

Land and Poverty Conference 2018: Land Governance in an Interconnected World

March 19-23, 2018, Washington, DC

Impacts of Large Agricultural Investments - a comparative analysis from three African countries

Keywords: Large-scale land investments, land use change, natural resources, food security, governance business models; sustainability trade-offs.

Authors: Markus Giger¹, Ward Anseeuw², Sheryl L Hendriks³, Michael Van Der Laan⁴, John Annandale⁴, Magalie Bourblanc⁵, Eve Fouilleux⁵, Sara Mercandalli⁶, Perrine Burnod⁷, Aurélien Reys⁵, Sandra Eckert¹, Boniface Kiteme⁸, Christoph Oberlack¹, Julie Zähringer¹, Camilla Adelle⁹, Peter Messerli¹

This research was part of the Afgroland project. Afgroland is a project financed jointly by France, South Africa and Switzerland through the Belmont Forum and Joint Programming Initiative on Agriculture, Food Security and Climate Change (FACCE-JPI). The Funding partners are: Agence Nationale de la Recherche, France ; National Research Foundation, South Africa and Swiss National Science Foundation, Switzerland.

Recent changes in the global agro–food–energy system – driven in part by consumption trends, climate change-mitigation agendas, and general economic forces – have sparked renewed interest in agricultural investment and a rush to acquire land (Anseeuw, Boche et al. 2012). The present debate on the global land rush tends to overlook the existing economic and institutional nuances of land based investments, yet such differences impacts on organization of production, investment processes and outcomes (Deininger and Byerlee 2011). Many analyses informing these stances, generally remain at a case study level and are short-term, without contextualizing such investments in the context of broader agrarian and socio-economic transformations (Borras Jr and Franco 2012, Oya 2013). Furthermore the socio-economic and ecological impacts of these land use changes are not always clear, and possible trade-offs between the different dimensions of impacts are often not revealed.

Against this backdrop, the objective of the Belmont Forum-supported AFGROLAND project is to analyze how large-scale investments in land and agriculture impact natural resources, rural livelihoods, food security, in three African countries and how they are connected to public policies (www.afgroland.net). The international research team brings together researchers from two European and one African institution, as well as partners in the case study countries. The team is inter-disciplinary in nature, gathering academics, scholars and practitioners/policy-makers.

Drawing on economy, sociology, geography, political science and agronomy, we apply a mixed-methods approach that combines GIS data, qualitative interviews, participant observation, and quantitative

¹ Centre for Development and Environment (CDE), University of Bern, Switzerland

² French Agricultural Research Centre for International Development (CIRAD) and International Land Coalition (ILC), Rome

³ Institute for Food, Nutrition and Well-being and the Department of Agricultural Economics, Extension and Rural Development, University of Pretoria, South Africa

⁴ University of Pretoria, Department of Plant Production and Soil Science

⁵ CIRAD, France

⁶ CIRAD and University of Pretoria, South Africa

⁷ CIRAD and Malagasy Land Observatory, Madagascar

⁸ CETRAD (Centre for Training and Integrated Research In ASAL Development) Nanyuki, Kenya

⁹ Study of Governance Innovation, University of Pretoria, South Africa

surveys. Studies and surveys were conducted in the Nanyuki region in Kenya, three areas in the Nacala corridor of Mozambique and around two examples of the very few remaining active recent land investment in Madagascar (Table 1). Primary data were collected through a socio-economic and food security survey, conducted in October 2016 (Mozambique), January 2017 (Kenya) and in April 2017 (Madagascar) on a large sample of 500 to 600 rural households per country. Six internationally recognized food security indicators such as Household Dietary Diversity Score (HDDS), Food Consumption Score (FCS), Women's Dietary Diversity Score (WDDS), Coping Strategy Index (CSI), Monthly Adequate Household Food Provisions (MAHFP) and Asset ownership were selected and calculated (Fitawek, Hendriks et al. 2018; Mawoko, Hendriks, Reys, 2018; Masola, Hendriks, Reys, 2018).

Table 1 : companies' census in study areas according to country

	MOZAMBIQUE	KENYA	MADAGASCAR
Large-scale farms			
Level	Study areas (Monapo, Gurué, Ruace)	Study area (Nanyuki)	Country
Period	2000- 2018	1996-2017	2000-2017
Nb of companies in the inventory	25	64	95
Nb of interviewed companies	15	34	20

(Burnod et al., 2018)

Our approach enables cross-country analyses of the dynamics of large-scale agricultural investments, putting them in relation to national and infra-national politics and policy contexts, and investigating different dimensions of sustainable development such as socio-economic, food security and environmental impacts.

The project comprises three main lines of inquiry. First, it seeks to understand what drivers and rules of the game serve to pull, push, or regulate agricultural investments at the global and respective national and infra-national levels. Second, it investigates investors' strategies, examining how their business models evolve (or not) in relation to global drivers and national/local governance. Third, it aims to understand and assess how these agricultural investments impact natural resources, poverty, and food security at the national, local, and household level. This cross-country, comparative approach sheds light on how differences in national contexts mediate and reshape the influence of international drivers of change, determining the concrete outcomes and impacts of agricultural investment.

