L18 Land Reform

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Introduction

- Focus on a key aspect of rural development: ownership of land
- Rural sector plays a much larger role in LDCs, esp. with regard to population composition
- Rural poverty typically higher than urban poverty, in S Asia and S-S Africa
- Ownership of land is the single most important determinant of incomes, consumption, security and social status

References: Ray, Development Economics, Ch 12
Our primary unit of analysis is agricultural land owned by a household for a number of reasons. The focus on land is natural given its significance in agriculture.

Table 1
Income, consumption and occupation by land ownership status.

<table>
<thead>
<tr>
<th>land category</th>
<th>Landless</th>
<th>Marginal</th>
<th>Small</th>
<th>Medium</th>
<th>Large</th>
<th>Big</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Household size</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average household size</td>
<td>4.64</td>
<td>4.80</td>
<td>5.67</td>
<td>6.76</td>
<td>7.93</td>
<td>9.11</td>
</tr>
<tr>
<td>B. Sources of income (rupees)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Farm income</td>
<td>676</td>
<td>5203</td>
<td>17,047</td>
<td>27,924</td>
<td>35,008</td>
<td>57,259</td>
</tr>
<tr>
<td>Wage income</td>
<td>1032</td>
<td>1466</td>
<td>309</td>
<td>43</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Remittances</td>
<td>270</td>
<td>541</td>
<td>442</td>
<td>492</td>
<td>960</td>
<td>0</td>
</tr>
<tr>
<td>Other income</td>
<td>139</td>
<td>52</td>
<td>454</td>
<td>1022</td>
<td>760</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>2117</td>
<td>7262</td>
<td>18,252</td>
<td>29,481</td>
<td>36,728</td>
<td>57,259</td>
</tr>
<tr>
<td>C. Consumption (food and durable goods)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Two meals a day (%)</td>
<td>88.18</td>
<td>91.01</td>
<td>96.92</td>
<td>97.66</td>
<td>98.00</td>
<td>92.59</td>
</tr>
<tr>
<td>Own house (%)</td>
<td>81.41</td>
<td>92.16</td>
<td>94.62</td>
<td>97.27</td>
<td>98.00</td>
<td>100.00</td>
</tr>
<tr>
<td>At least one cow (%)</td>
<td>55.66</td>
<td>65.85</td>
<td>80.00</td>
<td>87.50</td>
<td>90.67</td>
<td>92.59</td>
</tr>
<tr>
<td>TV (%)</td>
<td>26.65</td>
<td>25.16</td>
<td>49.23</td>
<td>53.91</td>
<td>72.00</td>
<td>85.19</td>
</tr>
<tr>
<td>Radio (%)</td>
<td>35.37</td>
<td>38.40</td>
<td>45.38</td>
<td>45.70</td>
<td>54.00</td>
<td>70.37</td>
</tr>
<tr>
<td>Refrigerator (%)</td>
<td>2.85</td>
<td>1.63</td>
<td>6.15</td>
<td>8.98</td>
<td>15.33</td>
<td>22.22</td>
</tr>
</tbody>
</table>
Distribution of landownership therefore very important determinant of rural inequality and poverty

It also affects agricultural productivity

The productivity effect is less obvious: is a more equal land distribution likely to generate higher or lower productivity?

To answer this, need to understand different modes of agricultural cultivation
Modes of Agricultural Cultivation

- **OC**: Owner Cultivated Farms, relying mainly on household labor
- **T**: Tenant Cultivated Farms, usually relying on household labor; types of rental contracts:
  - Sharecropping
  - Fixed Rent
- **HL**: Owner Managed Farms, cultivated by hired labor (e.g., plantations, haciendas)
- **CC**: communally owned and communally cultivated (communes, kibbutzies)
- **COC**: communally owned, but cultivated by individual households (tribal lands)
Table: Table 12.2: % Distribution of Farmland Across Different Modes, 1970

<table>
<thead>
<tr>
<th></th>
<th>Asia</th>
<th>Africa</th>
<th>L America</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Owner Cultivation (OC, HL)</strong></td>
<td>84.0</td>
<td>9.2</td>
<td>80.4</td>
</tr>
<tr>
<td><strong>Tenancy (T full or in part)</strong></td>
<td>16.0</td>
<td>32.1</td>
<td>11.8</td>
</tr>
<tr>
<td><strong>Others (CC, COC)</strong></td>
<td>0.0</td>
<td>58.7</td>
<td>7.8</td>
</tr>
<tr>
<td><strong>Avg Farm Size (ha.)</strong></td>
<td>2.3</td>
<td>0.5</td>
<td>46.5</td>
</tr>
</tbody>
</table>
Mode of Cultivation and Farm Size/Technology

- **OC, T**: small farms (owing to use of family labor), low tech, labor intensive (Asia)
- **HL**: large farms, mechanized or labor intensive (Latin America, parts of Asia)
- **CC**: typically large, mechanized (Soviet, Chinese communism)
- **COC**: typically small, labor intensive (African tribal society, post-1978 China)
Large Land Redistribution Programs in 20th Century

