RISING GLOBAL INTEREST IN FARMLAND

CAN IT YIELD SUSTAINABLE & EQUITABLE BENEFITS?

Securing Africa’s Food Security: Land Purchases, Gender Inequality & Private Sector Development
AAAPD & World Bank, Washington DC, Oct. 6, 2010

Klaus Deininger, World Bank
Overview

What is happening?
What is the impact & country policies’ role?
Supply of land and potential for expansion
Policy Implications
What is happening
It started with the commodity price hike...

[Graph showing commodity prices (US $ / t) from Mar-07 to Mar-10 for Maize, Rice, and Wheat]
It started with the commodity price hike...
## Past area expansion & new ‘demand’

<table>
<thead>
<tr>
<th>Region</th>
<th>1961</th>
<th>1997</th>
<th>2007</th>
<th>61-97</th>
<th>97-07</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSA</td>
<td>134.6</td>
<td>192.2</td>
<td>218.5</td>
<td>1.6</td>
<td>2.6</td>
</tr>
<tr>
<td>LAC</td>
<td>102.6</td>
<td>160.9</td>
<td>168.0</td>
<td>1.6</td>
<td>0.7</td>
</tr>
<tr>
<td>EAP</td>
<td>183.9</td>
<td>235.7</td>
<td>262.8</td>
<td>1.4</td>
<td>2.7</td>
</tr>
<tr>
<td>SAS</td>
<td>197.9</td>
<td>212.9</td>
<td>213.5</td>
<td>0.4</td>
<td>0.1</td>
</tr>
<tr>
<td>Oceania</td>
<td>34.0</td>
<td>42.8</td>
<td>46.7</td>
<td>0.2</td>
<td>0.4</td>
</tr>
<tr>
<td>MENA</td>
<td>77.9</td>
<td>91.3</td>
<td>89.0</td>
<td>0.4</td>
<td>-0.2</td>
</tr>
<tr>
<td>ECA</td>
<td>282.9</td>
<td>263.6</td>
<td>241.7</td>
<td>-0.2</td>
<td>-2.2</td>
</tr>
<tr>
<td>WEU</td>
<td>99.4</td>
<td>86.8</td>
<td>83.5</td>
<td>-0.4</td>
<td>-0.3</td>
</tr>
<tr>
<td>NAM</td>
<td>235.3</td>
<td>232.5</td>
<td>225.3</td>
<td>-0.1</td>
<td>-0.7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1103.5</strong></td>
<td><strong>1518.6</strong></td>
<td><strong>1549.0</strong></td>
<td><strong>9.5</strong></td>
<td><strong>3.0</strong></td>
</tr>
</tbody>
</table>
### Past area expansion & new ‘demand’

| Region | 1961 | 1997 | 2007 | 61-97 | 97-07 | Demand | %  
|--------|------|------|------|-------|-------|--------|------
| SSA    | 134.6| 192.2| 218.5| 1.6   | 2.6   | 39.7   | 47.3%
| LAC    | 102.6| 160.9| 168.0| 1.6   | 0.7   | 3.2    | 4.9%
| EAP    | 183.9| 235.7| 262.8| 1.4   | 2.7   | 8.0    | 10.1%
| SAS    | 197.9| 212.9| 213.5| 0.4   | 0.1   | 0.7    | 4.6%
| Oceania| 34.0 | 42.8 | 46.7 | 0.2   | 0.4   | 0.0    | 0.4%
| MENA   | 77.9 | 91.3 | 89.0 | 0.4   | -0.2  | 1.4    |
| ECA    | 37.9 | 263.6| 241.7| -0.2  | -2.2  | 4.6    |
| WEU    | 99.4 | 86.8 | 83.5 | -0.4  | -0.3  | -      |
| NAM    | 235.3| 232.5| 225.3| -0.1  | -0.7  | 0.2    |
| Total  | 1103.5| 1518.6| 1549.0| 9.5   | 3.0   | 57.8   |
Lessons from past area expansion