The project's results suggest that, given the same international drivers, local-level outcomes can differ significantly in terms of land use change, ecological impacts, food security, and livelihoods – based on national politics and policy frameworks, land tenure rights, the business environment, land and water resource endowments, and path-dependencies regarding investment and business practices. In our presentation, we underline these differences of national policy context, business models applied and their consequence in terms of investments success or failure, their impacts at the local level, considering the three dimensions of sustainable development, and the socio-economic profiles of impacted households.

Amongst the findings of the project are:

In terms of **implementation of LSLAs** in the last 10 years, a very contrasting development can be observed in the three countries. In Kenya, a steadily on-going, capital intensive, agro-industrial sector is continuously

developing, especially in the horticulture sector. Some new, large new LSLA were announced on government held land, but many of them have been abandoned. In Mozambique, many and large scale deals have been announced. In our case study area, we found many on-going investments, however sometimes partially implemented only, and often on formal colonial structures. Madagascar up to 95% of announced deals are considered now to be failures or have been abandoned. These differences must be attributed mainly to national differences in governance, land tenure systems, investment laws but also to resource endowment, as well as historical and geographic differences.

Impacts on **land tenure security** differ significantly between the three countries (land tenure systems and laws, pre-existence of existing large scale farm structures, land access modalities), but also according to the type of business model implemented. In Kenya, in our study area (Nanyuki), no conflict regarding land with investments were reported, although access to water creates tensions and conflicts. In Mozambique, where investments were established on former colonial plantations, few conflicts are reported, however on newly acquired land there are significant number of households that have lost land. In Madagascar, household reported conflicts regarding land with regard to one LSLA, but not with regard to the contract farming scheme. In Mozambique and Madagascar, the agribusiness development caused loss of land lost in the studied areas – mostly agricultural land in Mozambique for 30 to 45% of the households and mostly grazing land in Madagascar for 6% of the households (Burnod et al, 2018).

Impacts on **labor**: The number of jobs created varies greatly depending on the type of production, business model applied (large-scale plantation, commercial farms, out grower schemes, etc.) and agricultural production organization (mechanization, diversification, etc), but can be very significant i.e. 7000-8700 in the study areas of Mozambique and Kenya (Burnod et al. 2018). Employees are mainly men and women in their 30's, but gender balances are different in the three countries.

The incomes are mainly used to covers daily expenses. Lower but significant parts are also invested in the education and the family farms. The jobs often benefit the most vulnerable segments of the population: poor households, migrants, youth and / or women. On the other side, those jobs are usually low paid and, sometimes, are not declared and temporary (Burnod et al. 2018). Results underline that jobs creation is not enough, good working conditions and wages need to be promoted.

Data on the origin of households show that jobs are partly taken up by migrants. However, we observe the scale of attraction of agribusinesses is geographically quite limited. If a significant part of the households are considering themselves as migrants, most of them come in reality from a place located at less than 100 kilometers away from they are living now. Job opportunities are often only one of the reason mentioned for immigration in the area. The reasons of the immigration of the households interviewed are diverse: if 'job opportunities' is the main purpose for those immigrants in Madagascar, 'wedding' and 'land access' are the main ones evoked by those household in Mozambique and in Kenya.

Impact on **household status**: Household status in terms of assets, incomes and food security show a differentiated picture when comparing households participating or not in land investments (either as employees or outgrowers) and households in counterfactual regions. Causal relationships of these impacts are currently investigated. Preliminary findings suggest that the geographical contexts may have a higher direct impact on food consumption or items owned by households than the presence of agribusinesses themselves. Crops and animals varies a lot depending of the countries: maize, potatoes and wheat are the main crops cultivated in Kenya; beans, maize and wheat are the ones in Mozambique; rice and cassava are the ones in Madagascar, whatever if there is or not an agribusiness farm within the area. In Kenya and Madagascar, many households have also cattle, while none household interviewed reported to have even

one cow in Mozambique. Chickens are found in all three countries, but in Kenya households have also often goats and sheep. Overall, Kenyan households are richer and own more home items (television, tables, beds with mattress...) than Mozambican or Malagasy households.

Results regarding food security indices are mixed, showing small and diverging differences between factual and counterfactual areas. Once again, the main driver of evolution of agriculture practices in Kenya and Mozambique is identified by households to be the change of environmental conditions and not a consequence of agribusinesses.

The initial food security findings show that severe hunger and food insecurity were not common among households in the factual and control areas.

