

## DO FOREIGN LARGE-SCALE LAND ACQUISITIONS DECREASE SMALLHOLDER PRODUCTIVITY IN AFRICA?

For more than five years, the incidence of foreign large-scale land acquisitions, sometimes known as "land grabbing," has burgeoned in developing countries. In the same time period, there have also been an increasing number of scientific studies addressing this issue. For example, Deininger (2011) shows that foreign land acquisitions have remained at high levels even after the 2007-08 commodity price spike. He also shows that land acquisitions have been strongly centered in Africa, in particular in countries with weak land rights.

What is the potential impact of these land acquisitions on local agriculture? The economic literature considers spillovers to be one of the main transmission channels between foreign direct investments and local producers; however, spillovers are mostly studied in the manufacturing sector and are thought to be negligible in the agricultural sector. Moreover, the spillover of knowledge and

skill transfers between large-scale agricultural operators and smallholder farmers may be limited because of the large technological gap between

these two groups.

While foreign direct investment may have some positive

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spillover effects, such as improvement of infrastructure (roads, fertilizer depots, technical assistance and training, agricultural extension services, etc.), it may also have negative impacts on smallholders. Foreign large-scale land acquisitions have been criticized for their detrimental effects on the environment, such as the emission of toxic substances into the air, water, and soil, contamination of ground water through seepage caused by the excessive use of chemical fertilizers and aerial pesticide sprays, and accelerated deforestation. It is also important to consider whether these land acquisitions lead to increased competition for local producers and to study

**AGRODEP** is a Modeling Consortium of African researchers living and working in Africa with research interests ranging from economic modeling to regional integration and development to climate change, gender, poverty, and inequality. There are currently 147 members from 27 countries; our members work at top research institutions and universities in their own countries as well as various government agencies and non-profit organizations.

### The **benefits of being an AGRODEP member**

include opportunities for research grants, free access to cutting-edge economic research tools, data, and training. Members also gain access and exposure to large global networks of economic researchers and experts. [Click here to learn more.](#)

their potentially disruptive impact on input and output prices.

A key question is whether local African smallholders may be negatively affected by large-scale agricultural projects. Beyond case studies, there is little evidence on the impact and spillovers of large-farming operations on smallholders; indeed, foreign large-scale projects are a very recent phenomenon. Most of them are only partially implemented, or not implemented at all. In addition, the data requirements for a rigorous impact study are demanding; to start, one needs precise information regarding the geographical locations of both the smallholders and the foreign land acquisitions. Longitudinal information regarding the smallholders would be even more useful since that would allow for an analysis of spillover effects over time.

A recent study<sup>1</sup> funded by AGRODEP is based on a unique combination of household data (the 1999-2000 and the 2010-2011 Post-Harvest Surveys (PHS)), which are a nationally representative cross sectional survey, collected by the Zambian Central Statistical Office (CSO) and an inventory

of foreign large-scale land acquisitions from Zambia. This study examines the impacts of foreign large-scale land acquisitions on smallholders' productivity, fertilizer use, and wage-employment opportunities; it adopts a difference-in-differences approach that compares the productivity levels of smallholders in districts with and without foreign large-scale land acquisitions.

First, the study uses a Binomial Probit model to examine the determinants of foreign large-scale land acquisitions at the district level and find that districts with railways or road infrastructure have a higher probability of attracting these investments. However, the study concludes that population density per square kilometer, suitable agro-ecological conditions, and the proximity of agricultural facilities have no significant effect on a district's probability of attracting a foreign land acquisition.

The study then evaluates the impact of foreign land acquisitions on local smallholders. It reveals a pattern of convergence: the districts that have received large-scale land acquisitions initially exhibited higher output per unit

of land, higher use of fertilizer, and somewhat smaller farm sizes than districts without such acquisitions. These differences became smaller or even disappeared over the first decade of the 2000s. However, the study concludes that it is difficult to determine causality from these results, meaning that we cannot necessarily attribute the differences between treated and non-treated areas to the presence of foreign large-scale land acquisitions. The study was not able to examine these impacts at a level that is more disaggregated than the district level; the same is true for the possible positive spillovers through local labor markets, technological spillovers, or an increased availability of agricultural inputs. The study did not find any evidence for these spillovers at the district level.