- **Latin America**
  - Amazon: Policy-induced pasture, $\frac{1}{3}$ utilized, monitor, beef
  - Cerrado: Exceptional R&D but poverty impact reduced by capital subsidies
  - Agro-export growth in Peru: Significant impact based on auctions

- **Asia**
  - Oilpalm 2.9 to 6.3 M ha in Indonesia: Tree subsidies (18 Mn cut); tenure issues
  - Challenge of shifting expansion away from forest (*alang alang*; REDD)
  - Rice exclusively smallholder; high poverty impact after tenure regularization

- **Eastern Europe:**
  - Very variable post-decollectivization experience:
  - Mega-farms in RUK after Russian area decline (> 30 Mha )
  - Highly concentrated due to market advantages; technology

- **Africa**
  - Policies: Taxation of ag. & exportables, low public investment (< 4%)
  - Technology, infrastr., institutions limited success of investment in bulk comm.
  - Success limited to high value commodities; policies critical for evolution
## Probability of being target of LS inv.

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Interest 1</th>
<th>Interest 2</th>
<th>Impl. 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suitable land nonf.</td>
<td>0.3049**</td>
<td>0.2987**</td>
<td>0.3916***</td>
</tr>
<tr>
<td>Suitable land forest</td>
<td>0.0503</td>
<td>0.0396</td>
<td>0.0770</td>
</tr>
<tr>
<td>Yield gap</td>
<td>-0.3635</td>
<td>-0.2774</td>
<td>-1.7457**</td>
</tr>
<tr>
<td>Land tenure recognition</td>
<td>-0.512***</td>
<td>-0.691***</td>
<td>-0.3416*</td>
</tr>
<tr>
<td>Investment protection</td>
<td>+0.0058*</td>
<td></td>
<td>0.0033</td>
</tr>
<tr>
<td>Pseudo R-squared</td>
<td>0.311</td>
<td>0.339</td>
<td>0.268</td>
</tr>
</tbody>
</table>
Do press reports imply action?

<table>
<thead>
<tr>
<th>Country</th>
<th>All projects</th>
<th>Domestic</th>
<th>Foreign</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Projects (#)</td>
<td>Total area (1000 ha)</td>
<td>Median (ha)</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>406</td>
<td>1,190</td>
<td>700</td>
</tr>
<tr>
<td>Liberia</td>
<td>17</td>
<td>1,602</td>
<td>59,374</td>
</tr>
<tr>
<td>Mozambique</td>
<td>405</td>
<td>2,670</td>
<td>2,225</td>
</tr>
<tr>
<td>Sudan</td>
<td>132</td>
<td>3,965</td>
<td>7,980</td>
</tr>
</tbody>
</table>
Inventory/policy framework

- Gaps in process of investment processing/approval
  - Expropriation/extinction of existing rights often required
  - Unclear/duplicative institutional responsibility
  - Low land payments; rarely collected (biased project choice)
  - Neglect of economic/technical viability
  - Limited capacity to do/monitor ESIAs
  - Rudimentary boundary description/data management
  - Asset & employment generation limited

- Across countries policy a key determinant
  - Tanzania vs. Mozambique – 50% not utilized
  - Public auction, technical review, down-payment
Overlaps:
1.4 m ha; 418 cases
An example from Zambia

Boundary misaligned with road
Allocation over existing smallholders
No visible large-scale cultivation
Case Study evidence

- Near universal lack of consultation/neglect of property rights
  - Even if consultations, agreements are not written/monitored
  - Ill-informed decisions due to lack of information on rights/project
  - Vulnerable people & women left out – implicit subsidy through land price

- Limited consideration of economic viability
  - Non-viable projects may subsequently encroach on local rights
  - Negative effects often shifted to locals (damage but no benefits)
  - Conflict due to neglect of rights undermines profitability
  - Requirements for liquidating non-profitable investments rarely considered

- Different channels for benefits to materialize
  - Local public goods: Often compensation for land (comm dev funds)
  - Employment: Crop specific, does not benefit all (skill-dependence)
  - Technology & market spillovers: Not for the most destitute
  - Need to tailor to local characteristics – this is rarely done
Is there potential?
Going beyond demand....

