



4th Open Science Meeting of the Global Land Programme

April 24-26, 2019 | Bern, Switzerland

[Login](#)

Conference Time: 27/Jan/2020 3:53pm CET

Conference Agenda

Overview and details of the sessions of this conference. Please select a date or location to show only sessions at that day or location. Please select a single session for detailed view (with abstracts and downloads if available).

[Authors](#)



Session Overview

Session

112RA: Sustainability impacts of large scale investments

Time: **Wednesday, 24/Apr/2019: 2:00pm - 3:30pm**

Session Chair: **Ward Anseeuw**

Session Chair: **Wegayehu Fitawek**

Session Chair: **Markus Giger**

Session Chair: **Christoph Oberlack**

Session Chair: **Julie Gwendolin Zaehringer**

Session Topics: What are the visions for the planetary land system?

Location: **UniS-A 022**

UniS Building, room A 022, ground floor, 72 seats

Session Abstract

If a consensus emerges regarding the necessity of additional investment into agriculture (FAO, 2010), it is less evident whether large-scale agricultural investments (LAI) are a vector for broader agrarian and socio-economic transformations in a sustainable manner (Borras et al. 2012, Deininger and Byerlee 2011; Collier and Dercon 2014). Despite a growing literature (World Bank, 2010; White et al., 2012, Cotula 2014 etc.), most assessments of LAI impacts tend to remain local, in the form of specific case-studies and are often short-term without broader contextualization (Fairhead et al., 2012). Efforts to overcome these limitations through different types of meta-analysis have been undertaken (Oberlack et al., 2015, Schoneveld 2014, Schoneveld 2017, Dell'Angelo et al. (2017). However, a more empirical understanding of the various changes and impacts at various levels is necessary for reflecting on visions for the planetary land system.

The objective of the session is to discuss recent research results on sustainability impacts of Large-Scale Agricultural Investments at household and regional (sub-national) level in the global South. Priority is given to presentations of results going beyond individual cases studies by using different approaches such as comparative case studies, studies looking at regional/spatial or temporal changes. Other innovative approaches to shed further light on the dynamics and impacts generated by such investments can also be proposed.

Presentations



Full talk

ID: **911** / 112RA: 1

112R Sustainability impacts of large scale agricultural investments

Keywords: Food security, large-scale agricultural investment, dietary diversity, coping strategies, Madagascar

The impact of large-scale agricultural investments on household food security in two areas of Madagascar

Wegayehu Fitawek¹, Sheryl Hendriks^{1,2}, Aurélien Reys³, Filippo Fossi¹

¹Department of Agricultural Economics, Extension and Rural Development, University of Pretoria, South Africa; ²Institute for Food, Nutrition and Well-being, University of Pretoria, South Africa; ³French Agricultural Research Centre for International Development (CIRAD), Montpellier, France

Large-scale agricultural investments in developing countries have escalated over the past decade. While much is written about the potential negative effects of these acquisitions on local communities, there is a paucity of evidence of these impacts. This paper explores the impact of large-scale agribusinesses on household food security in two locations in Madagascar: one is plantation area or Location A and the other one is contract farming area or Location B in this paper... The sample of 601 households was classified into households (i) in which at least one member was employed or (ii) contracted to the agribusiness, (iii) households in the same area that were neither employees nor contractors (non-engaged) and (iv) counterfactual households from another community. The result of this paper show that dietary quality, food security and resilience were higher among employed households. Contract households were generally more food insecure than the counterfactual and non-engaged households. Living in the zone of influence did not seem to have major negative effects on the food security of non-engaged households. However, female-headed households seemed disadvantaged in terms of access to employment and contracting opportunities. Employment seemed to improved food security. However, unless attention is paid to the access of women to employment and contracting opportunities, inequality may be exacerbated. Governments and the agribusinesses should consider taking steps to ensure equitable access to employment and contracting for females.

Full talk

ID: **912** / 112RA: 2

112R Sustainability impacts of large scale agricultural investments

Keywords: Africa, Large-scale Agriculture investments, rural labor markets, business models, poverty reduction.

Nuancing the labor market effects of large-scale land acquisitions in SSA : Insights for improved policy frameworks

Sara Mercandalli², Perrine Burnod², Aurélien Reys², Ward Anseeuw^{1,2}, Markus Giger³

¹ILC, Italy; ²CIRAD, France; ³University of Bern, Centre for Development and Environment

What are the impacts of large-scale agricultural investments with regards rural labor market dynamics considering both supply and demand sides?

