peasant associations to ensure

no.223/1982	equitable distribution of land and to expand the base of socialist relations that would work for the built up of democracy in the country (GOE 1975b). Later in 1982, local peasant associations (i.e, <i>kebelle</i> peasant associations) were given the powers and duties to distribute land within their territorial delimitations (GOE 1982).
1995: The constitution of Ethiopia, proclamation no.1/1995, article 40.2; article 50.2	The 1995 constitution of Ethiopia is the existing supreme law of the country, its land and all other natural resources. Land is commonly owned by the Nations, Nationalities and Peoples of Ethiopia and it is not subject to sale or to other means of exchange. Regional states are given the power and mandate to administer land and other natural resources in accordance with federal laws. Peasants and pastoralists have usufruct right over land without any charge and without time limit including the safeguard against expulsion from ‘their’ land except if it is intended for public purposes which is subject to compensation commensurate with the value of the property on the land (GOE 1997).
1997: Rural Land Administration Proclamation no.89/1997, Later repealed by proclamation no. 456/2005.	Stated general guidelines and set broader principles about the contents of land administration law to be enacted by each regional council, such as ensuring free assignment of landholding rights to peasants and nomads without any discrimination of sexes but with transparency, fairness and participation (GOE, 1995; 1997).
2002: Investment proclamation. 280/2002. Later repealed by investment proclamation no.769/2012	So as to widen the participation of foreign investors in addition to the domestic ones. Stated four forms of investment and set minimum capital requirements for foreign investors (100,000 USD for single investment; 60,000 USD jointly with domestic investors), allocation of land, and further rights and privileges for different forms and types of investors (GOE 2002a).
2004: Reorganization of government organs of Ethiopia, proclamation no.380/2004	Restructured the powers and duties of the Ministry of Agriculture and Rural Development mandated with the power to draft land use policy, land administration guidelines, conservation and use of forest and related resources such as wildlife (GOE 2004).

<p>2005:Expropriation of landholdings for public purposes and payment of compensation Proclamation no.455/2005</p>	<p>Defined the key principles that should be considered to determine a person whose landholding has expropriated for various development purposes. It also stated the state bodies that have the mandate to determine the responsibility to pay the compensation for land. Generally, it is part of the constitutional requirements of the constitution of the country, article 51/ (5) and article 40/ (8) to enact laws concerning the utilization of land. A district (<i>woreda</i>) or urban administrations are given mandate to expropriate rural or urban landholdings for public objectives (GOE 2005a).</p>
<p>2005: Federal Rural Land Administration and Land Use Proclamation no. 456/2005(which repealed the Federal Land Administration Proclamation, 89/1997)</p>	<p>Targeted to increase the land tenure security, enhance farm land productivity, and circumvent expectation of land redistribution among citizens. Farmers hold a perpetual use right on their farm holdings, and this use right should be strengthened through the issuance of land holding-land use certificates and registration, followed by cadastre. A federal framework for rural land administration and land use proclamation, each regional state is mandated to arrange its own legal framework to register land in a region (GOE 2005b). Security of land tenure versus agricultural investment has been a point argument which requires further investigation. Although the relationship between tenure security of land and agricultural investment varies, tenure security has a significant effect upon farmers' investment in certain counties in Ethiopia (Dereje and Abebe, 2011).</p>
<p>2007: Payment for compensation for property situated on landholding expropriated for public purposes, Council of Ministers regulation no.135/2007</p>	<p>The amount of compensation for a property situated on a land to be expropriated should be determined on the basis of current market prices. Provisions are set concerning compensation for a building, fences, non-crops, perennial crops, trees, protected grass, and permanent improvement on rural land, relocated property, a mining license, and burial ground are . Furthermore, formulas for calculating the amount of compensation for the stated properties are set (GOE 2007).</p>
<p>2009: Benishangul Gumuz Region Rural Investment Land Use Regulation,</p>	<p>Explains investment land supply procedures, investment landholding, lease system and duration of land use, forest protection, land evaluation, land use</p>

Regional Council's
Regulation no.29/2009

contract, land lease price in the different districts (*woreda's*) of the region, rights and obligations of investors, etc (GBGR 2009)

2010: Definition of power and duties of executive organs, proclamation no.691/2010

The proclamation established twenty ministries one of which was Ministry of Agriculture. The Ministry of Agriculture and Rural Development (MoARD) is dissolved and replaced with Ministry of Agriculture (MoA). Powers and duties which had formerly given to the MARD were transferred to the MoA. The MoA is mandated to ensure conservation of biodiversity, and '*the administration of agricultural investment lands entrusted to the federal government on the basis of powers of delegation obtained from regional states*' (GOE 2010b:17)

2010: Agricultural Transformation Council and Agency Establishment, Council of Ministers regulation no.198/2010

Lead the identification, design and effective implementation of solutions to the challenges of agricultural development, for instance, identification of soil fertility problems and solutions for the same (GOE 2010a).