While the study concludes that in Zambia, large-scale land acquisitions have not had any major disruptive effects on the smallholder economy at the district level, it also identifies data and methodological challenges that remain to be addressed in order to understand the potential impact of foreign direct investments in agricultural lands on local agriculture and smallholders in Africa.

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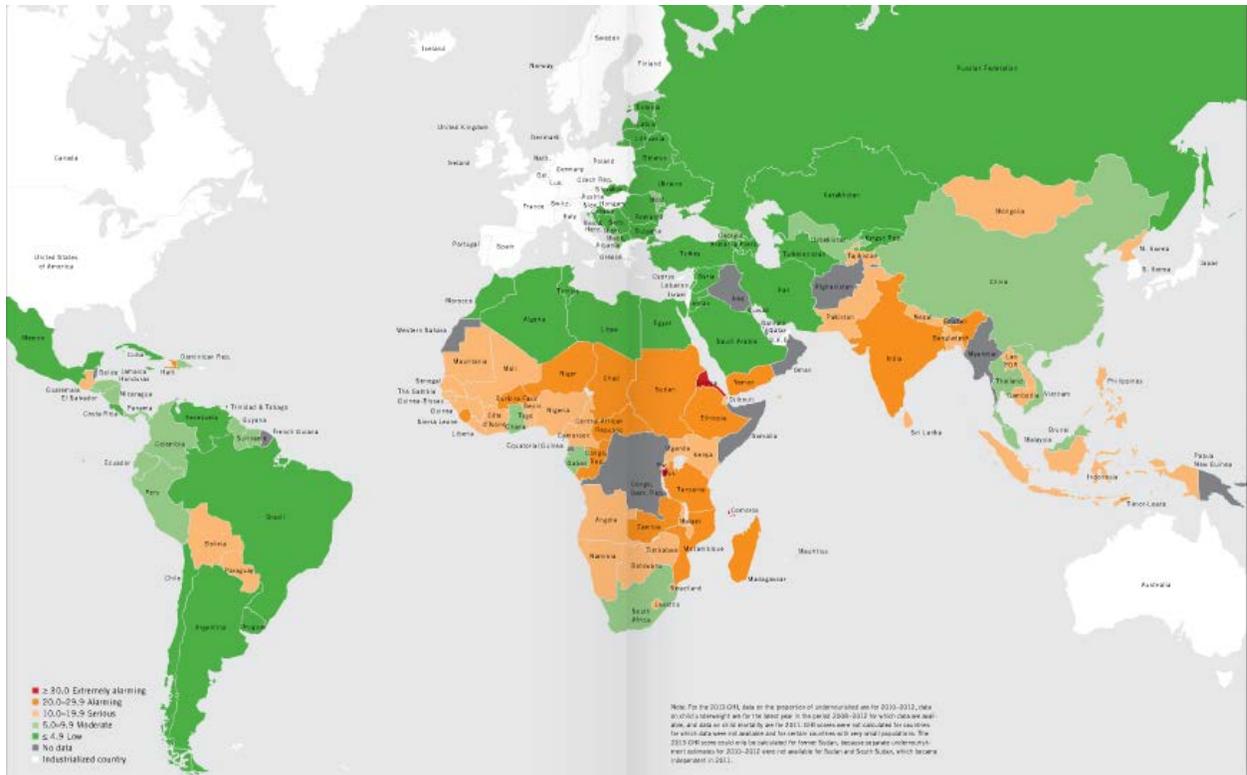
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<sup>1</sup> The Impact of Foreign Large-Scale Land Acquisitions on Smallholder Productivity: Evidence from Zambia, by Jann Lay and Kacana Sipangule, December 2013, AGRODEP mimeo.

## DATA

### Recent Statistics about Africa

Figure 1: 2013 Global Hunger Index by Severity



Source: [2013 Global Hunger Index](#)

The [2013 Global Hunger Index](#) was released by IFPRI in October. The Global Hunger Index is based on a multidimensional analysis of global hunger issue: it combines three equally weighted indexes (undernourishment, child underweight and child mortality) into a single indicator. The 2013 Global Hunger Index shows that the world has reduced hunger since 1990, but it still has far to go before complete hunger alleviation. In particular, today the situation in 19 countries is either “alarming” or “extremely alarming” (see map above). Fifteen of these 19 countries are in Africa: Niger, Congo Rep., Tanzania, Mozambique, Burkina Faso, Sierra Leone, Central African Republic, Zambia, Madagascar, Ethiopia, Chad, Sudan (former), Comores, Eritrea, and Burundi (the countries are listed according to their Global Hunger Index ranking, revealing an increasingly alarming situation).

