

Private Investment, Farm Size and Competitiveness

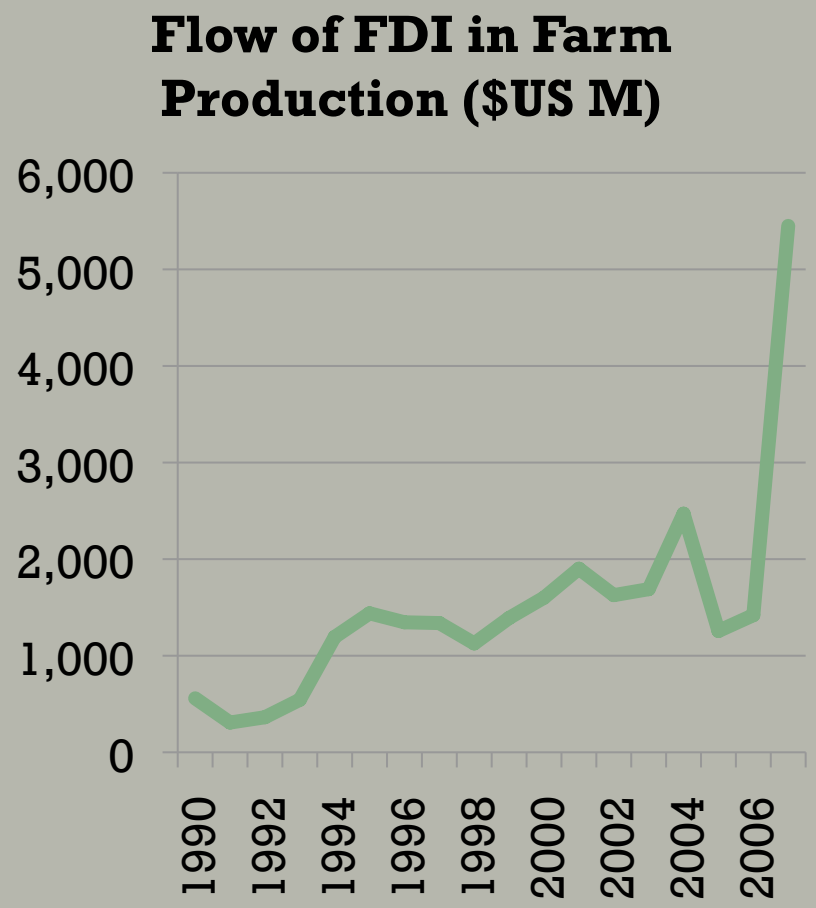
Derek Byerlee
Cornell University
Oct 5th, 2011

Consensus Around a Development Agenda Based on Family Farms

- Family farms, including smallholders, remain the main organizational model in both poor and rich countries
  - Family farms widely accepted as being most efficient
  - Strong growth and employment linkages leading to greater equity and poverty reduction
- Re-affirmed in World Development Report, 2008
  - Also Lipton (2009), Christiaensen & Demery, 2011)

Also Consensus: Agricultural Success Requires Market-Led Approaches

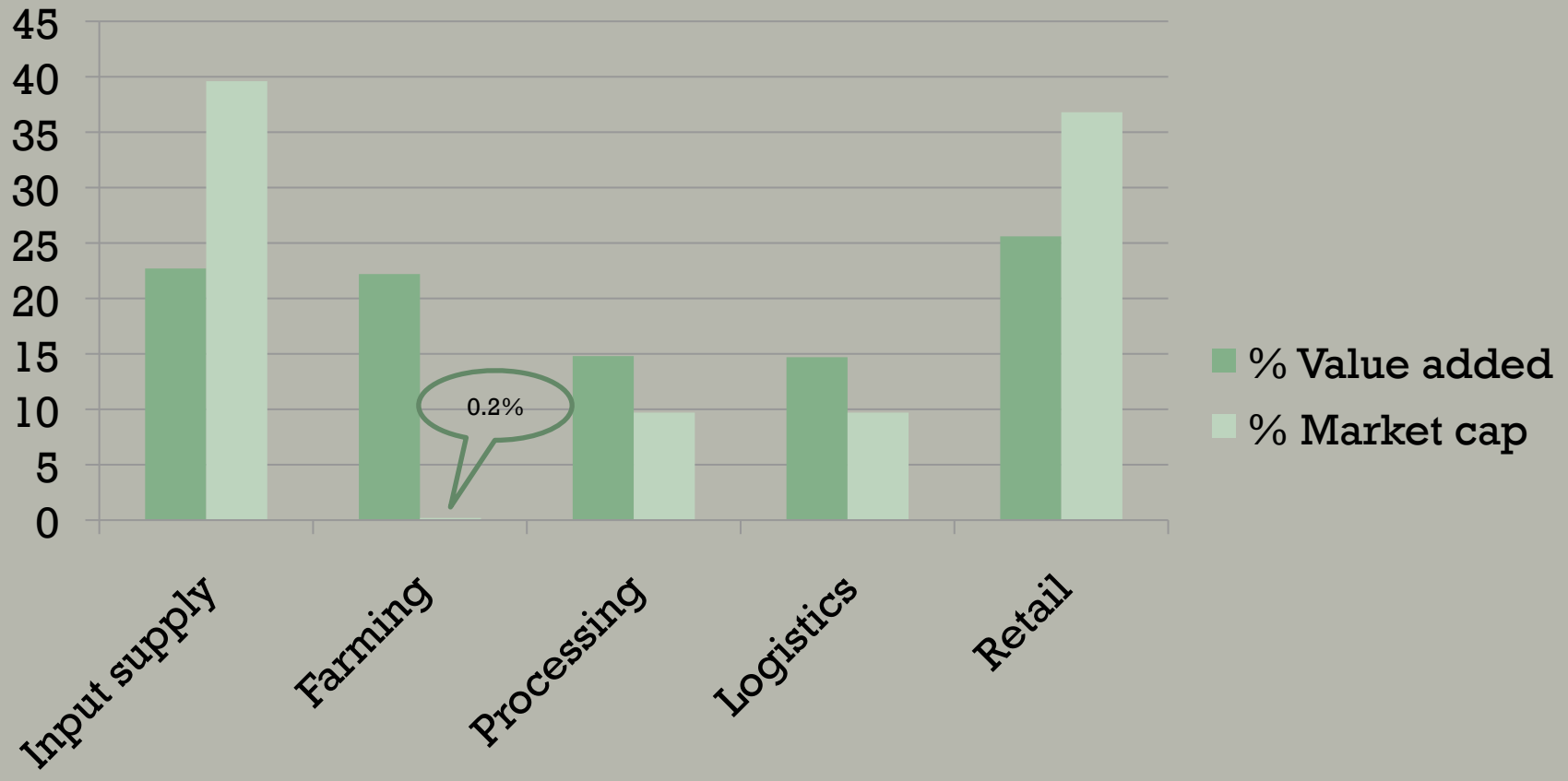
- Demise of parastatals
  - Role of agribusiness in input, output markets
- Liberalization of trade
- Encouragement of private investment
  - Huge investment gap
  - Strong private interest since commodity price trends reversed