This paper compares the labour market implications of large scale farming enterprises in terms of both direct job creation and workers profiles in Kenya, Mozambique and

Madagascar. Using a common methodology, a total of 1,650 households were randomly selected and interviewed in impacted areas and in counterfactual areas. Labour Impacts in terms of i) quantity and quality of jobs created and ii) workers and households demo-economic profiles are analysed according to the business models of the enterprises, based, inter alia, on the crops produced and its intensity of labour requirements.

Results at both territorial level and between LSAI show that i) On the supply side overall gross LAIs' job creation in the 3 sites is significant at local level, although with strong differences according to business model. However, LAI job creation is lower than family farming labor requirement when calculated per cultivated hectares, meaning that LAI net employment creation strongly depends on both BM and previous land use by smallholders ; ii) The quality and attractiveness of jobs depends again on regional and business model features. iii) On the demand side, despite existing LAI related decent employment supporting households livelihoods, widespread precarious jobs often benefit the most vulnerable segments of the population: poor households, migrants, youth and / or women. This can either be seen as a benefit in terms of poverty reduction or critically considered as the direct result of the absence of alternatives for the most vulnerable. The comprehensive approach used, integrating both labour supply and demand dimensions, shows nuanced and context specific results. It provides insights to inform decision-makers on the models of agriculture to be promoted in different settings, to address SSA employment challenge.

Full talk

ID: 913 / 112RA: 3

112R Sustainability impacts of large scale agricultural investments

Keywords: large scale land acquisitions, Madagascar, Kenya

How and why large-scale agricultural investments induce diverse trajectories of regional development in Kenya, Madagascar and Mozambique

Markus Giger¹, Christoph Oberlack^{1,2}, Ward Anseeuw^{3,4}, Camilla Adelle^{3,5}, Magalie Bourblanc³, Boniface Kiteme¹⁰, Perrine Burnod^{3,6}, Sandra Eckert¹, Eve Fouilleux^{3,7,8}, Sheryl Hendriks⁹, Sara Mercandalli³, Aurélien Reys³, Maya da Silva¹¹, Michael Van Der Laan¹¹, Julie Zähringer¹, Peter Messerli^{1,2}

¹Centre for Development and Environment (CDE), University of Bern, Switzerland; ²Institute of Geography, University of Bern, Switzerland; ³French Agricultural Research Centre for International Development (CIRAD), France; ⁴International Land Coalition (ILC), Rome, Italy; ⁵Centre for the Study of Governance Innovation, University of Pretoria, South Africa;

⁶Malagasy Land Observatory, Madagascar; ⁷UMR CEPEL (University of Montpellier), France; ⁸Centre National de la Recherche Scientifique (CNRS) Montpellier Cedex 5, France;

⁹Department of Agricultural Economics, Extension and Rural Development and the Institute for Food, Nutrition and Well-being, University of Pretoria, South Africa; ¹⁰Centre for Training and Integrated Research In ASAL Development (CETRAD), Nanyuki, Kenya; ¹¹Department of Plant and Soil Sciences, University of Pretoria, South Africa

Changes to the global agro-food-energy system (e.g. changing consumption patterns in the North (SNF, 2012), Europe's Climate and biofuel policies, etc.) over the past few years have led to a renewed interest in agriculture and a rush to acquire land (Cotula, 2012; Anseeuw et al, 2013). The impacts of this rush on sustainability are not always evident as its assessments focus on the short-term and generally remain at a case study level, without considering the broader agrarian and socio-economic transformations it entails (Borras et al. 2012).

If a consensus emerges regarding the necessity of additional investment into agriculture (FAO, 2010), it is less evident whether large-scale agricultural investments (LAI) are a vector for broader agrarian and socio-economic transformations in a sustainable manner (Borras et al. 2012, Deininger and Byerlee 2011; Collier and Dercon 2014). Despite a growing literature (World Bank, 2010; White et al., 2012, Cotula 2014 etc.), most assessments of LAI impacts tend to remain local, in the form of specific case-studies, and are often short term without broader contextualization (Fairhead et al., 2012). Efforts to overcome these limitations through different types of meta-analysis have been undertaken (Oberlack et al., 2015, Schoneveld 2014, Schoneveld 2017, Dell'Angelo et al. (2017). However, a more empirical understanding of the diverse changes and impacts at various levels is necessary for reflecting on visions for the planetary land system.