## 2013 AGRODEP TRAINING COURSES

### Final Two Training Courses On-Going

The final AGRODEP training courses for 2013 are currently being held. The course on [GAMS-Based CGE Models \(Basic\)](#) is running from December 9-20 in Addis Ababa, Ethiopia. Part Two of the course on [Impact Evaluation and Analysis of Development Interventions](#) is currently being held in Dakar from December 16-20.

## AGRODEP MEMBERS' WORKSHOP

Third Annual Workshop Held in November

AGRODEP held its annual **Members' Workshop** on November 19-20 in Dakar, Senegal. Twenty AGRODEP members attended this year's workshop to present work for which they have received or are being considered for AGRODEP grants. Presenters have received Research Valorization grants and Seed Fund grants, and have submitted proposals for the 2013 AGRODEP Innovative Research grants. Meetings of the **Scientific Advisory Board (SAB)**, **Network Advisory Committee (NAC)**, and **Steering Committee (SC)** were held prior to the workshop.

## 2014 GTAP CONFERENCE

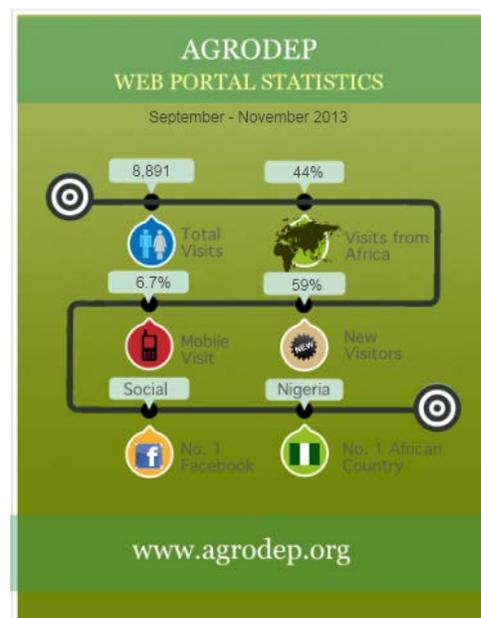
Call for Papers Announced

The call for proposals for the **17<sup>th</sup> Annual Conference on Global Economic Analysis**, co-organized by AGRODEP and the **Center for Global Trade Analysis**, was announced in November. The Conference will be held in Dakar from June 18-20, 2014. The goal of the annual conference is to promote the exchange of ideas among economists conducting quantitative analysis of global economic issues. Particular emphasis will be placed on applied general equilibrium methods, data, and application. Related theoretical and applied work is also welcome. The theme of the Conference is "New Challenges in Food Policy, Trade, and Economic Vulnerability." Abstracts and organized session proposals are currently being accepted on the GTAP website through January 15. A number of scholarships will be available for presenters currently residing in Africa. Scholarship recipients will be chosen based on and following the review of their submitted abstract. Registrations for this event will be accepted from early January through April 30.

## INNOVATIVE RESEARCH GRANTS

SELECTED PROPOSALS TO BE ANNOUNCED IN JANUARY

In August, AGRODEP announced a call for its **Innovative Research Grant series**. This year's theme is "Economic Growth and Development in Africa: Lessons from the Last 40 Years and Implications for Sustainability." Due to a high number of proposals received, the review process is still underway. Selected proposals are expected to be announced in January. This grant series is open only to AGRODEP members, and members were encouraged to submit joint or collaborative proposals in order to increase their networking activities. Selected proposals will also be eligible for participation in the 2014 GTAP Conference.



### WHAT IS AGRODEP?

The African Growth and Development Policy (AGRODEP) Modeling Consortium is an initiative led by the International Food Policy Research Institute (IFPRI). The goal of AGRODEP is to position African experts to take a leading role in both (1) the study of strategic development questions facing African countries as a group and (2) the broader agricultural growth and policy debate, which traditionally has been dominated by external actors and concerns.

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