Source: WIR, 2009

Corporate Investment in Farming in High Income Countries is Negligible

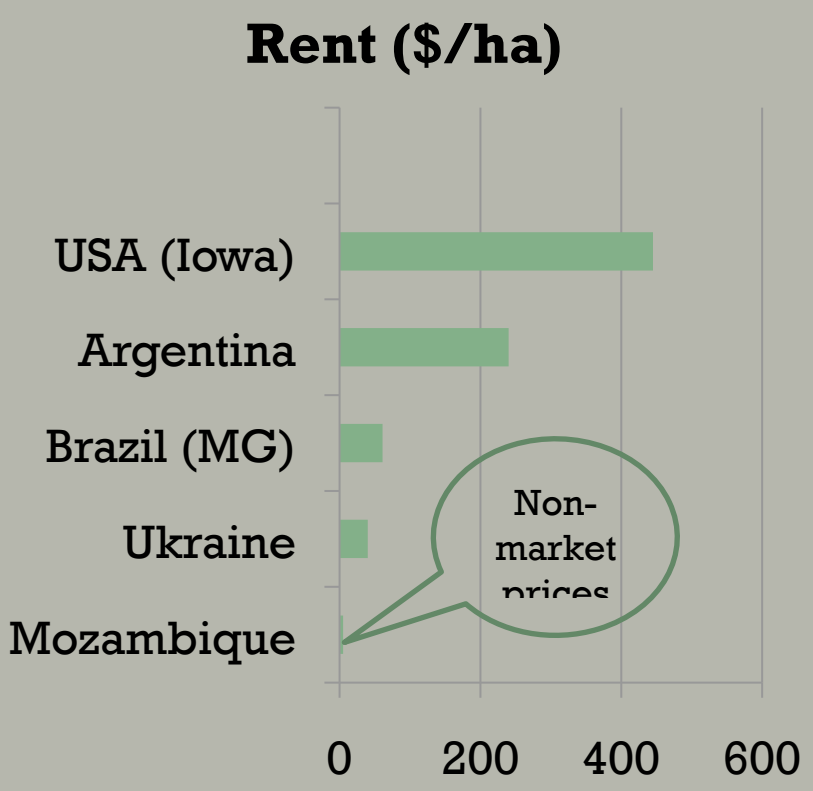
300 Publicly Listed Companies in the Agricultural Value Chain



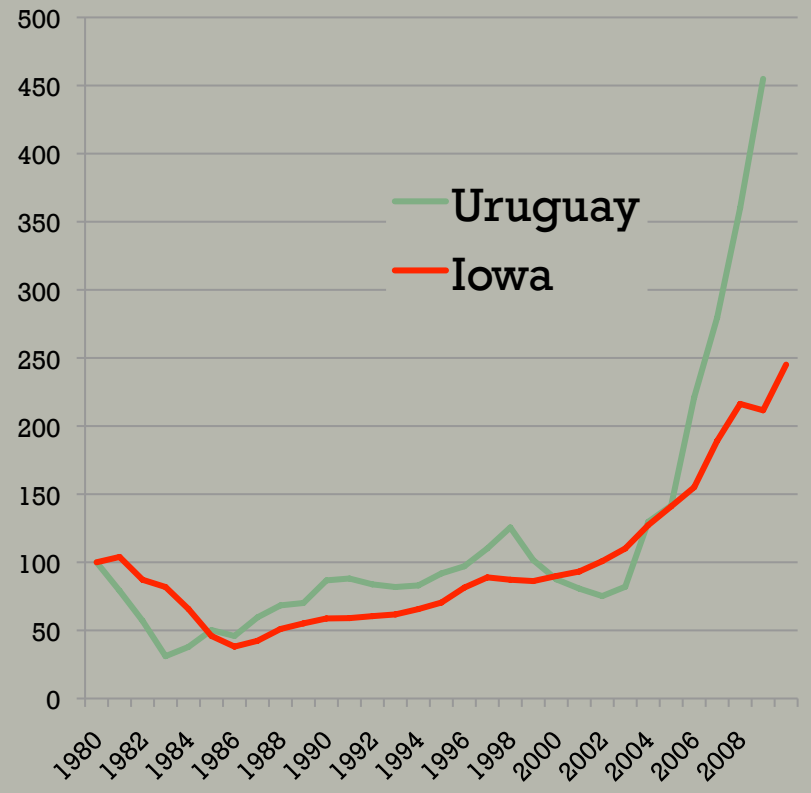
Integrated companies not included

Rising Land Prices Make Investment in Land Attractive in Emerging Economies

LAND RENTAL PRICES FOR 3 T/HA OILSEEDS, 2009



INDEX OF LAND PRICES (1980=100)



Major Investments in Land-Abundant Countries

- Overall 200 M+ ha in last decade (Oxfam)
- Latin America as a global breadbasket
  - Emergence of very large farming companies mostly national (El Tejar, Los Grobos, Adecoagro, Cresud, SLC Agricola, Cosar, Maggi, Brasil Agro)
    - Argentina: Top 30 companies total 2.4 m ha (mostly home grown).
      Brazil Cerrado: 20% of the farmland foreign owned
- RUK as emerging breadbasket
  - Emergence of "superfarms". Ukraine: Top 40 companies manage 4.5 M ha; Russia: Top 30 companies 6.7 M ha (mostly home grown companies)
- SE Asia
  - Palm oil: 8 of world's 25 largest agric prod. Companies

African 'Land Grab': Myths and Reality

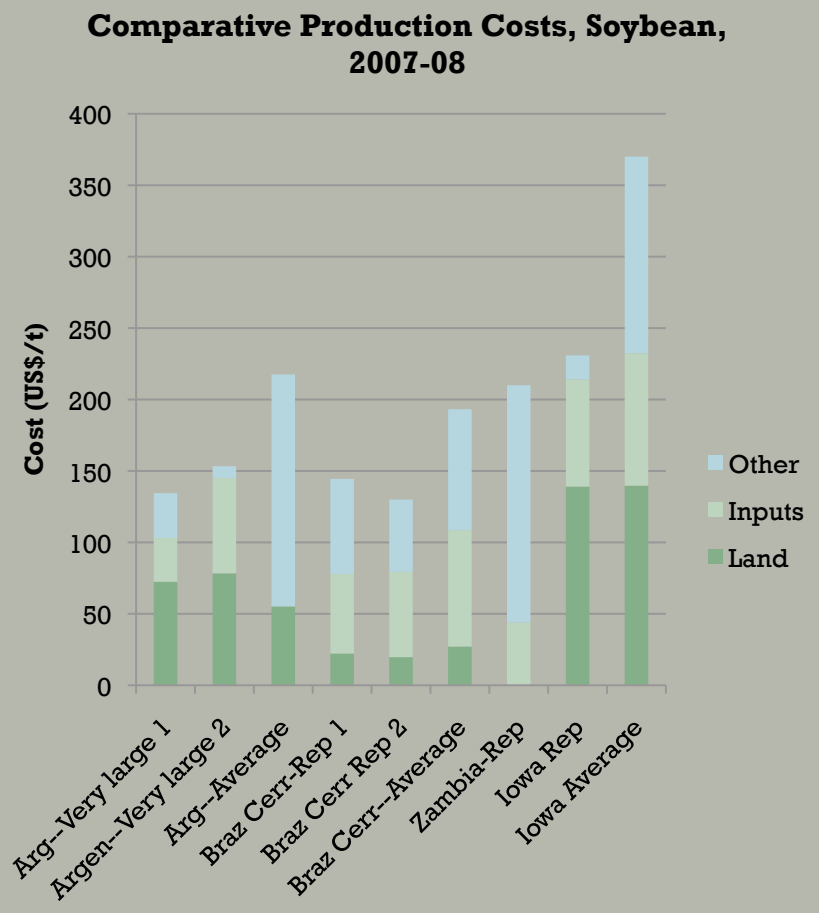
- Reality
  - Lack of land markets and transparency in land transfers
- Media reports > applications > approvals > actual investments
  - Tanzania: 4.4 m ha requested, 1.5% approved
  - But significant in Ethiopia, Mozambique, Liberia, Sudan, Ghana (over 5 M ha total, 2004-09). Median size of 40 K ha.
- Very heterogeneous by country
  - Types of investors (Agbiz, quasi-state, 'speculators'),
  - Types of commodities (biofuels, plantation crops, food,..)
  - Benefits quite variable