Against this backdrop, this paper presents the results of a study aiming, on one hand, at assessing the changes and impacts of LAIs at various (individual, household, regional) levels within target regions, and on the other hand, at a nuanced account of how and why LAIs subsequently induce diverse regional development trajectories in these regions. We focus on LAIs in Kenya, Madagascar and Mozambique. Specifically, this study provides a cross-national comparative analysis of business models, land-use changes, governance dynamics of LAIs and their socio-economic, food security, and environmental impacts in Kenya, Madagascar and Mozambique. It brings together the individual results on these aspects, which were generated in the Afgroland project (www.afgroland.net). The following research question guides this analysis: How do contextual and institutional nuances of large-scale agricultural investments impact on land-use changes, the organization of production and investment processes, socio-economic outcomes, food security, and the environment in LAI target regions in Kenya, Madagascar and Mozambique?

Methodologically, this study utilizes a set-theoretic methodology for a case-based comparative analysis. It responds to calls for the use of robust empirical methodologies to provide reliable evidence on the impacts of LAIs and to expand the use of comparative methods to attribute LAI impacts to causal factors. Data were collected in six study areas in the three countries by means of household surveys with more than 1500 households, more than 200 key-informant and in-depth interviews with business managers, policymakers, households, development agencies, and NGOs; remotely sensed data between 2016 and 2018, and complemented with document analysis. Data analysis involved mixed qualitative and quantitative techniques.

A first set of tentative results, more conceptual in nature, show that LAIs induce regional development trajectories with sustainability impact patterns that can be characterized as conflictual sustainability trade-offs; employment vs. land access and environment trade-offs; widespread hostility; or moderate impacts. The set-theoretic analysis shows that the operational farm size, labour intensity, experience in local agriculture or domestic origin of investors, and prior land uses have the most significant impact on land-use changes, evolution of business models and adaptation of governance systems. These transformation patterns are described in detail in the paper.

A second set of results shows how the same international drivers can have divergent impacts, with local-level outcomes which can differ significantly in terms of land use change, ecological impacts, food security, and livelihoods. These divergences are determined by national politics and policy frameworks, land tenure rights, business models, land and water resource endowments, and path-dependencies regarding investment and business practices. As such, in Kenya, and more particularly in the Nanyuki region characterised by long-standing LAIs, an agrarian normalisation process has established, based on labour intense production systems mainly in the flower and horticultural sectors. Better established labour rights, technology transfer and an agrarian sector that has developed over time leads presently to a relatively dynamic local economy with subsequent livelihood opportunities. In Mozambique, these regional dynamics are minimal however, albeit indirect through basic infrastructural and service development. On contrary, through land loss and increased land pressures, labour extensive crops and production models, and not well developed labour rights, major fractions of the local populations tend to be affected negatively. Lastly, in Madagascar, for the few investments that are still operational, they tend to function on an enclave model, with very little – if any – interactions and impacts on the regional economy and local populations.

The paper concludes by repositioning these results in the broader framework of interactions among sustainable development goals (SDGs), representing a critical, but mostly overlooked aspect in the debate on LAIs. In policy debates, LAIs are frequently justified with the argument that LAIs would create new flows of investments to capital-poor regions; create new employment; enhance agricultural productivity. In other words, this narratives relates LAIs positively to SDG10.B and SDG17.3 (investment flows), SDG8.5 (employment), and SDG2.3 (agricultural productivity), among others. By contrast, a recent review finds that LAIs can affect 14 of the 17 Sustainable Development Goals of the UN 2030 Agenda for Sustainable Development in adverse ways. The results of this study and the analyses in terms of diverging development trajectories induced by LAIs allows to assess how LAIs shapes the interaction between multiple SDGs. These interactions among SDGs in the framework of LAIs can take the forms of trade-offs, co-benefits, and co-damage.

Full talk

ID: 792 / 112RA: 4

112R Sustainability impacts of large scale agricultural investments

Keywords: Dams, Landsat, Africa

Have African dams and irrigation schemes delivered the promised agricultural benefits?