2012: Investment proclamation no. 769/2012, it repealed investment proclamation no.280/2002

Stated provisions which could enhance investment not only in the agriculture but also in the manufacturing sector and improves some laws stated in the previous investment proclamation. Areas of investment for domestic investors, foreign investors, and investments to undertaken jointly are delineated. Amendment on minimum capital requirements for foreign investors are set (GOE 2012a)

2012: Investment Incentives and Investment Areas Reserved for Domestic Investors, Council of Ministers regulation, regulation no.270/2012

Specified various types of incentives for investors depending on different criteria such as type of investment, location of investment, performance of investment or progress. Excerptions for income tax and exemptions from custom duty for 2 to 9 years. Specifically, investors who invest in Afar, Benishangul Gumuz, Gambela, and Somale Regions are entitled with 30% income tax reduction. Similar income tax reduction will be made if companies invest in Guji and Borena zones of Oromia Region and in many of the areas in the State of Southern Nations and Nationalities People (GOE 2012b).

Appendix II: Computation sheet for Manning's Roughness

Coefficient: Cowan's (1956) method

Objective: To determine peak discharge in lowland where both commercial and conventional farming practices exist: Evidences from Western Blue Nile Catchment

Factor	Description	Recommended value
Material involved (n_0)		
Earth	Bottom/sides of channel composed of soil	0.020
Rock cut	Rock cut in sides of channel	0.025
Fine gravel	Bottom/sides of channel composed of fine gravel	0.024
Coarse gravel	Bottom/sides of channel composed of coarse gravel	0.028
Cobble	Bottom/sides of channel composed of cobbles	0.030-0.050
Boulder	Bottom/ sides of channel composed of boulders	0.040-0.070
Degree of irregularity(n_1)		
Smooth	Smoothest channel in a given bed material.	0.000
Minor (slight scour)	Having slightly eroded or scoured side slopes.	0.005
Moderate (slumping)	Channels having moderate to considerable bed roughness and moderately eroded sides	0.010
Severe (eroded banks)	badly eroded sides of canals or drainage channels; irregular surfaces of channel	0.020
Variation in channel cross section(location of thalweg) (n_2)		
Gradual	Size/shape of cross sections change gradually	0.000
Alternating occasionally	Cross sections alternate occasionally, or the main flow occasionally shifts from side to side owing to changes in cross-sectional shape	0.005
Alternating frequency	Cross sections alternate frequently, or the main flow frequently shifts from side to side owing to changes in cross-sectional shape	0.010-0.015
Effect of obstructions(n_3)		
Negligible	Scattered obstructions occupy <5 % of the cross section	0.000
Minor	Obstructions occupy < 15% of the cross section	0.010-0.015
Appreciable	Obstructions occupy from 15% to 50% of the cross-section	0.020-0.030
Severe	Obstructions occupy more than 50% of the cross-section	0.040-0.060
Effect of vegetation(n_4)		
None	No vegetation cover	0.000
Low	Grass/weeds	0.005-0.010
Medium	Brush, none in streambed	0.010-0.025
High (young trees)	Young trees	0.025-0.050
Very high	Brush in streams, mature trees	0.050-0.100
Degree of meandering (m)		
Minor	Ratio of the channel length to valley length is 1.0 to 1.2	1.00
Appreciable	Ratio of the channel length to valley length is 1.2 to 1.5	1.15
Severe	Ratio of the channel length to valley length is > 1.5	1.30

Appendix III: Questionnaire

HOUSEHOLD QUESTIONNAIRE: INTERNATIONAL LAND DEALS, LOCAL PEOPLE'S LIVELIHOOD, AND ENVIRONMENT NEXUS. A Research Project Sponsored by the Special Research Fund of Ghent University, Belgium (BOF) for the Degree of
DOCTORATE (PHD) in SCIENCES: GEOGRAPHY at GHENT UNIVERSITY

This questionnaire will be treated with total confidentiality and strict anonymity. The questionnaire is best to be filled by the household head