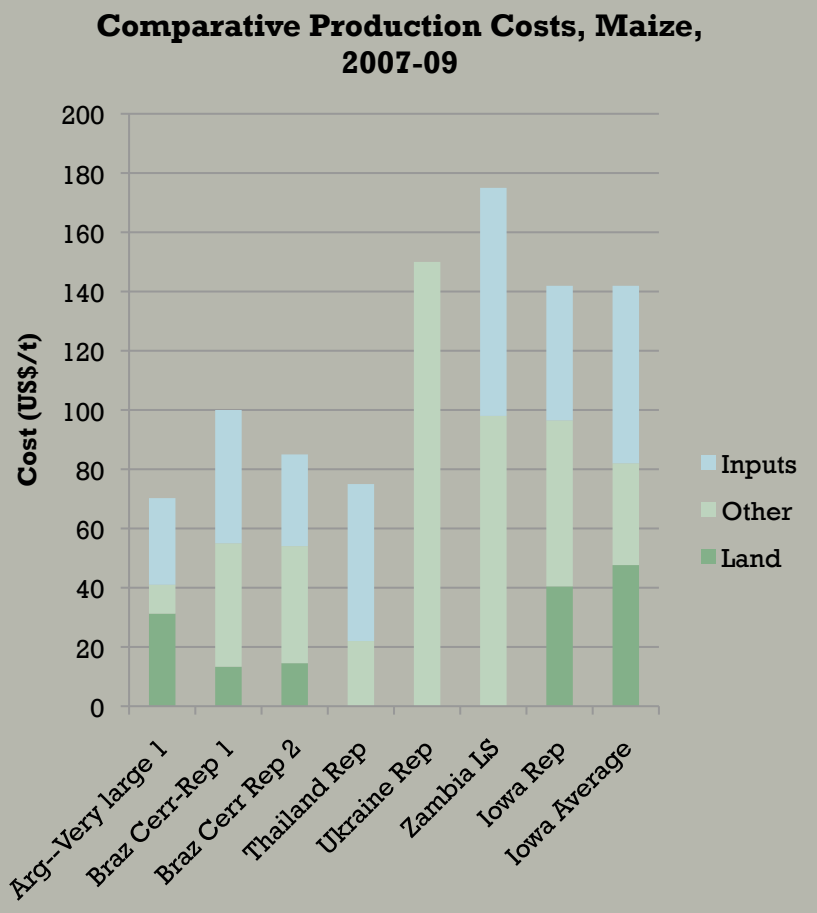
Why Large Scale?

World's Largest Crop Farms are in Emerging Economies

- Large in land area, capital invested and sales (often ~ $US1billion farm revenues)
  - Sime Darby (oil palm)—Malaysia, Indonesia and with 600 K ha + (220 k in Liberia)
  - Cosan (sugar-ethanol)—Brazil with 300k+ ha and 300k ha of contract growers (double with Shell)
  - Fibria (pulp)—Brazil, 500 k+ ha Eucalyptus
  - El Tejar (grains)—Argentina/Brazil/Ur/Par 1,000k+ ha
  - Ivolga (grains)—Russia+ 1,000 k+ ha
  - El Shaikh Mustafa El Amin Co (oilseeds)—Sudan 250 K ha
- Mostly home grown companies operating regionally

Evidence of Competitiveness





Why? Evidence of Efficiency in Some Settings

- Sometimes economies of size
  - Plantation crops through processing
  - Opening new lands (need K, lack L)
  - Standards and certification—fixed costs
- Able to overcome diseconomies of size:
  - New technologies (ZT, ITs)
- Managing risks thru diversification
- Access to cheaper global finance, bargaining power in input and output markets
- Vertical integration to overcome poor logistics

Investments in Processing often Require Large Areas

- Pulp mill + 250 K ha raw materials
  - $US 2 B
- Sugarcane/ethanol mill + 20-70 K ha raw materials
  - $300 M to about $ 1 billion
- Oil palm mill plus 10 K ha raw materials
  - $40 M (10 K ha) and 7 yrs to +ve cash flow
-

Institutional Innovations Evolved for Managing Super Farms

- Specialized management companies combine production factors
  - Argentina—"Pools de Siembra"
    - Lease land and machinery
    - Assets—Professional management
  - State of art IT systems and satellite farming



Policies Often Favor Large Scale

- Tax incentives
- Subsidized interest rates (Brazil)
- Low or zero land prices that encourage risky investments and speculation
  - Mozambique $0.60/ha.
  - Forest extraction policies (Indonesia)
- Start up subsidies and grants—Industrial Policies
  - States picking winners

So What if it is Large Scale?

An Opportunity and a Risk

A MAJOR OPPORTUNITY

- Fills a huge investment gap
- Transfer of technology and know-how
- Export development
- New industries--biofuels
- Employment generation
- Opening of remote regions

WITH SIGNIFICANT RISKS

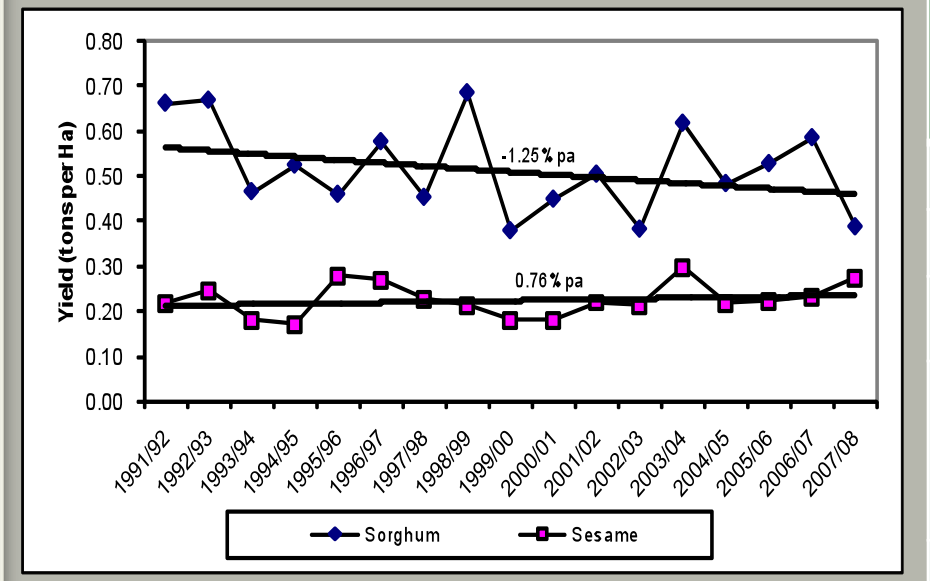
- Lack of land markets—rights of users
- Enclaves with few local benefits
- Negative environmental impacts (forests)
- Risks of highly unequal agrarian structure
  - Governance, services

Sudan as a Breadbasket?

