

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

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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

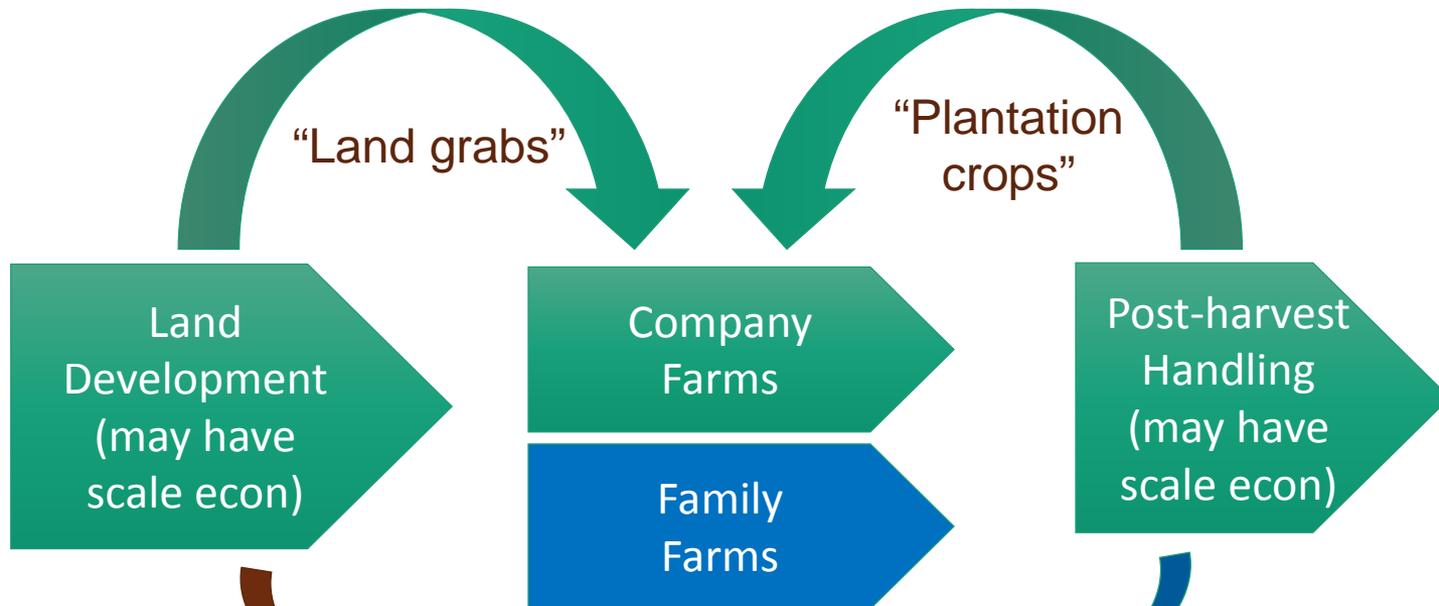
Widely used for residential + commercial land, but agriculture?

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!



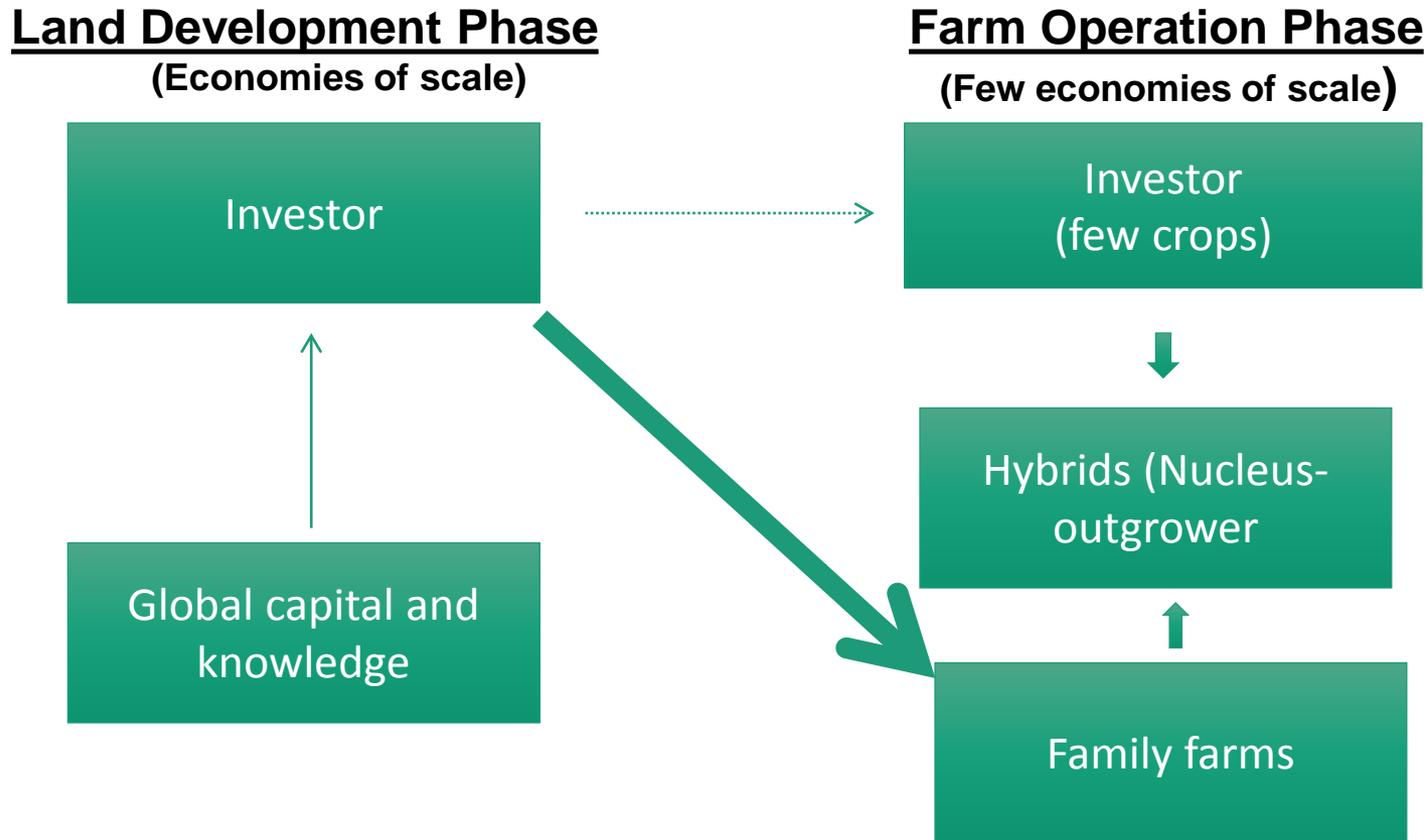
Are there also opportunities to make scale-neutral land improvement?

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 |