Household code: _____; Date of interview: _____; Village _____

SECTION 1: RESPONDENT'S PERSONAL DETAIL. (Respondent Code _____)

1. Address: District _____, ~~Kebelle~~ _____.
2. Age of the respondent: _____ years 3. Age of the household head: _____
4. Gender: (1) Male _____; (0) Female _____
5. Marital status: (1) Single; (2) Married/Living together; (3) Widowed; (4) Divorced; (5) Separated
6. Religion: (1) Orthodox; (2) Catholic; (3) Muslim; (4) Protestant; (5) Other, _____; (6) No religion
7. Are you currently settled in your original village where you live before the land deal? (1) Yes (2) No
8. When did you settle in this place? _____ years ago
9. When was this family formed? _____ years ago
10. Family size? _____ people (including the household head)

Family member	Sex	Age	Relation to household head *	Level of education*	Main occupation*
1= Household head					
2					
3					
4					
5					
6					
7					

Codes*

Relation to household head:

1= Husband	2=Wife	3=Son	4=Daughter	5=Close relative	6= Dependent	7= Hired worker
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Level of education:

1=Illiterate	2=Read & write	3=Primary I (1-4)	4=Primary II (5-8)	5=High school (9-10)
6=Preparatory (11-12)	7= Vocational	8=Diploma	9=Degree and above	

Type of occupation

1=Crop farming	2=Livestock production	3= Trade	4= Handicraft	5= Daily labour	6= Other
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SECTION II: LAND HOLDING and LAND USE

11. [Total land size owned by the]household **before** the land deal (in ha)? _____
12. Total land size owned by the household **after** the land deal (in ha)? _____
13. How many parcel of land did you have **before** the land deal (in ha)_____
14. How many parcel of land did you have **after** the land deal (in ha)_____
15. Did you have land use certificate **before** land deal period? (1) Yes (2) No
16. Do you currently have land use certificate **after** land deal period? (1) Yes (2) No
17. How useful is having a land use certificate?
(1) Useless (no use) (2) Little use (3) Some use (4) Much use (5) Extremely useful
18. Do you expect that you will lose your land in the next 15 years
(1)Yes (2) No (3) I don't know
19. Do you expect that you will use your land throughout your life time?
(1)Yes (2) No (3) I don't know
20. Do you expect that there will be land redistribution?
(1)Yes (2) No (3) I don't know
21. If there will be land redistribution, you will be more beneficiary
(1) Strongly disagree (2) Disagree (3) Indecisive (4) Agree (5) Strongly agree
22. Consider your current parcels of land and fill the following table

No.	Means of acquisition	Area of plot (approx.ha)			Distance of plot from home (minutes)		
		1 st	2 nd	3 rd	1 st	2 nd	3 rd
1.	Inherited or gift from family						
2	Occupation of 'free land'						
3	Through land distribution						
4	Sharecropping						
4.	Rented land						
6.	Mortgaged land						

23. Land holding and farm characteristics (fill the table below):

Type of land	Land size (approx.ha)	
	Before the deal	After the deal
Cultivated land		
Fallow land		
Grazing land		
Homestead area		
Forest (or) bush land		
Others, mention		

24. How much land did you cultivate by yourself in the following years:

2003 Ec	ha	2004 EC	ha	2005 EC	ha	2006 EC	ha
---------	----	---------	----	---------	----	---------	----

25. How much land did you rented out in the following years:

2003 Ec	ha	2004 EC	ha	2005 EC	ha	2006 EC	ha
---------	----	---------	----	---------	----	---------	----

26. How much is land rent out price per hectare? _____ Birr

27. How do you cultivate your land? (make a tick mark wherever applicable)

Means of cultivation	Before the deal	After the deal
By hand (wood hoe)		
By hand (iron or doma)		
By Donkey power		
By oxen		
Other (mention)		