- The AEZ methodology
  - Simulation of climatic suitability for rainfed high intensity cultivation
  - 5 key crops (wheat, maize, soybean, sugarcane, oil palm)

- Main uses considered here
  - Estimate share of potential utilized on cultivated areas
  - Quantify area available for potential expansion by country/crop
  - Identify the ‘optimum’ crop and gross revenue to be attained
  - Link to a transport cost grid to establish land rental surface
  - Check robustness by assessing impact of climate change

- Considerable scope for policy at country level
  - Anticipate demand for land & assess global competitiveness
  - Provide information to potential investors/cluster development
  - Guide public good provision (technology, infrastr., property rights),
  - Objective reference for land valuation/price negotiations
  - Simulation of infrastructure impact on land prices
Potential output

Source: IIASA
Yield gap, share of land used, area/rural person

**Africa**

- Rwanda: 0.14
- Malawi: 0.22
- Ghana: 0.52
- Ethiopia: 0.21
- Tanzania: 0.29
- D.R. Congo: 0.35
- Sudan: 0.70
- Zambia: 0.56
- Mozambique: 0.40
- Madagascar: 0.26

**Latin America & Caribbean**

- El Salvador: 0.35
- Haiti: 0.20
- Peru: 0.46
- Honduras: 0.46
- Colombia: 0.64
- Brazil: 2.25
- Argentina: 8.82
- Uruguay: 7.91

Legend:
- Ratio of cultivated to total suitable area
- 1 - Yield Gap
## Yield gap estimates

<table>
<thead>
<tr>
<th>Region</th>
<th>Maize</th>
<th>Oil palm</th>
<th>Soybean</th>
<th>S. cane</th>
</tr>
</thead>
<tbody>
<tr>
<td>S Asia</td>
<td>0.62</td>
<td>0.74</td>
<td>0.47</td>
<td>0.68</td>
</tr>
<tr>
<td>Europe</td>
<td>0.81</td>
<td>n.a.</td>
<td>0.84</td>
<td>n.a.</td>
</tr>
<tr>
<td>N&amp;W Africa Asia</td>
<td>0.62</td>
<td>n.a.</td>
<td>0.91</td>
<td>0.95</td>
</tr>
<tr>
<td>N America</td>
<td>0.89</td>
<td>n.a.</td>
<td>0.77</td>
<td>0.72</td>
</tr>
<tr>
<td>Oceania</td>
<td>1.02</td>
<td>0.6</td>
<td>1.05</td>
<td>0.91</td>
</tr>
<tr>
<td>S America</td>
<td>0.65</td>
<td>0.87</td>
<td>0.67</td>
<td>0.93</td>
</tr>
<tr>
<td>SS Africa</td>
<td>0.20</td>
<td>0.32</td>
<td>0.32</td>
<td>0.54</td>
</tr>
</tbody>
</table>
Country level availability of uncult. land

Concentrated
- > 90% in 32 ctres
- 16 in Africa

Large relative to cult. area
- > double in 11 ctrs
- > triple in 6

Social disruption

Other constraints

Non-cultivated, -forested, -protected land (1000 ha and relative)