- Semi-mechanized farming schemes 1970s+
  - Investors from Gulf and state credit
  - (Similar newer scheme in Ethiopia)
- Converted up to 11 M ha to large farms
  - Average over 1000 ha, some farms >200,000 ha
- Problems well documented
  - Trampled on rights of local pastoralists, land conflicts
  - Created few jobs
  - Soil degradation and destruction of natural environment

Sudan: Lack of Suitable Technology

Mechanized rainfed system, Sudan; Lose-lose investments



Technology		Size (ha)	Yield (t/ha)	Cost ($/t)
Existing	Company	8000	0.5	277
	Large farm	400	0.4	495
	Smallholder	20	0.5	204
Zero tillage, fertilizer and others	Large farm	400	4.0	125
	Smallholder	20	3.0	143
Source: Min of Agriculture, 2009				

Many Investors Lack Expertise in Tropical Agriculture

HISTORY OF FAILURE OF LARGE-SCALE FARMS IN AFRICA

- 1940s—British groundnut scheme in Tanzania
  - Overlooked smallholders
- 1970s—Sudan mechanized schemes
- 1980s--Saskatoon on the savannah—wheat in Africa
- 2000s—EU Jatropha investors in Africa

UPLAND RICE INVESTOR IN LIBERIA, 2009?



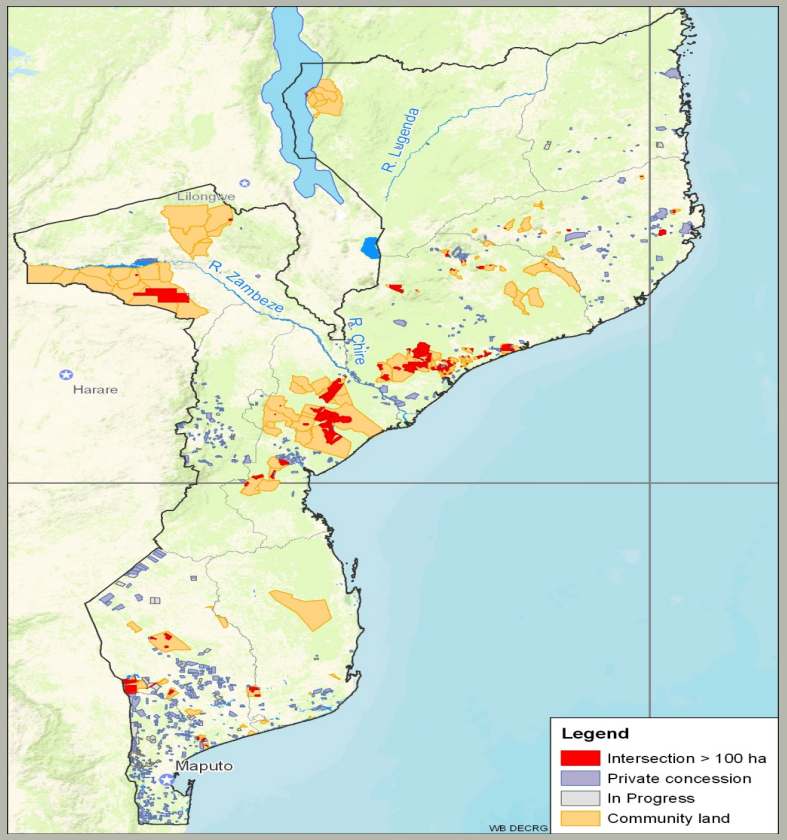


Trampling on Local Land Rights: Zambia and Mozambique

ZAMBIA



MOZAMBIQUE

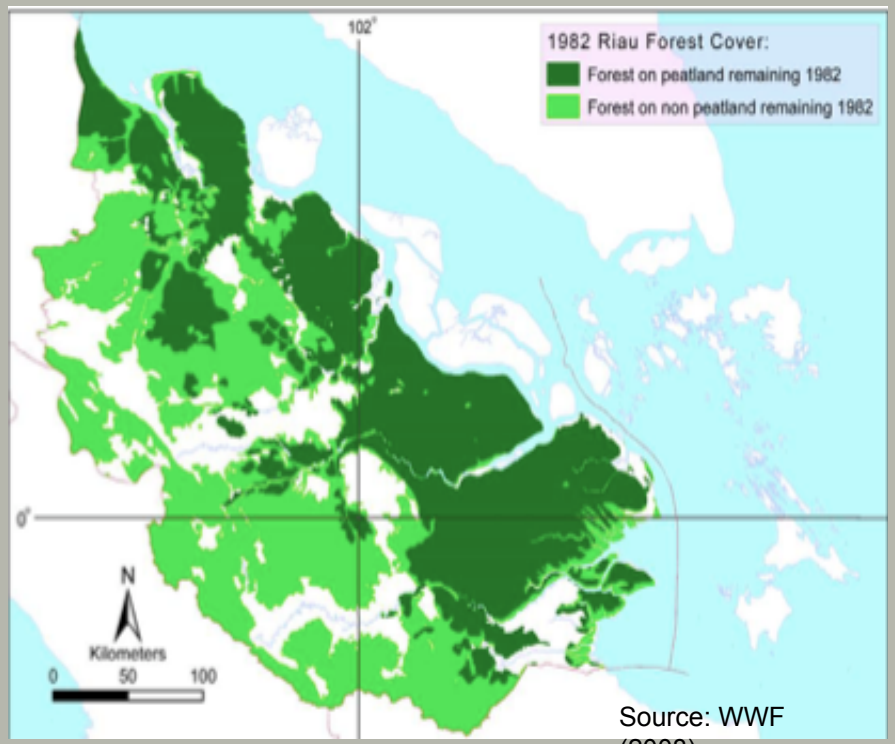


Major Driver of Deforestation
(e.g., Oil palm and plantation forests in Indonesia)

Oil palm development
Indonesia now largest producer
3 M jobs generated; export revenues