28. You have land which is adequate to produce sufficient food for your family?

(1) Strongly disagree (2) Disagree (3) Indecisive (4) Agree (5) Strongly agree

29. If you believe that, you have inadequate land, how much extra land do you require? _____ ha.

30. How much hectare of your land is provided for investor(s) so far? _____

31. If your land was given for an investor, did you get compensation/ replacement? (1) Yes, (2) No

SECTION III: COMPANY LOCAL PEOPLE INTERACTION

32. Did you face eviction from your original village following the land deal?				Yes	No
33. If you faced eviction, how do you evaluate your current village compared to your previous one?	1.Worst	2.Bad	3.Same	4.Better	5.Best
34. How much consultation is made with you before land is given for investors?	1.None	2.Little	3.Some	4.Much	5.Very much
35. Though land is given for investors, community's land use right is respected	1.Strongly Disagree	2.Disagree	3.Indecisive	4.Agree	4.Strongly agree
36. Land deals resulted in deforestation in your kebele	1.Strongly Disagree	2.Disagree	3.Indecisive	4.Agree	4.Strongly agree
37. How much do you think is deforestation occurred due to investors?	1.None	2.Little	3.Some	4.Much	5.Very much
38. How much access do you currently have to forests you used to have before the deal	1.None	2.Little	3.Some	4.Much	5.Very much
39. How much soil erosion occurred following land deal	1.None	2.Little	3.Some	4.Much	5.Very much
40. How much is the amount of wild life loss occurred due to land deal	1.None	2.Little	3.Some	4.Much	5.Very much
41. Local community get employed in commercial farms	1.Strongly Disagree	2.Disagree	3.Indecisive	4.Agree	4.Strongly agree
42. How many local people get employed in the commercial farms in your village	1.None	2.Little	3.Some	4.Much	5.Very much
43. Level of dispute/conflict of interest you have with the investors?	1.None	2.Very low	3.Moderate	4.High	5.Very high
44. It is good to have commercial farmers and companies	1.Strongly Disagree	2.Disagree	3.Indecisive	4.Agree	4.Strongly agree
45. Threat of land eviction in the near future?	1.None	2.Very low	3.Moderate	4.High	5.Very high

46. If investors in your area get good price to rent out their land, how much land do you think will they rent out?	1.None	2.Little	3.Some	4.Much	5.All theirland	
47. If your neighbor get good price for his land, how much land will he rent out?	1.None	2.Little	3.Some	4.Much	5.All theirland	
48. If you get good price from investors, how much land will sell for them?	1.None	2.Little	3.Some	4.Much	5.All theirland	
49. In your belief, the land you use is ultimately belonged to _____	1.Myself	2.My family	3.kebelle	4.Government	5.community	6.Other, mention.....

50. Which of the following happened to your household after the land deal?

50.1 Advantages:	
(1) A family member got employed	(4) We got clinic
(2) We got road	(5) We got clean water
(3) We got school	(6) We got better farming tools
(7) We got training on new skills	(8) Other(s), mention _____
50.2 Disadvantages	
(1) We lost our land	(5) Brought cultural clash
(2) Deforestation	(6) Loss of forest food
(3) Competition for water sources	(7) Other, mention _____
(4) Denied access for forest	

51. How many of your family member involve in paid activities for commercial farms in the previous 5 years ?

- (a) 0 (b) 1 (c) 2 (d) 3 (e) 4 (f) > 4

SECTION IV: LIVELIHOOD STRESS AND COPPING MECHANISMS

52. Before the land deal, which were the months of food shortage to your household? Tick where applicable:	1.January	2.February	3.March	4.April
	5.May	6.June	7.July	8.August
	9.September	10.October	11.November	12.December
53. After the land deal, which are the months of food shortage to your household? Tick where applicable:	1.January	2.February	3.March	4.April
	5.May	6.June	7.July	8.August
	9.September	10.October	11.November	12.December
54. Before the land deal, which were the months of water shortage he household? Tick where applicable:	1.January	2.February	3.March	4.April
	5.May	6.June	7.July	8.August
	9.September	10.October	11.November	12.December
55. After the land deal, which are the months of water shortage he household? Tick where applicable:	1.January	2.February	3.March	4.April
	5.May	6.June	7.July	8.August
	9.September	10.October	11.November	12.December
56. Before the land deal, which were the months of fodder shortage to your cattle ? Tick where applicable:	1.January	2.February	3.March	4.April
	5.May	6.June	7.July	8.August
	9.September	10.October	11.November	12.December
57. After the land deal, which are the months of fodder shortage to your cattle ? Tick where applicable:	1.January	2.February	3.March	4.April
	5.May	6.June	7.July	8.August
	9.September	10.October	11.November	12.December
58. 44. Before the land deal, how long was the average fallow period in using your land	(1) Less than a year	(3) 2-3 years	(5) 4-5 years	
	(2) 1-2 years	(4) 3-4 years	(6) > 5 years	
59. After the land deal, how long is the	(1) Less than a year	(3) 2-3 years	(5) 4-5 years	

average fallow period of your land	(2) 1-2 years	(4) 3-4 years	(6) > 5years
60. Before the land deal , how did you cope up during the months of food shortage?			
(1) Sale of cattle	(4) Off-farm employment	(7) Migration	
(2) Sale of small animals such as chicken	(5) Gold mining	(8) Land rent-	
(3) Hunting and forest food	(6) Consumption credit	(9) Other, mention:....	
61. After the land deal , how are you coping up during the months of food shortage?			
(1) Sale of cattle	(4) Off-farm employment	(7) Migration	
(2) Sale of small animals such as chicken	(5) Gold mining	(8) Land rent-	
(3) Hunting and forest food	(6) Consumption credit	(9) Other, mention:....	