<table>
<thead>
<tr>
<th>Country</th>
<th>Area</th>
<th>Relative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sudan</td>
<td>46,025</td>
<td>2.82</td>
</tr>
<tr>
<td>Brazil</td>
<td>45,472</td>
<td>0.73</td>
</tr>
<tr>
<td>Russian Fed.</td>
<td>38,434</td>
<td>0.32</td>
</tr>
<tr>
<td>Argentina</td>
<td>29,500</td>
<td>1.05</td>
</tr>
<tr>
<td>Australia</td>
<td>26,167</td>
<td>0.57</td>
</tr>
<tr>
<td>D.R. Congo</td>
<td>22,498</td>
<td>1.53</td>
</tr>
<tr>
<td>Mozambique</td>
<td>16,256</td>
<td>2.85</td>
</tr>
<tr>
<td>Madagascar</td>
<td>16,244</td>
<td>4.63</td>
</tr>
<tr>
<td>Chad</td>
<td>14,816</td>
<td>1.92</td>
</tr>
<tr>
<td>Zambia</td>
<td>13,020</td>
<td>2.83</td>
</tr>
<tr>
<td>Indonesia</td>
<td>10,486</td>
<td>0.32</td>
</tr>
<tr>
<td>Angola</td>
<td>9,684</td>
<td>3.31</td>
</tr>
<tr>
<td>Uruguay</td>
<td>9,269</td>
<td>4.56</td>
</tr>
<tr>
<td>Venezuela</td>
<td>8,966</td>
<td>2.29</td>
</tr>
<tr>
<td>United States</td>
<td>8,756</td>
<td>0.05</td>
</tr>
<tr>
<td>Canada</td>
<td>8,684</td>
<td>0.17</td>
</tr>
<tr>
<td>Tanzania</td>
<td>8,659</td>
<td>0.94</td>
</tr>
<tr>
<td>Bolivia</td>
<td>8,317</td>
<td>2.92</td>
</tr>
<tr>
<td>Paraguay</td>
<td>7,269</td>
<td>1.34</td>
</tr>
<tr>
<td>Colombia</td>
<td>4,971</td>
<td>0.68</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>4,726</td>
<td>0.34</td>
</tr>
<tr>
<td>Cameroon</td>
<td>4,655</td>
<td>0.68</td>
</tr>
<tr>
<td>Kenya</td>
<td>4,615</td>
<td>0.99</td>
</tr>
<tr>
<td>Mexico</td>
<td>4,360</td>
<td>0.17</td>
</tr>
<tr>
<td>Mali</td>
<td>3,908</td>
<td>0.47</td>
</tr>
<tr>
<td>Papua N.G.</td>
<td>3,771</td>
<td>5.93</td>
</tr>
<tr>
<td>Burkina Faso</td>
<td>3,713</td>
<td>0.77</td>
</tr>
<tr>
<td>Belarus</td>
<td>3,691</td>
<td>0.61</td>
</tr>
<tr>
<td>South Africa</td>
<td>3,555</td>
<td>0.23</td>
</tr>
<tr>
<td>Congo</td>
<td>3,476</td>
<td>6.79</td>
</tr>
<tr>
<td>Ukraine</td>
<td>3,442</td>
<td>0.10</td>
</tr>
</tbody>
</table>

World Total: 445,858

445 Mn ha (< 25/km²)
306 Mn ha (< 10/km²)
198 Mn ha (< 5/km²)
Availability of land for rainfed crops

- Sudan
- DRC
- Zambia
- Mozambique
- Chad
- Madagascar
- Angola
- Tanzania
- (rest of Africa)
- Brazil
- Argentina
- Bolivia
- Uruguay
- Venezuela
- Paraguay
- (rest of LAC)
Yield Gap

Suitable relative to cultivated area (in logarithms)
Typology: Implications for agrarian structure

- **Type 1**
  - Smallholder path; mech. adjust to declining ag. pop.
  - Larger operational areas through market transactions

- **Type 3**
  - Public/private provision of technology & infrastructure (contract farming); regulatory issues
  - Land as important safety net & asset; not push out if no alternative available

- **Type 2**
  - Economically sustainable large farm expansion (funds)
  - Land markets can take care of it if distributional, environmental & social issues are regulated

- **Type 4**
  - Increasing output requires mechanization & larger farms
  - How will have long-term impacts (dualism vs. broad-based growth)
  - Challenges considerable; property rights & land markets not defined
## Expansion Potential: Maize