In Kenya and Mozambique, generally households enjoyed adequate dietary diversity by the dietary diversity and food consumption scores. Very few households fell into the poorest categories for this indicator. There were marginal differences between the groups for these indicators. However, in Madagascar, counterfactual households in Ambatofinandrahana enjoyed greater dietary diversity, while the diets of the employed households were the least diverse. The counterfactual group in Satrokala area in Madagascar had the highest proportion of households with adequate food consumption scores (FCS) for the Madagascar sample followed by employed group, indicating that their diets were of better quality than the other groups.

In Kenya, roughly 15% more employed and contract households were food secure than the control groups according to the months of adequate household food provision than for dietary diversity and food consumption. In Mozambique, employed and non-engaged categories experienced more months of inadequate food provision than the other groups. The majority of employed households and non-engaged households (54%) in Madagascar's Satrokala area fell into the category of being the least food insecure according to the months of adequate food provision index. Both non-engaged groups were recorded the highest proportion (11%) of severely food insecure households than other groups in Madagascar.

Employed and contract households in Kenya used more coping strategies more often than the other households, indicating greater food insecurity for this indicator. In Mozambique, results differed across regions. In Monapo a higher proportion of counterfactual households were moderately or severely food insecure using this indicator, in Gurué a higher proportion of non-engaged and engaged households were moderately or severely food insecure, whereas in Ruacé, a higher proportion of non-engaged households were moderately food insecure. The majority of the households in all groups in Madagascar did not practice many coping strategies, this might be due the data was collected during harvesting season.

In terms of **environmental impact**, in Kenya the perceived decrease in available water resources has led many small scale farmers to change cropland management practices but positive spillovers in terms of agricultural technologies were scarce. The main perceived environmental impacts of LAIs are air and water pollution (Eckert, Kiteme et al. 2017, Zaehring, Wambugu et al. 2018). In Mozambique investments caused deforestation directly through the clearing of forests for crop cultivation as well as indirectly through the displacement of small-scale farmers into forests. The main environmental impact perceived by small-scale farmers was the blocked access to rivers by the LAIs, which resulted in a lower water availability for households (Zähringer, Ali et al., 2018). In Madagascar analysis has not yet been concluded.

The main focus of the presentation will be present some of the emerging results of this project. It will contribute to better understanding of how national contexts mediate the impacts of distant drivers on local-level land system outcomes. Further, our results contribute to better understanding of the multi-scale impacts of global agro–food–energy system changes, contributing to the identification of leverage points for managing sustainability trade-offs and synergies in the global land rush.

Bibliography

Anseeuw, W., M. Boche, T. Breu, M. Giger, J. Lay and P. Messerli (2012). *Transnational Land Deals for Agriculture in the Global South*. Analytical Report based on the Land Matrix Database, CDE/CIRAD/GIGA, Bern/Montpellier/Hamburg.

Borras Jr, S. M. and J. C. Franco (2012). "Global Land Grabbing and Trajectories of Agrarian Change: A Preliminary Analysis." *Journal of Agrarian Change* 12(1): 34-59.

Burnod Perrine, Aurelien Reys, Ward Anseeuw, Markus Giger, Sara Mercandalli, Boniface Kiteme and Tsilavo Ralandison. 2018. *Labor Impacts of Large Agricultural Investments: focus on Mozambique, Kenya and Madagascar*. Presentation at the Land and Poverty Conference 2018. Draft.

Deininger, K. and D. Byerlee (2011). *Rising global interest in farmland: can it yield sustainable and equitable benefits?*, World Bank Publications.

Eckert, S., B. Kiteme, E. Njuguna and J. G. Zaehring (2017). "Agricultural expansion and intensification in the foothills of Mount Kenya: A landscape perspective." *Remote sensing* 9(8): 784.

Fitawek W, Hendriks SL, Fossi F and Reys A. (2018). *Analysis Method and Interim Results on Food Security for Kenya*. African Food, Agriculture, Land and Natural Resource Project (AFGROLAND) Interim Report, March 2018. University of Pretoria, Pretoria.

Masola LC, Hendriks SL and Reys A. (2018). *Analysis Method and Interim Results on Food Security for Kenya*. African Food, Agriculture, Land and Natural Resource Project (AFGROLAND) Interim Report, March 2018. University of Pretoria, Pretoria.

Mawoko ZD, Hendriks SL and Reys A. (2018). *Analysis Method and Interim Results on Food Security for Mozambique*. African Food, Agriculture, Land and Natural Resource Project (AFGROLAND) Interim Report, March 2018. University of Pretoria, Pretoria.

Oya, C. (2013). "Methodological reflections on 'land grab'databases and the 'land grab'literature 'rush'." *Journal of Peasant Studies* 40(3): 503-520.

Zaehring Julie G., Ali Atumane, Sibylle Berger and Sandra Eckert. *Large-scale agricultural investments in the Nacala corridor, Mozambique: impacts on land use and the environment*. 2018 (draft).

Zaehring, J. G., G. Wambugu, B. Kiteme and S. Eckert (2018). *Journal of Environmental Management* 213: 79-89.