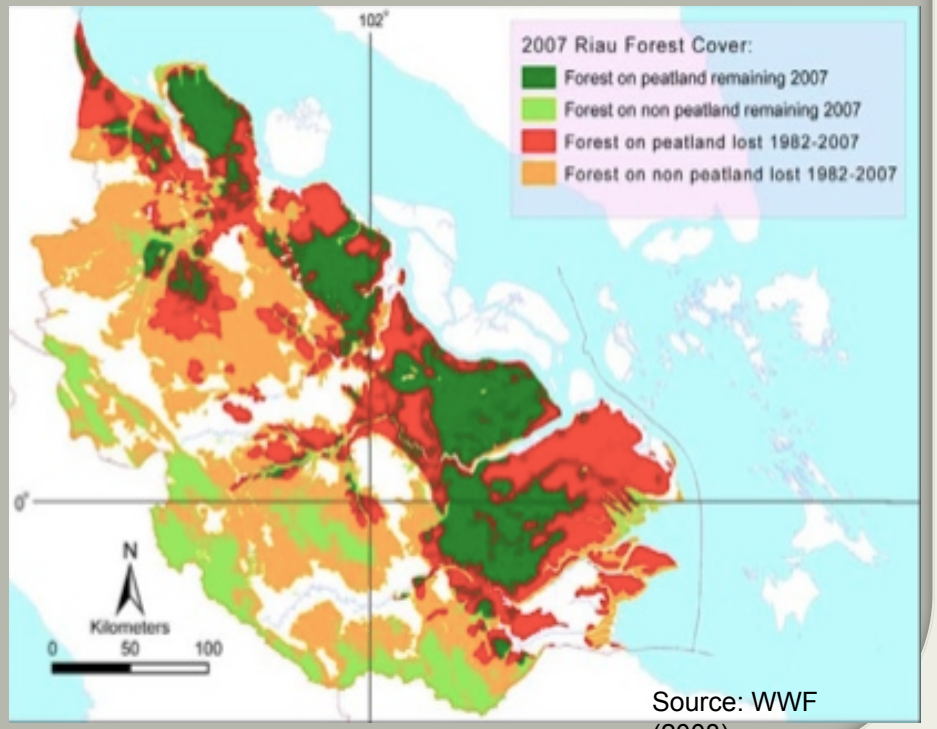
New plantation development
Expected expansion: 7 - 9 M ha by 2020
Policy to develop outlying regions

Forest cover (Riau, Indonesia, 1982)



Source: WWF (2008)

Forest cover loss (Riau, Indonesia, 1982-2007)



Source: WWF (2008)

Risks Vary by Region

	State of markets	Example	Risks	Policy needs
A	Land and other markets function well	Australia, Argentina, Sth Brazil	Few	Transparency--registry of foreign purchases
B	Land and other markets still emerging	Ukraine, Russia Amazon	Significant	Strengthen property rights, contracts, information
C	No formal land markets	sub-Saharan Africa	Major	Transparency, careful screening, formalize property rights

The Opportunity—Bringing Investors and Communities Together

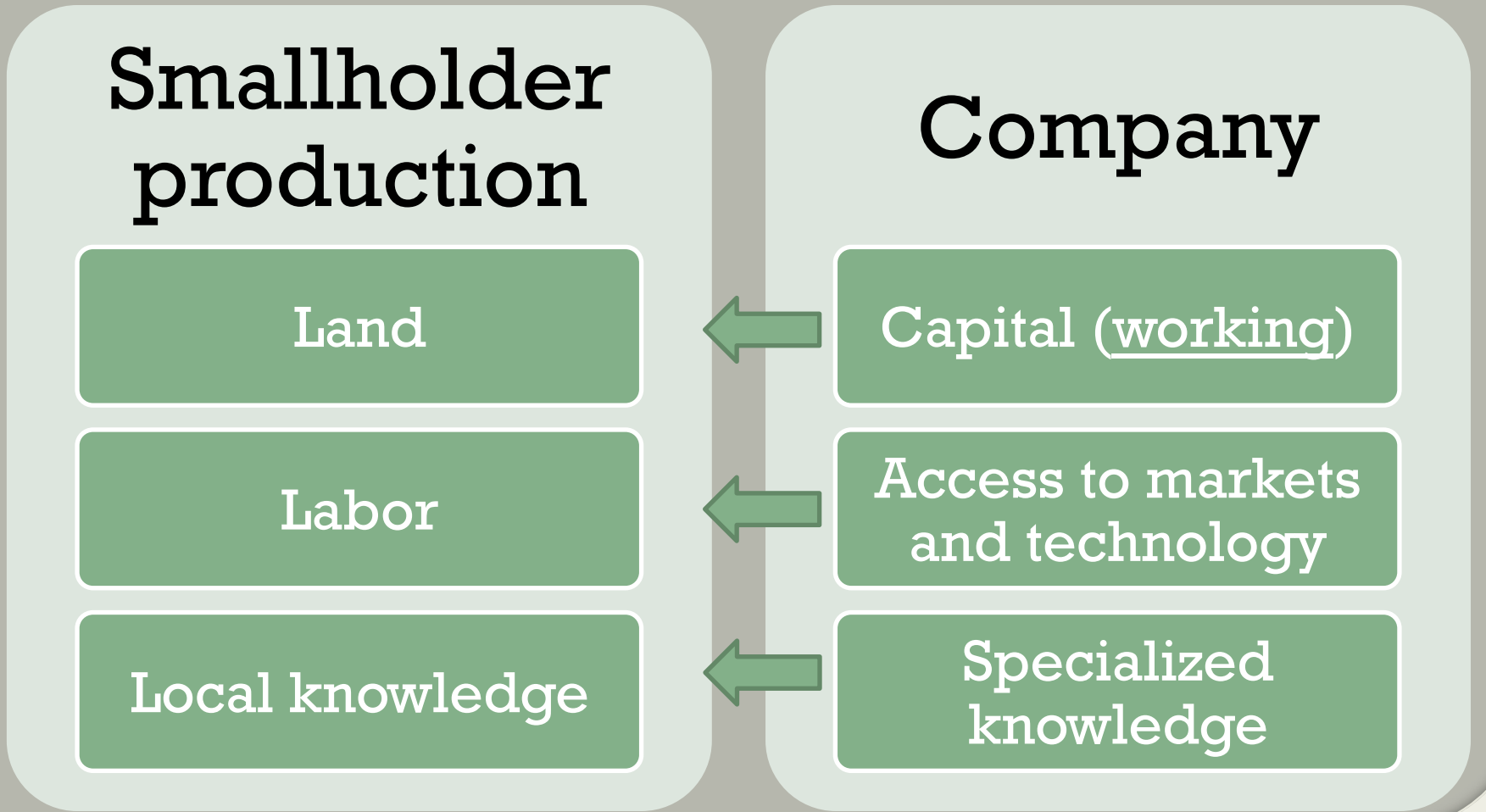
Combining the Best of Both

Potentially Strong Complementarity of Assets

Smallholders/ Communities with land rights	"Good" Companies
Land	Capital and risk
Labor	Access to markets and technology
Local knowledge	Specialized knowledge

