Land Acquisition and Compensation in Singur: What Really Happened?

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WB Background: From Land Reform to Land Acquisition: Why?

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- Combined with considerable fall in land per household and land per capita
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- Decline in proportion of household heads declaring agricultural cultivation as their primary occupation (less than 50% by 2003)
- Corresponding rise in landlessness (almost 50% in 2003)
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- And in education and aspirations of the young, who seek non-agricultural occupations
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The Fiasco

- Local community in Singur was not consulted at the outset (learnt of the acquisition from newspaper reports)
- Owners of one-third of the land protested, backed by the Trinamul party which controlled Singur
- Protests escalated, confrontation between protesters and police...
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- Tata stopped building its factory in 2008, withdrew to Gujarat
- In May 2011, Left Front lost its majority in the state legislature to Trinamul for the first time in 35 years
Prime Objective: Understanding the Singur Fiasco

1. Use a household survey to ascertain facts concerning land compensation offered to farmers whose land was acquired.
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2. We compare actual compensations offered with market values of acquired plots, and evaluate the extent to which the offered amounts were inadequate.
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4. Implications for future land acquisition policy.
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Survey Details

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- Compared them with households in 6 neighboring non-affected villages located on both sides of the Durgapur Expressway.
GPS Village Map
Total sample size: 1100 households, approximately one-sixth of the relevant population

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- Divided equally (one third) between affected households in acquired villages, unaffected households in acquired villages, and households in unacquired villages
- Demographics, ownership of land and other assets, education etc very similar across three groups
- Compare households reports of market value of land, past market transactions and compensations offered, with government documents concerning compensations offered and basis thereof
### Distribution of Households in Acquired Villages (Listing Data)

<table>
<thead>
<tr>
<th>Category</th>
<th>All Households</th>
<th>Affected</th>
<th>Unaffected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owner Cultivaltors</td>
<td>16.5</td>
<td>8.8</td>
<td>7.7</td>
</tr>
<tr>
<td>Tenant Households</td>
<td>4.0</td>
<td>2.5</td>
<td>1.5</td>
</tr>
<tr>
<td>Agricultural Labor</td>
<td>42.7</td>
<td>19.9</td>
<td>22.8</td>
</tr>
<tr>
<td>Non-agricultural Labor</td>
<td>36.8</td>
<td>23.3</td>
<td>13.5</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>55</td>
<td>45</td>
</tr>
</tbody>
</table>
Standards of Adequate Compensation

Legal standard (based on the 1894 Land Acquisition Act): according to market value

From an economic standpoint, this is inadequate for a number of reasons:

- Market values understate personal valuation of land for many reasons: role of land as a financial asset; those who have not sold their land have personal values that exceed the market price.
- Theoretical arguments imply compensations should be at least as large as personal valuations, on efficiency grounds alone (Ghatak and Mookherjee 2011).
- Supplementary arguments on grounds of fairness and political sustainability.
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1. Compensation Rates Announced: Did They Meet the Legal Standard?

- Government compensation: the stated policy
- Land rates for different kinds of land
- Additional solatium of 30%, plus allowance for irrigation, location of plots to be entertained

We find these were close to market values as reported by households, and above market values predicted on basis of past transactions.
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Table 1: Land Market Valuation Rates announced by the Government

<table>
<thead>
<tr>
<th>Type of Land</th>
<th>Land Rate (per acre)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sali</td>
<td>Rs. 6,01,718</td>
</tr>
<tr>
<td>Sona</td>
<td>Rs. 8,80,029</td>
</tr>
<tr>
<td>Homestead Land</td>
<td>Rs. 18,04,431</td>
</tr>
</tbody>
</table>
### Table 2: Comparing offered rates with predicted market values and reported market values

<table>
<thead>
<tr>
<th>Type of Land</th>
<th>Average compensation offered in survey</th>
<th>Average Reported Mkt. Price at the time of acquisition</th>
<th>Predicted market values for 2006 based on actual transactions since 1995</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sali</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>Rs. 8,98,942</td>
<td>Rs. 8,03,957</td>
<td>Rs. 3,40,884</td>
</tr>
<tr>
<td>High</td>
<td>Rs. 8,76,124</td>
<td>Rs. 8,43,729</td>
<td>Rs. 4,57,785</td>
</tr>
<tr>
<td>Sona</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>Rs. 8,34,041</td>
<td>Rs. 8,77,883</td>
<td>Rs. 6,24,955</td>
</tr>
<tr>
<td>High</td>
<td>Rs. 8,80,676</td>
<td>Rs. 8,52,385</td>
<td>Rs. 5,44,421</td>
</tr>
</tbody>
</table>
However, we find a large discrepancy between government records of offered compensation and household reports for particular kinds of land.
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According to household reports of compensations offered, average amounts actually offered for *sona* land did not include solatium, while for *sali* land they did.
## Table 4: Comparison of compensation and reported market values by land type

