

Land Development: A Forgotten Role for Private Investment in Frontier Agriculture

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Preconference workshop on Agroholdings and Mega-Farming Operations
at the 29th International Conference of Agricultural Economists (ICAE)
Milan, Italy -- August 8th, 2015

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Who invests in farmland development?



Source: Irrigation in Imperial Valley, Calif. 2009.
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<http://lens.blogs.nytimes.com/2013/10/29>



Source: Nueva Requena palm oil plantation in Peru, 2015.
© Monitoring of the Andean Amazon Project, reprinted from
<http://farmlandgrab.org/post/view/24931-primary-rainforest-cleared-for-massive-palm-oil-plantations-in-peru>

Farms need many site-specific investments

- Soil and water
 - Irrigation and drainage
 - Clearing, leveling and amendments
- Infrastructure and buildings
 - Transportation and communications
 - Storage and processing
- Market arrangements
 - Institutions and contracting
 - Financing and risk management
- Labor and human capital
 - Housing, schooling and health care
 - Site-specific knowledge and skill

How are farms' fixed costs financed?

- Farm household savings
 - Farmers' retained earnings
 - Farm families' other earnings and remittances
- Public services
 - Government-backed direct provision
 - Government-backed agricultural lenders
- Private lenders
 - Supplier credit and equipment loans
 - Agricultural banks with land as collateral
- Equity investors
 - Investor-owned company farms
 - Land development companies

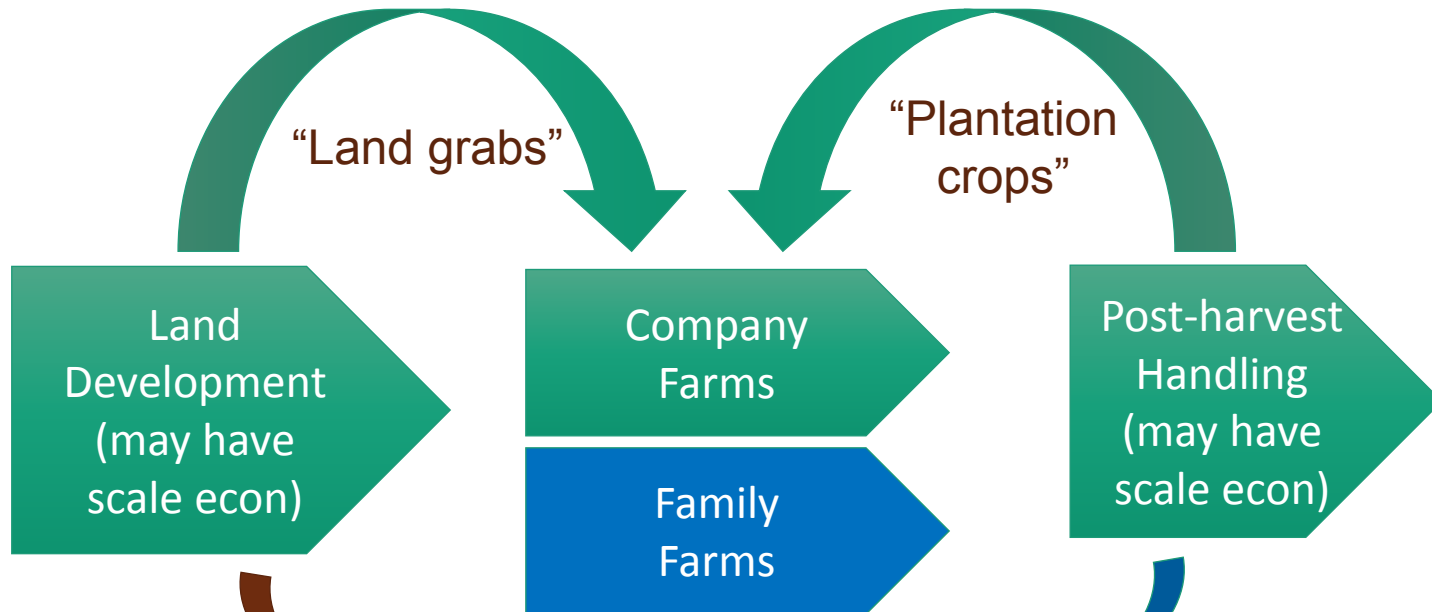
Widely used for residential + commercial land, but agriculture?