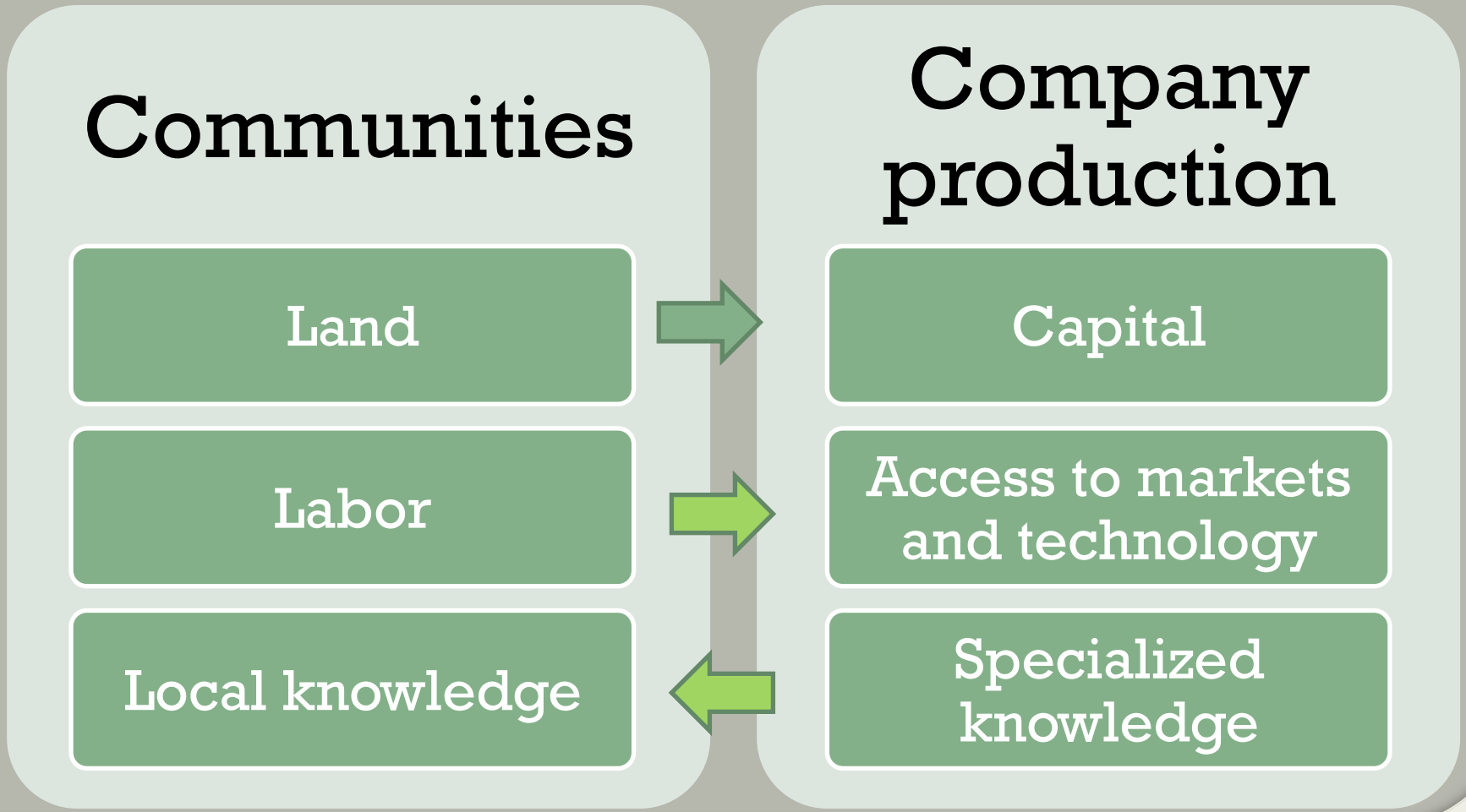
Combining Assets
1. Contracting of Smallholders and Their Associations

(Settled areas, some horticulture, oilseeds, sugarcane)



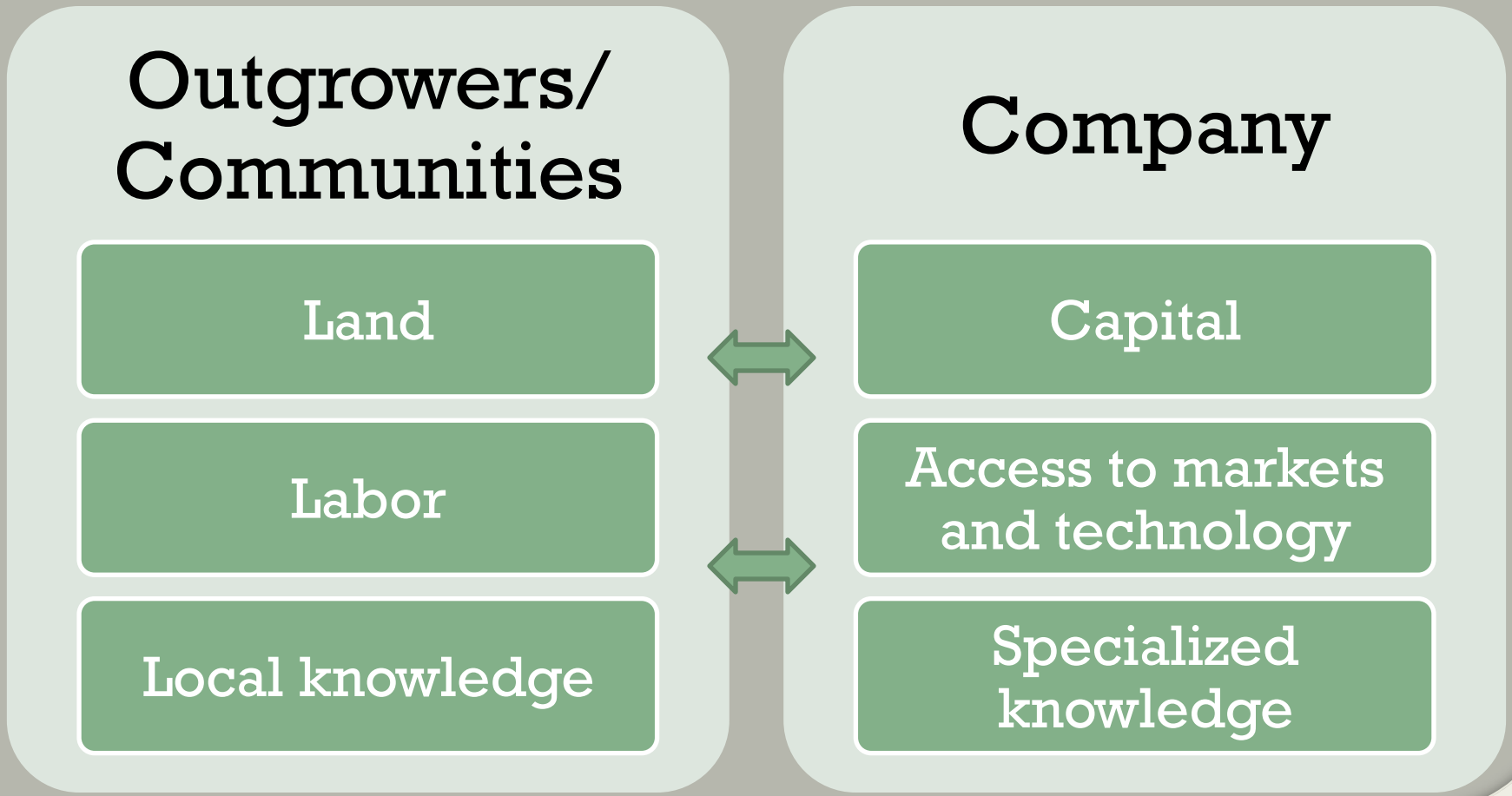
Combining Assets
2. Large-scale Production