62. What are the main sources of feed for your livestock? (1) Grazing land (2) Hay (3) Straw
 (4) Maize and Sorghum hola (5) Fallow land (6) Forest and bush land (7) Other,
63. How grazing lands are owned in your area? (1) Individual household (2) Communally
 (3) Freely accessed (4) State owned (5) Other,.....

64. SECTION V: RESPONDENT'S WEALTH STATUS (Livestock) : Fill the table below

Livestock type	Before the land deal		Now	
	Number	Unit price(Birr)	Number	Unit price(Birr)
Oxen				
Cows				
Bulls (korma)				
Calves (tja)				
Heifer(gjder)				
Goats (fyel)				
Sheep (beg)				
Mule (beklo)				
Donkey				
Chicken (poultry)				
Honey bee (in hives)				

65. How many mango trees did you have before the land deal? _____ How many mango trees now? _____
66. Main source for household's income (Give rank for your choice 1-3)

Main source of income	Before the land deal	Now
Crop farming		
Livestock production		
God mining		
Trade		
Share cropping		
Daily labour		
Employment		

Land rent out		
Compensation from land deal		
Sale of fruit		
Sale of Honey		
Other, mention		

67. SECTION VI: HOUSEHOLD ASSET OWNERSHIP (Non-livestock) : Fill the table below

Furniture and Durables	Quantity			Agricultural Equipment	Quantity		
	5 years ago	Now	Current price		5 years ago	Now	Current price
Radio				Mofer + kenber			
Tape recorder				Maresha			
Television				Hoe (Mekoferia)			
Motor vehicle				Spade (akafa)			
Beds (alga)				Sickle (Machid)			
Chairs				Medosha+ Doma)			
Tables				Axe + Fas (misar)			
Gold (gm)				Saw (megaz)			
Watch/Clock				Traditional beehive			
Cupboard (kumsatin)				Modern beehive			
Bicycle				Knapsack Chemi Sprayer			
Mobile phone							
Barrel (bermil)							
Jerikan/ensra							
Gan (borde metmekiya)							
Fanos/Masho							

68. SECTION V: INFRASTRUCTURE AND PUBLIC SERVICE: Fill the following table

Item	5 years ago	Now
Household Access to electric power (hours in a day)		
Distance to nearest farming company (minutes)		
Distance to nearest extension agriculture service (minutes)		
Distance to nearest market (minutes)		
Distance to the nearest kebele admin office (minutes)		
Distance to nearest health clinic (minutes)		
Distance to drinking water source (minutes)		
Distance to nearest road (minutes)		
Distance to nearest credit institution (minutes)		
Distance to nearest bank (minutes)		
Access to telephone services?		
Distance to nearest telephone network area(minutes)		

69. If you have access to credit, name the credit institution or source of your credit? _____
70. To what extent that availability of private companies has helped your community to get access to the above services? (a) None (b) Little (c) Some (d) Much (e) Very much

71. SECTION VII: INCOME SOURCES. Your income during one year period (January 2014 –December 2014)

Crops sold	Amount sold	Unit Price (Birr)	Total Income (Birr)	Crop	Amount Sold	Unit Price (birr)	Total Income (Birr)
Maize				Tomato			
Sorghum				Other vegetables			
Barley				Garlic			
Sesame				Other spices			
Groundnut				Other			
Soya bean				Other sources of household income			
Pea				Income source	Monthly Income (Birr)	Yearly income (Birr)	
Other, specify				Employment wage			
Fruits				Sale of livestock			
Banana				Sale of gold			
Mango				Remittance			
Lemon				Sale of fire wood			
Avocado				Sale of charcoal			
Other				Sale of honey			
Vegetables				Aid			
Pepper				Petty trade			
Cabbage				Pottery			
Onion				Share cropping			
Potato				Other			
Other							