### Top countries with maize expansion potential (<25 pop/km²)

<table>
<thead>
<tr>
<th>Country</th>
<th>Area</th>
<th>Yield</th>
<th>Total</th>
<th>&lt; 6 h</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argentina</td>
<td>3,412</td>
<td>6.45</td>
<td>9,469</td>
<td>7,704</td>
</tr>
<tr>
<td>Australia</td>
<td>68</td>
<td>5.69</td>
<td>18,870</td>
<td>2,890</td>
</tr>
<tr>
<td>Brazil</td>
<td>14,445</td>
<td>4.09</td>
<td>11,388</td>
<td>10,406</td>
</tr>
<tr>
<td>Chad</td>
<td>235</td>
<td>0.96</td>
<td>9,131</td>
<td>3,736</td>
</tr>
<tr>
<td>Madagascar</td>
<td>250</td>
<td>1.48</td>
<td>6,753</td>
<td>4,654</td>
</tr>
<tr>
<td>Mozambique</td>
<td>1,400</td>
<td>0.92</td>
<td>7,592</td>
<td>4,206</td>
</tr>
<tr>
<td>Russian Fed.</td>
<td>1,732</td>
<td>3.86</td>
<td>2,458</td>
<td>2,170</td>
</tr>
<tr>
<td>Sudan</td>
<td>31</td>
<td>2.02</td>
<td>31,889</td>
<td>14,390</td>
</tr>
<tr>
<td>United States</td>
<td>31,826</td>
<td>9.66</td>
<td>1,647</td>
<td>1,538</td>
</tr>
<tr>
<td>Uruguay</td>
<td>81</td>
<td>4.15</td>
<td>2,735</td>
<td>2,225</td>
</tr>
<tr>
<td>Venezuela</td>
<td>740</td>
<td>3.47</td>
<td>4,640</td>
<td>3,919</td>
</tr>
<tr>
<td>Zambia</td>
<td>664</td>
<td>2.18</td>
<td>5,716</td>
<td>2,383</td>
</tr>
<tr>
<td><strong>World</strong></td>
<td><strong>161,017</strong></td>
<td><strong>156,828</strong></td>
<td><strong>83,310</strong></td>
<td></td>
</tr>
</tbody>
</table>
Policy implications
Good policy, legal & institutional framework essential for sustainable & equitable outcomes

<table>
<thead>
<tr>
<th>Area of concern</th>
<th>Key Issues</th>
</tr>
</thead>
</table>
| **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 |
Roles by different stakeholders

1. **Government**: Integrate investment into agric. strategy
   - Identify areas with potential & provide complementary public goods
   - Recognize, register, and help enforce property rights (incl. valuation)
   - Improve & streamline institutional framework

2. **Private sector**: Promote industry standards that integrate land rights
   - Leading industry practice can provide basis for regulation
   - Extend coverage/disclosure of existing approaches (e.g. Equator Principles)
   - Explore multi-stakeholder initiatives (e.g. EITI) building on existing work

3. **Civil society & academics**: Contribute to greater transparency
   - Advise, monitor, implement to build civil society & community capacity
   - Give communities voice; empower them to negotiate & push enforcement
   - Publicize promising examples; link back to policy

4. **Global community**: Capacity building support to interested governments
   - Technical support & complementary infrastructure, institutional capacity
   - Create fora to monitor impact & share examples of good practice
   - In the context of a multi-stakeholder approach
Summing up

- **This is a large potential for poor African countries**
  - Demand; opportunity for private investment, counter anti-ag. bias
  - Institutions need to adapt - land tenure is a *necessary* cond.
  - Investment if these are not met with unfavorable consequences

- **Processes on the ground are far from optimal**
  - Huge gaps in capacity and policy framework
  - Failure by governments to exercise due diligence (EIAs, SIAs)
  - Large amounts of unviable projects with minimal benefits

- **Countries need to take charge**
  - Strategy & institutions: Long-term comparative advantage
  - Monitoring and adjustment on continued basis
  - Focus on transparency and good land governance
  - We can help establish a framework for this