Tom Higginbottom, Roshan Adhikari, Ralitzia Dimova, Timothy Foster

University of Manchester, United Kingdom

Reservoir-based irrigation, facilitated by damming rivers, is a key tool used by national governments and international development agencies for expanding agriculture, improving food security, and reducing rural poverty. Currently, agricultural productivity gaps are highest in Africa and dam construction is increasingly used to rectify this. However, the efficacy of existing dams, both globally and in Africa, has been questioned. Between 1950 and 2005, nearly one thousand dams were built in Africa, half of which explicitly intended to assist agriculture. There is a wide-spread perception and anecdotal evidence to suggest these developments have failed to convey the promised benefits, with realised irrigated areas either smaller or less productive than planned. However, there is a lack of large-scale data to investigate these assumptions. In this study, we aim to quantify how actual dam-supported irrigation areas compare to the initial proposed irrigation command areas, and what factors contributed to any observed discrepancies. To do this, we combine historic records for planned irrigation areas, reported by international donors and national governments, with estimates of actual irrigated agricultural land areas derived from Landsat imagery and associated cropland data layer. Subsequently, the fraction of successfully delivered irrigated cropland was analysed against a range of environmental, socio-political, and technological factors using a series of Boosted Regression Trees. Our results indicate that, on a pan-African level, dams on average have delivered only 30% of the proposed irrigated cropland. However, there is wide variation in the performance of dam-and-canal irrigation schemes. In particular, irrigation scheme performance was negatively associated with weak governance and development size. These results contribute to ongoing debates around infrastructure and agricultural development in Africa by providing a robust

assessment of how historical schemes have performed, an essential step in determining the viability of future plans.

Flash talk

ID: 802 / 112RA: 5

112R Sustainability impacts of large scale agricultural investments

Keywords: food security, land investment, sustainability, Africa

A typology of agricultural land investments and potential impacts on the food security of african countries

Altaaf Mechiche-Alami¹, Jihad Yagoubi², Kimberly Nicholas¹

¹Lund University, Sweden; ²Free University of Berlin, Germany

In recent years, agricultural investments (in machinery, irrigation, fertilizers and pesticides) have given way to Large Scale Land Acquisitions (LSLA) as direct land investments on areas larger than 200Ha in developing countries (Anseeuw et al., 2012; Cotula, Vermeulen, Leonard, & Keeley, 2009; De Schutter, 2011b; UNCTAD, 2009; Zoomers, 2010). In this study, we attempt to evaluate the extent to which agricultural land deals in Africa are able to address the host countries' food security needs.

First, we evaluate the food security needs of African countries in 2000 based on food availability, accessibility, stability and utilization indicators. Second, we develop a land deal typology based on the type of investments (domestic, foreign or mixed), type of investors (agribusiness, finance, government ...) and the type of crops (food stuff, cash crop, biofuel...) intended for production on the acquired land. This enables us to estimate the likelihood of the investment to increase food availability in the country or if it serves other purposes (speculation, energy, export of natural resources). We further account for the characteristics of the locations where the deals happen (population density, previous land cover and distance to markets) in order to estimate the level of disturbance that these deals could have on the local populations and environment.

We find that most of the deals (about 70% of acquired land) are unlikely to improve food availability in the country where they occur. However, even when land deals had the potential to improve availability or stability, they were still at risk of negative local impacts in 62% of the acquired area, either through increased land pressures in densely populated areas or through deforestation.

Flash talk

ID: 501 / 112RA: 6

112R Sustainability impacts of large scale agricultural investments

Keywords: China; Tanzania; integrated modeling; sisal; social-environmental system

Modeling land change and sustainability of Chinese large-scale agricultural investments in Central Tanzania

Puyang Li

Arizona State University, United States of America

China has become the largest trade partner and one of the major land investors with Africa in this century. Various studies describe Chinese investment in large-scale land-based transactions in Africa as telecoupled land grabs to secure domestic needs for crops, energy and other material resources to support the second largest global economy. Whether these investments can generate quality employment, avoid dispossessing local people of their land, promote diversified and sustainable livelihoods, and catalyze more vibrant local economies remain under-documented.

This study seeks to open up a lens on this issue. It focuses on China's engagements in sisal production and export in central Tanzania, and explores how these investment activities affect social-environmental conditions among the area's inhabitants. The Chinese sisal estates generate wage labor for local, smallholder farmers as well as opportunities for the smallholders to produce and sale sisal to the estate, changing the structure of the local economy with major implications for smallholder cultivation and the environment at large. Integrated and agent-based modeling of social-environmental changes and their projections in the near future are used to explore the dynamics between the estates and smallholder farmers.

[Mobile View](#) [Print View](#)