- **Private Land Redistribution**: Mexico (1930s), Korea, Japan, Taiwan (1930-50), parts of India (1970-2000), Brazil (1993-2002): HL to OC

- **Communal Land Redistribution**: China (1978-1984), Vietnam (1988-93): CC to COC/OC
Other Types of Land Reforms

- Land Purchase Grants/Loans: LRAD in S Africa (2000–) to landless and tenants
- Formal Legalization of Informal Rights (Titling, Registration, Mortgage and Sales): Argentina, Peru, parts of Africa
Productivity Comparisons Across Modes of Cultivation

- Focus on comparisons across OC, T, HL and CC
- Three Factors of Production: land, labor, capital equipment
- Large farms (HL, CC) adopt more capital-intensive (mechanized) technology which entails fixed costs
- Small farms (OC, T) adopt labor intensive production methods, as mechanization is not cost-effective, and owners are not wealthy or high-skilled
Productivity Comparisons Across Modes of Cultivation, contd.

- Large vis-a-vis small farms: capital advantage, labor efficiency disadvantage
- Small farms rely on household labor for key cultivation tasks: planting, irrigation, pest control, land management etc
- How does labor efficiency vary across different kinds of farms? Related to incentives/motivation of workers
Labor Motivation Comparisons Across Modes of Cultivation, contd.

- OC farmers or fixed rent tenants: highly motivated (appropriate 100% of marginal returns)
- Sharecropping tenants: less motivated (appropriate a fraction of marginal returns)
- Large HL/CC farms: even less motivated (appropriate 0 or tiny fraction of marginal returns)
- HL/CC farms require supervisors to check on work effort of production workers, but supervisors themselves have to be motivated
Worker Incentives: Theory

- Fix land size and capital: farm revenue $R(e)$ increasing in worker effort $e$, subject to diminishing returns
- Effort disutility of worker $C(e)$, increasing in $e$, at an increasing rate
- Socially optimal effort $e^*$: where marginal return to effort $MR(e^*)$ equals marginal disutility $MC(e^*)$
Worker Incentives: Theory, contd.

- OC farm: worker is owner, $e$ chosen to maximize
  
  $$R(e) - C(e) \rightarrow e = e^*$$

- Tenant with fixed rent $\bar{r}$: maximize
  
  $$R(e) - \bar{r} - C(e) \rightarrow e = e^*$$

- Sharecropping tenant with share $s$ of farm return: maximize
  
  $$sR(e) - C(e) \rightarrow e < e^*$$
Worker Incentives in Large HL/CC Farms

- Large HL/CC farm: earn fixed wage, or infinitesimal share $s$ of farm revenue → $e$ approximately zero, unless closely supervised.
- Supervisors also have to be motivated to supervise, e.g., with bonuses that depend on revenues generated of farmers that they supervise.
- Supervision costs $S(e)$, increasing in $e$; min. worker wage has to be $w(e) = C(e)$.
- Owner-manager selects $e$ to maximize $R(e) - C(e) - S(e) → e < e^*$.
Analogous Urban Contexts

- Transport: driver owned taxis vs. drivers leasing taxis vs. mass transit
- Restaurants: family-owned restaurants vs. family-renting restaurants vs. franchises vs. supermarket food outlets
- Tailoring: family-operated tailor business vs. mass produced garments
- Medical/Legal services: doctor/lawyer-owned practice vs. hospital/corporate law firms
Economies of Scale versus Small is Beautiful

- Large farms/firms have capital/scale/technology advantage
- Small farms/firms that are OC/franchises have labor efficiency advantage
- Which is more important?
Economies of Scale versus Small is Beautiful

- Answer depends on the product: wheat/corn/cattle-raising vs. rice/vegetables; garments vs. food preparation
- When labor efficiency/attention/service quality is more important (rice, food prep.), small farms/firms outperform large ones
- Large farms superior when mechanization is more important
Implications for Productivity Effects of Land Reforms

- Land redistribution from large landowners (HL) or communes (CC) to landless: replace HL/CC with small OC farms
- In corn/wheat/cattle contexts, likely to lower agricultural productivity (loss of scale economies, skill etc.): Zimbabwe, big concern in post-apartheid S Africa
- In rice/vegetable growing areas, likely to raise agricultural productivity
Empirical Evidence on Farm Size and Productivity

- Tables 12.6, 12.7 in text: ratio of yields (income/output per acre) in small to large farms varies between 2:1 in India, to 2.7:1 in Pakistan, 1.5:1 in Malaysia, and 5.6:1 in Brazil.

- Experience of many large land reforms: significant increases in agricultural output followed (Mexico (early 1940s), Japan, Korea (1950-60), China (1978-84)).

- Combined with large reductions in poverty and inequality.
Summary

- Important land redistribution programs in Mexico, East Asia, China
- Effects on agricultural productivity depend on how they affect the cultivation mode (capital/scale/skill vs. labor efficiency)
- Evidence shows small farms are more productive, hence such redistributions also raise agricultural output and growth in general
- Next session: critical reassessments of the empirical evidence, political/administrative problems of implementation, some recent ‘softer’ kinds of land reforms (tenancy regulations, subsidized land grants)