At what scale are these investments made?

- Often same or smaller scale as family farm
 - Often use only family labor and capital
 - May use hired labor, loans and public services
- Sometimes larger scale than existing family farm
 - Often lead to farm expansion or intensification
 - Expansion by acquisition of neighboring land
 - Intensification of production on existing land
 - May use shared and contract services
 - Farmer-owned cooperatives
 - Entrepreneurial contractors
- At agricultural frontier, scale can be *very* large
 - Efficient farm size may be unknown
 - State gives property rights, plus some public services
 - Settlers are pioneers and speculators as well as farmers

Scale economies downstream and upstream of farming may lead to large-farm operations

...but not always!



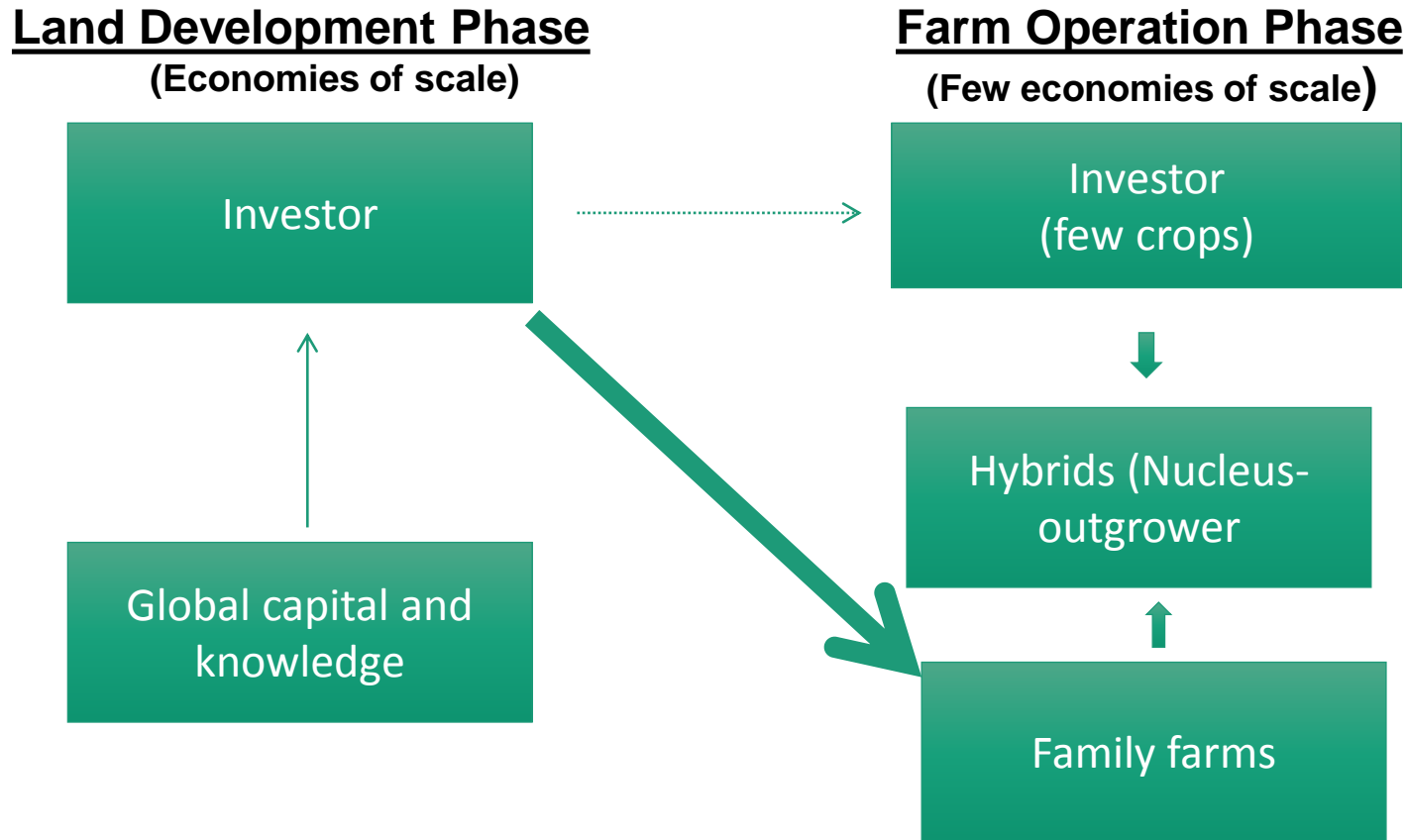
Are there also opportunities to make scale-neutral land improvement?