(Low population density areas, grains)



Combining Assets
3. Partnerships with Large Scale

(Both large and small-scale: perennials and irrigated areas with high upfront investments)

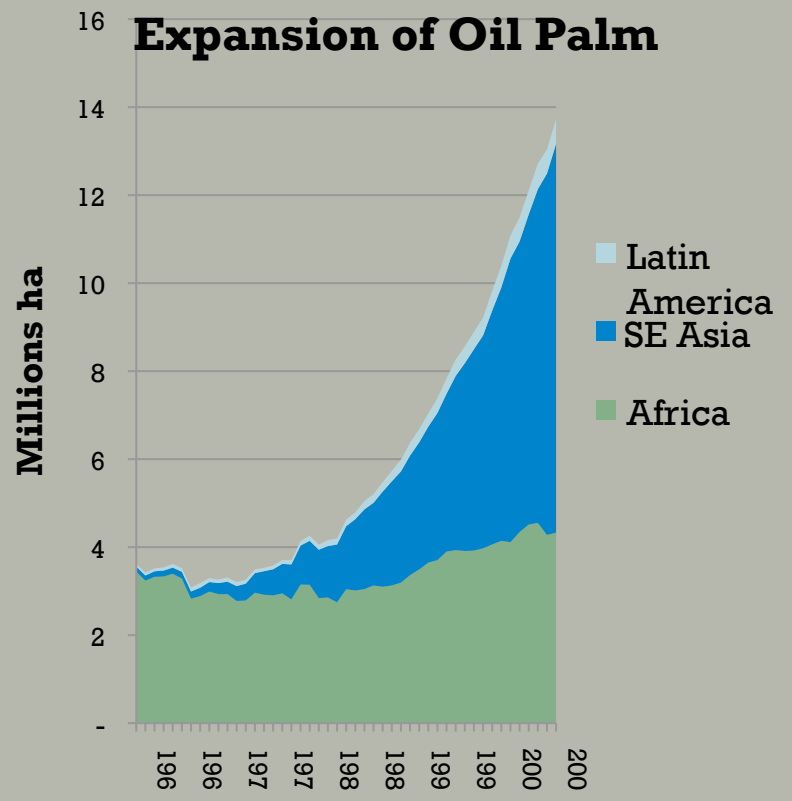


Could Africa Reclaim Oil Palm?

OPPORTUNITY

- Boom commodity for food, uses and now biofuels
- Value of SE Asian exports of PO > <u>All</u> agric exports Africa
- Strong FDI from Asia with associated tech and capital
- Relatively labor intensive and year round income
- Nucleus-outgrower schemes already working in Africa

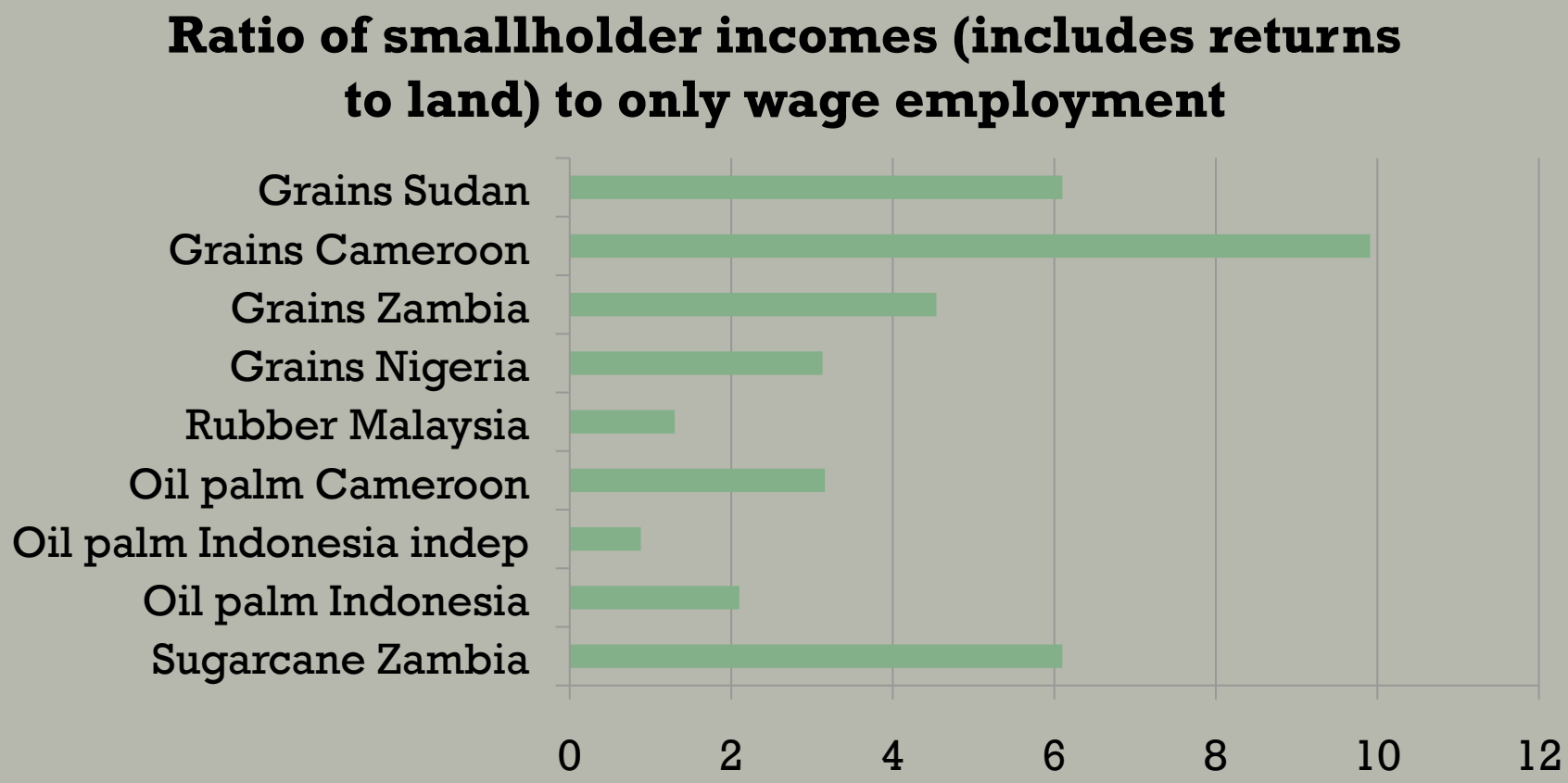
RISE OF OIL PALM IN SE ASIA



Employment Benefits vary Widely

Commodity	Jobs/1000 ha	Invest $/ha	Invest $ per job
Jatropha, Tanzania	600	$600	$1,000
Oil palm, Indonesia	350	$4,000	$11,400
Sugar-ethanol manual-Braz	700	$14,000	$20,000
Sugar-ethanol mech--Braz	150	$14,400	$96,000
Plantation forestry-production + proc--Uruguay	20	$7,000	$360,000
Sorghum Sudan—semi-mechanized	53	$900	$17,000
Wheat-soybean irrig--Zambia	16	$6,000	$375,000
Soy—fully mechanized-Brz	18	$3,600	$200,000
Grains Ukraine fully mechanized	10	$450	$45,000