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>(1) Reported market Value</th>
<th>(2) Compensation Offered</th>
<th>(3) Reported market Value</th>
<th>(4) Compensation Offered</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
</tr>
<tr>
<td>Sona Low</td>
<td>-62,782</td>
<td>-58,301**</td>
<td>95,619*</td>
<td>-73,146***</td>
</tr>
<tr>
<td></td>
<td>(62,691)</td>
<td>(24,490)</td>
<td>(49,910)</td>
<td>(24,579)</td>
</tr>
<tr>
<td>Sali high</td>
<td>-371,210***</td>
<td>-12,042</td>
<td>-134,894***</td>
<td>-26,556**</td>
</tr>
<tr>
<td></td>
<td>(86,318)</td>
<td>(9,884)</td>
<td>(41,823)</td>
<td>(11,990)</td>
</tr>
<tr>
<td>Sali Low</td>
<td>-267,898***</td>
<td>57,619</td>
<td>-154,787**</td>
<td>56,108**</td>
</tr>
<tr>
<td></td>
<td>(66,548)</td>
<td>(35,868)</td>
<td>(65,595)</td>
<td>(28,017)</td>
</tr>
<tr>
<td>Constant</td>
<td>2.233e+06***</td>
<td>887,976***</td>
<td>777,087***</td>
<td>794,761***</td>
</tr>
<tr>
<td></td>
<td>(322,646)</td>
<td>(15,493)</td>
<td>(204,530)</td>
<td>(112,090)</td>
</tr>
</tbody>
</table>

Observations       | 611                       | 475                       | 589                       | 465                       |
R-squared          | 0.236                     | 0.036                     | 0.236                     | 0.125                     |
Village FE         | YES                       | YES                       | YES                       | YES                       |
Other Plot characteristics | NO         | NO                       | YES                       | YES                       |
HH Characteristics | NO                        | NO                       | YES                       | YES                       |

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, *
Table 2: Household reports of compensations offered were lower than announced rates plus solatium for *sona* plots by about 30%, and higher than these by about 10% for *sali* plots.
1. Compensations Offered

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How did this happen?

Did actual compensations offered deviate from the announced policy?
1. Compensations Offered, contd.

- Examining the government documents, we find (Table 4 in the paper):
  - On one quarter of the plots, no compensation was offered, possibly owing to inability to assess market value.
  - On the remaining three quarters, offered compensations matched the announced rates for about 97% of the plots.
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  - On the remaining three quarters, offered compensations matched the announced rates for about 97% of the plots.
  - Since reported compensations by households were non-zero this implies that the discrepancy is not explained by deviation of actual offers from announced rates.
1. Explanation for Discrepancy

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- For plots assessed a positive market value with actual compensation offers=announced rates, government records show only 5% of plots are classified as *sona*.
- Whereas households in our sample report 32% of all acquired plots were *sona*.
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- Whereas households in our sample report 32% of all acquired plots were *sona*.
- Calculations (Section 3.4 of the paper) show this can account for the discrepancy.
2. Under-Compensation and Decision of Landowners Whether to Accept

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- Owners of *sona* plots and irrigated plots more likely to reject
- One standard deviation increase in under-compensation led to 12% lower probability of acceptance
### Table 6: Predicting acceptance of compensation offers

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>(1) Dependant variable: Whether compensation offer accepted</th>
<th>(2) Probit</th>
<th>(3) Probit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deviation of Compen offered from HH's reported Mkt Value</td>
<td>-0.121***</td>
<td>-0.0945***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.0210)</td>
<td>(0.0314)</td>
<td></td>
</tr>
<tr>
<td>Sona Low</td>
<td>-0.0478</td>
<td>0.158**</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.0605)</td>
<td>(0.0742)</td>
<td></td>
</tr>
<tr>
<td>Sali high</td>
<td>0.0804*</td>
<td>0.148**</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.0440)</td>
<td>(0.0742)</td>
<td></td>
</tr>
<tr>
<td>Sali Low</td>
<td>0.319***</td>
<td>0.297***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.0447)</td>
<td>(0.0687)</td>
<td></td>
</tr>
<tr>
<td>Whether Land was irrigated</td>
<td></td>
<td>-0.220***</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.0594)</td>
<td></td>
</tr>
<tr>
<td>Distance</td>
<td></td>
<td>-0.209**</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.0973)</td>
<td></td>
</tr>
<tr>
<td>Observations</td>
<td>687</td>
<td>937</td>
<td>672</td>
</tr>
<tr>
<td>Village FE</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Other controls</td>
<td>NO</td>
<td>NO</td>
<td>YES</td>
</tr>
<tr>
<td>Robust standard errors in parentheses</td>
<td>*** p&lt;0.01, ** p&lt;0.05, * p&lt;0.1</td>
<td></td>
<td></td>
</tr>
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2. Additional Determinants of Decision to Reject Compensation Offers