Post-harvest services can be made scale neutral, with self-employed families as outgrowers, contractors or shareholders

History matters

- Late 19th and early 20th c. agricultural frontiers used many different modes of settlement
 - Wide variation in initial and optimal farm sizes
 - e.g. US Homestead Act of 1862 imposed 160 acres
 - this proved to be too big in some places, too small in others
 - Some experimentation with corporate farms
 - e.g. Bonanza farms of the 1870s
 - these were almost all subdivided into family farms by 1890s
 - Some private land development companies
 - e.g. Santa Fe Land Co. using UK capital in Argentina in 1880s
 - managed own livestock & timber, but sold/rented land for farming
- Since WWII, government settlement schemes and large-scale company farms have dominated frontier agriculture
 - ...but neither is working very well.
 - Time to revisit private land development?

Options for land developers to capture value and earn returns



Types of Land Development Investments with Economies of Scale

- Natural K--intrinsic productivity of land
 - Irrigation, major soil amendments
- Institutional K
 - Tenure security, environmental regulations
- Knowledge K
 - Pioneering experimentation
- Attached K
 - Roads and some large mills for bulky products

Private Irrigation Schemes - 19th C.

- Led development of irrigation in US, Australia, Thailand
 - Private land & water development
 - Concessions often stipulated max size family farm operations
- Investor profits based on land sales, long term credit or water sales



Development of Renmark Irrigation Scheme, Australia, 1890s
(average <10 ha per farm)

Contemporary Private Irrigation Schemes

- Brazil, Peru, Australia
 - High investment costs—often > \$10,000/ha
 - Little focus now on family farms
 - But Chinese investment in Northern Australia negotiated with indigenous groups (\$50 M)
- Africa
 - Sugarcane with outgrowers (Illovo)
 - Rice but mostly large-scale operations
 - PPPs with smallholders (Zambia)

Savannah Frontiers—19th-20th C.

- Brazil
 - North Parana Land Co (1.25 Mha)-1932-67
 - Private colonization companies for the Cerrado in 1970s & 80s
 - Small farmers from Sth Brazil
- South Australia
 - AMP Land Development, 1949-64
 - 340K ha of infertile soils
 - Investment in soil amendments, land clearing and improved pastures
 - All family farm operated
 - 40 X increase in productivity
 - 6% return to company

Savannah Frontiers—Today

Brazil

- Large land development companies in Brazil
 - BrasilAgro
 - SLC LandCo
- Capital and knowledge for LD
 - \$2,000-4,000/ha for LD
 - Purely market based and results in more unequal land ownership

African savannah

- Infrastructural corridors searching for a model for private investment in land development
 - Inclusive of in situ smallholders?
 - Potential for in-migrant settlement of smallholders in low density areas

Lessons from History (15 cases)

- Private land development often more successful than state schemes
 - Clear economies of scale in LD
- Many have been transformative—vibrant family farm agriculture
 - But significant risks to investors (immobile asset) and farmers (long-term mortgage)
- Regulatory role of the state critical to create family farm agrarian structure
 - But sometimes high costs to indigenous groups

Policy Implications for Today

- Recognize that much land unproductive without significant investment
 - Won't happen without external private capital
- Recognize economies of scale for LD but not for farm operation
 - Design contracts and business models to focus on investment in LD & turn over to smallholders
- Recognize special Africa challenges
 - Lack of tenure security, LT financial mkts for in situ SHs
 - How to accommodate immigrants in low density areas
 - Much experimentation on innovative PPPs

Extra

Typology of Land Development and Farm Operation

		Increase in land productivity from land development	
		High	Low
Products suitable for family farm operation (most)	Land development	Investor	Family farms
	Farm operations	Family farm in situ & settlers Nucleus-outgrower	Family farms
Products suitable for large farm operation (e.g., s/cane, oil palm)	Land development	Investor	Not applicable
	Farm operations	Investor Nucleus-outgrower, contract	Extensive cattle operations