Major Equity Gains Even if Smallholders Less Productive



Principles for Responsible Agribusiness Investment (Also Private Roundtables)

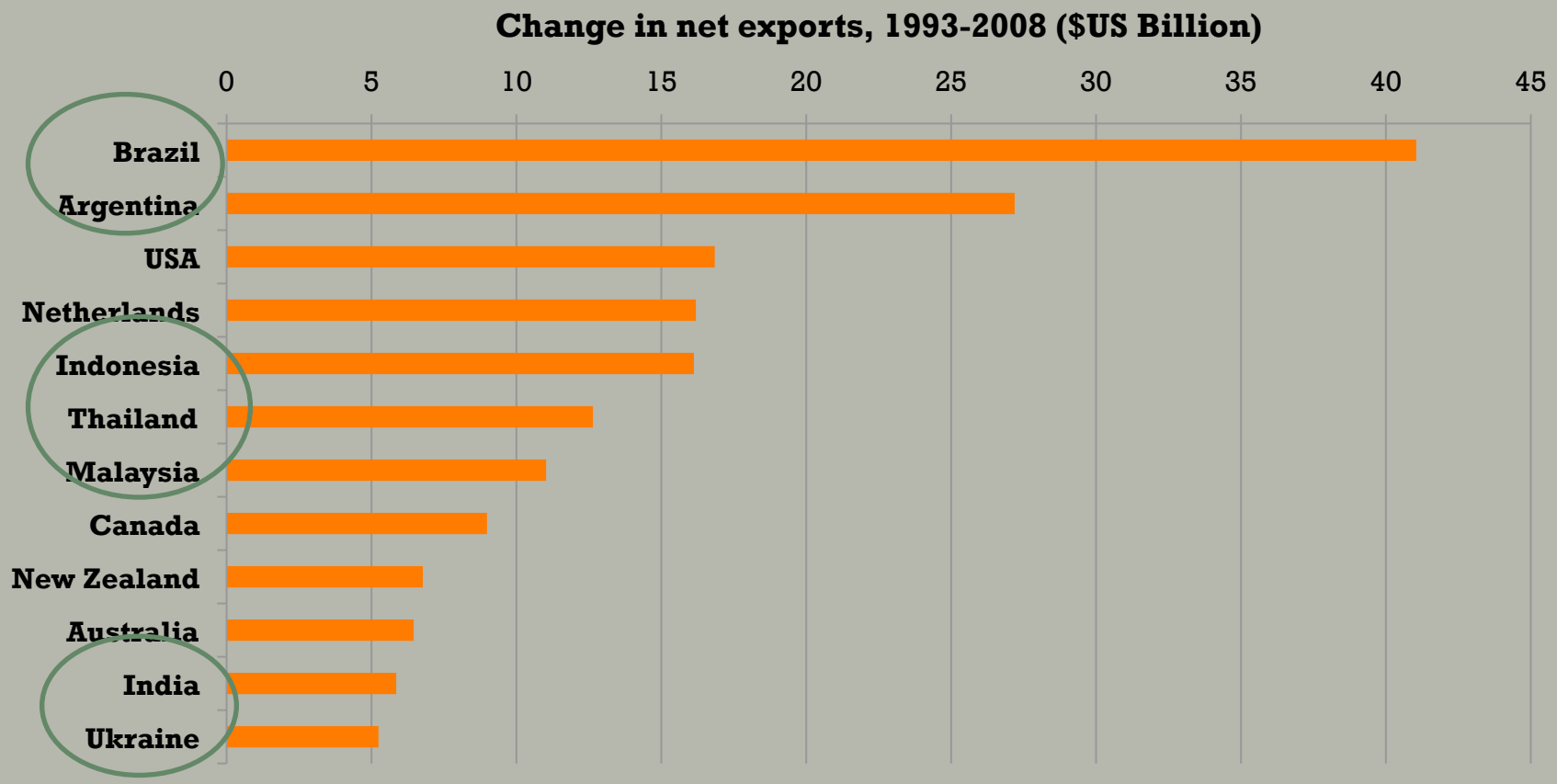
Area of concern	Key Issues
Property rights	• Long established occupancy rights are recognized • Relevant rights are publicly recorded • An accountable & representative structure for local decision-making is in place
Voluntary transfers	• Expropriation not used to transfer land to private interests • Processes for transferring land involve informed consent by existing users • Proceeds from land transfers are fair and accrue to actual users
Transparency	• Relevant information (land prices, contracts) publicly available • Agreements are understood by the parties and can be enforced • Public sector responsibilities add value, are clearly assigned, performed effectively
Economic viability	• Effective mechanisms to check technical viability & economic feasibility in place • Investments are consistent with local strategies for development • Adherence to agreed terms is monitored and enforced
Environmental & social sustainability	• Areas unsuitable for agricultural expansion are properly protected • Environmental policies are clearly defined and adhered to • Social safeguards are implemented

Bottom Line

- Continuing strong private interest
  - Much of it focused on production
  - New business models and techs to manage very large farms
  - Lat America, RUK and SE Asia gain market share
- Major opportunity for agriculture for development
  - But requires governance, local rights, transparency, local community capacity…
- Role of the state
  - Level playing field, start up costs for smallholder

Competitiveness

Middle-income Countries have gained agric. export market share



Successful Cases Being Reviewed

- Criteria
  - Rapid expansion in export shares since 1990
  - Mostly 'new' industries
  - Available studies
  - Personal contacts and interviews
- Uruguay
  - Soybean, plantation forestry/pulp
- Brazil
  - Soybean (Cerrado)
- Colombia
  - Oil palm
- Indonesia (and Malaysia)
  - Oil palm and plantation forestry/pulp
- Peru
  - Asparagus
- Ukraine
  - Grains and oilseeds

Emerging Patterns

- Common elements
  - All tapping buoyant markets
  - All cases with comparative advantage
  - All good macroeconomics, but variable business climate
- Mostly preselected industries
- Significant state support justified by:
  - New industry
  - Cases with lumpy and/or long gestation investments
  - Need to coordinate along the value cha

Emerging Patterns

- Mostly successful in terms of economic benefits but:
  - Incentives that distorted relative factor prices had significant welfare costs
  - Successes often 'blemished' when subsidies and – ve externalities costed
  - State support directed at firms associated with rent seeking under poor governance
- Support to including smallholders has been effective
- Neighbor effects (FDI, technology, incentives) important