SECTION VII: SOIL EROSION AND CONSERVATION

72. Before the land deal, how much was level of soil erosion in your village/watershed?
(1) None (2) Little (3) Some (4) Much (5) Very much
73. After the land deal, how much was the level of soil erosion in your village/watershed?
(1) None (2) Little (3) Some (4) Much (5) Very much
74. Before the land deal, how much was the level of soil conservation measures in your village/watershed?
(1) None (2) Little (3) Some (4) Much (5) Very much
75. After the land deal, how much do you think is the current level of soil conservation measures?
(1) None (2) Little (3) Some (4) Much (5) Very much
76. What is the major source of your current soil conservation knowledge?
(1) Development agents (DA) (2) Neighbouring farmers (3) Investors (4) Parents (5) Others
77. Do you practice soil and water conservation? (1) Yes (2) No
78. Which one of the following soil and water conservation measures do you practice?

(1) Stone bunds	(2) Soil bunds	(3) Cut-off dam	(4) Water way
(5) Change in farm land	(6) Contour bunding	(7) Vegetative bunding	(8) Strip cropping
(9) Intercropping	(10) Mulching	(11) Other, mention	

79. SEC. VIII: EXPENDITURE :Household expenditure during preceding 3 months period (Dec, Jan, Feb)

Food type consumed	Consumed (kg) (lit)	Unit price (Birr)	Expenditure (Birr)	Food type consumed	Amount Consumed (Litter) (kg)	Unit price (Birr)	Expenditure (Birr)
Cereals				Beverage and spices			
Maize				Borde			
Sorghum				Arequi			
Wheat				Beer (Bira)			
Others, mention				Soft drink			
				Coffee			
				Honey			
Oil seeds				Berbere (kg)			
Sesame				Salt (kg)			
Sunflower (suf)				Cooking oil			
Nuga				Onion (key shinkurt)			
				Garlic (Nech shinkurt)			
Vegetables				Jingib/ginger			
Potato				Otherspices			
Tomatoes				Non-food expendit. (For one year :mega 2006 EC –Yeka 2007 EC)			
Carrot				Clothe for family			
Gomen (kosta, salata, tikle gomen etc)				Energy consumption (Kerosene, match,.....)			
Kana				Kitchen equipments (cooking pots, Medija)			
Pumpkin				Soap, Qmo, etc			
				Cosmetics (including butter)			
Fruits				Linens (sheets, towel, blankets)			
Mango				Furniture and Lamp/torch			
Habab/watermelon				Transport materials			
				Building material for house			
				Ceremonial expense (eg. Tezlar, serge, etc...)			
				Contribution to Debo			
Roots and tubers				Donation to Gumuz development			
Kma				Compensation payments (Eg. rape, marriage...)			
Qanges				Modern medical treatment and medicine			
Banbure				Bills (water, electricity)			
Milk and other				Fertilizer (in Kg)			
Milk				Other expenditures, mention.....			
beef meat							
Mutton/goat							
Chicken							
Eggs							
Pork (asama) and jarf meat							

Thank you very much

Dereje Teklemariam (PhD student, Socio-Economic Geography Group, Department of Geography, Ghent University, Feb.2015)

Appendix IV: Adult equivalence scales

Year of age	Men	Women
0-1	0.33	0.33
1-2	0.46	0.46
2-3	0.54	0.54
3-5	0.62	0.62
5-7	0.74	0.70
7-10	0.84	0.72
10-12	0.88	0.78
12-14	0.96	0.84
14-16	1.06	0.86
16-18	1.14	0.86
18-30	1.04	0.80
30-60	1.00	0.82
60 +	0.84	0.74

Source: Adapted from Dercon & Krishnan (1998)

Dereje Teklemariam (Debre Birhan, Ethiopia) obtained BA (Mekelle University) and MA (Addis Ababa University) in Ethiopia. He was also an Erasmus scholar who received MA in Agricultural Development (Copenhagen University, Denmark), and MSc in Agroforestry (Bangor University, United Kingdom). In Mekelle University, he lectured different courses and conducted research. Dereje started a PhD in 2012 funded by the Special Research Fund (BOF) of Ghent University and based in the Social and Economic Geography research group (SEG). By applying combinations of methods, his research focusses on the features of large-scale transnational land deals and their effects on the environment and livelihood. Supported by primary data from western Ethiopian lowlands, the study contributes towards a better understanding of the nexus among large-scale commercialization of land, the natural environment, and local communities. The findings of the study were presented at several national and international conferences and were published in international journals.