- Two additional reasons for rejection of offered compensations:
  - Inability of government rates to incorporate heterogeneity of plot characteristics
  - Land values also depend on cropping patterns, whether the owner has complete selling rights etc.
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  - Table 9 in paper: Dispersion of land values for similar plots across villages
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<td></td>
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<td>(65,595)</td>
</tr>
<tr>
<td>Irrigation</td>
<td>-70,482</td>
<td>-70,482</td>
</tr>
<tr>
<td></td>
<td>(59,200)</td>
<td>(59,200)</td>
</tr>
<tr>
<td>Distance from highway</td>
<td>107,366*</td>
<td>-70,482</td>
</tr>
<tr>
<td></td>
<td>(57,140)</td>
<td>(59,200)</td>
</tr>
<tr>
<td>Paddy (Aman) Yield per Acre</td>
<td>238.4***</td>
<td>238.4***</td>
</tr>
<tr>
<td></td>
<td>(81.90)</td>
<td>(81.90)</td>
</tr>
<tr>
<td>If Rice grown for more than one season</td>
<td>622,770***</td>
<td>622,770***</td>
</tr>
<tr>
<td></td>
<td>(141,606)</td>
<td>(141,606)</td>
</tr>
<tr>
<td>Selling Rights Lost Land</td>
<td>74,461**</td>
<td>74,461**</td>
</tr>
<tr>
<td></td>
<td>(34,670)</td>
<td>(34,670)</td>
</tr>
<tr>
<td>Total Land Owned by HH</td>
<td>-52,993***</td>
<td>-52,993***</td>
</tr>
<tr>
<td></td>
<td>(10,444)</td>
<td>(10,444)</td>
</tr>
<tr>
<td>Education Level of HOH</td>
<td>-1,048</td>
<td>-1,048</td>
</tr>
<tr>
<td></td>
<td>(3,097)</td>
<td>(3,097)</td>
</tr>
<tr>
<td>Whether HOH owns a business</td>
<td>82,480</td>
<td>82,480</td>
</tr>
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- Heterogeneity of owner’s skill-specificity, valuation of financial security, location

Even if the government gets the land value right, there will be a fraction of owners whose reservation values will exceed the market value. Evidence (Table 11a, b of the paper) of irrigation status and location as determinants of likelihood of rejection. Those with stronger financial motives (landlords, those who bought rather than inherited) were more likely to reject the offers. Those more dependent on agriculture for income were more likely to reject.

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- We find significant impact on incomes of owners of plots that were acquired: 33% reduction compared with those whose plots were not acquired.

Impact on affected tenants: about half as much (17% reduction)

No discernible impact on earnings of workers (averaging across agricultural and non-agricultural workers)

However, gap between earnings of agricultural and non-agricultural workers grew 24%.
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4. Household Preferences concerning Form of Compensation

- Many concerns voiced by villagers concerning payment of compensation in the form of cash

Concerns ranged from vulnerability to inflation, and to self-control (temptation) problems. Considerable evidence of temptation preferences (70% of the households). One third of households had access to opportunities to purchase financial annuities, of which 96% said they would prefer these to cash compensation. Yet, most households did not purchase such annuities. Diverse preferences for alternative forms of non-cash compensation: pension versus plot of land versus shop on factory premises.
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- Yet, most households did not purchase such annuities
- Diverse preferences for alternative forms of non-cash compensation: pension versus plot of land versus shop on factory premises
Implications for Future Land Acquisition Policy

- Strong economic arguments for over-compensation of farmers and tenants on grounds of efficiency, equity and political sustainability of industrialization programme
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- What makes compensation tricky is the heterogeneity of plots and of personal valuations placed by different owners on land as an asset
Implications for Future Land Acquisition Policy, contd.

- Clear that appropriate compensations should exceed the market value of the land
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Two problems with this:

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- How much higher should the compensation be?
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LARR Bill in Parliament sets compensation at an arbitrary multiple (quadruple) of market value in rural areas
This may be too high, and retard industrialization (as argued by Sanjoy Chakravorty)

Economists' solution (extension of Ghatak and Ghosh): elicit households willingness to give up land by conducting auctions

We would extend their proposal to include multi-stage auctions: at the community level and then within communities at the household level.
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Multi-Stage Auction

- Stage 1: industrialist seeks land of x acres with specified characteristics, states maximum price it is willing to pay

- Stage 2: different panchayats are asked to conduct a (conditional) procurement auction within their jurisdictions where they seek to procure x acres and find out what landowners are willing to accept for their land, up to an aggregate of x acres of contiguous land

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- Additional consideration needs to be devoted to spillover effect of acquisition on tenants and agricultural workers
- And offer a choice to owners of different modes of compensation: land elsewhere, pensions, shares in the industry, shop on factory premises, training and factory employment opportunities