INDIA 1960-2010: STRUCTURAL CHANGE, THE RURAL NONFARM SECTOR, AND THE PROSPECTS FOR AGRICULTURE

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Outline

1. Rapid growth, but slow structural transformation
2. Poverty, labor markets, feminization of agriculture
3. The rural non-farm sector and its drivers
4. The vision for agriculture, policies and programs
The stylized Structural Transformation

- At the outset of Structural Transformation (ST), labor and economic output are both concentrated in Agriculture
- Because labor productivity in agriculture is lower than in industry
  - the share of labor in agriculture exceeds the share in nonagriculture
- During ST, the gaps in labor productivity and between the agricultural shares of labor and output widen
- A turning point is reached when the productivities and the shares start converging
  - recently estimated by Peter Timmer at between 1600 and 9000 dollars per capita incomes ($ of 2000)
- Convergence is driven by rapid absorption of labor in the nonagricultural sector and by agricultural productivity growth
Structural transformation: Korea and India

Diagram showing the relationship between GDP and employment share.
Agricultural share is declining

Share of sectors in GDP (%)
Difference with China

Shares of Sectors in GDP (%)

- Agriculture
- Industry
- Manufacturing
- Services


Percentage: 0, 10, 20, 30, 40, 50, 60
Rural population and labor force are still growing

- Overall population growth around 1 % pa, but labor force growth has accelerated to 2.8 percent
- Rural population to peak at 900 million in about 2022
- Rural labor force may continue to grow until 2045 (Hazell et al. 2011)
- An enormous challenge of employment growth
# Productivity Growth in Agriculture

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<tbody>
<tr>
<td>Agric. output per ha of cropland (US$ of 2000)</td>
<td>1.73</td>
<td>1.91</td>
<td>3.81</td>
<td>2.42</td>
<td>2.62</td>
<td>3.07</td>
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<tr>
<td>Animal output/ head of cattle equivalent (US$ of 2000)</td>
<td>0.65</td>
<td>2.85</td>
<td>3.46</td>
<td>3.11</td>
<td>3.32</td>
<td>3.41</td>
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<tr>
<td>TFP growth*</td>
<td>0.0</td>
<td>0.0</td>
<td>2.0</td>
<td>1.5</td>
<td>1.9*</td>
<td></td>
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<tr>
<td>TFP growth China*</td>
<td>0.0</td>
<td>0.0</td>
<td>2.8</td>
<td>4.2</td>
<td>2.7*</td>
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* till 2007
Annual TFP Growth: The slump is over

Source: Keith Fuglie, Personal Communication
Structural Transformation in India

Ag. output per worker and Non. Ag. output per worker

Share of Ag. in labour force and GDP

Year

Percentage(%)
Structural Transformation in China

Graphs showing the change in Agri share in labor and Agri share in GDP from 1978 to 2008, alongside the current Yuan and productivity changes in Ag. Labr. and Non-Ag Labr. Productivity.
Structural Transformation has been very slow, a turning point may be far away

- The rural and agricultural labor forces are still growing
- Rural-urban migration is very slow
  - Urban population growth primarily from natural growth and reclassification of rural areas
- After a sharp slowdown, agricultural productivity growth has accelerated only very recently
- Increasingly divergence in labor productivity between agriculture and non-agriculture
The puzzle: Urban and rural poverty have not diverged.

Notes: Poverty rates based on a new and consistent time series of poverty lines which are based in the original Planning Commission poverty lines but updated over time using different price indexes. Source: Datt and Ravallion (2009)
Little urban/rural divergence in per capita consumption

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<tr>
<td>Gini Coefficient of distribution of consumption</td>
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<tr>
<td>Rural</td>
<td>0.30</td>
<td>0.30</td>
<td>0.28</td>
<td>0.30</td>
<td>0.28</td>
</tr>
<tr>
<td>Urban</td>
<td>0.30</td>
<td>0.35</td>
<td>0.34</td>
<td>0.37</td>
<td>0.37</td>
</tr>
</tbody>
</table>

| Urban-rural ratio of mean consumption | 1.54 | 1.44 | 1.64 | 1.72 | 1.69 |

Source: Ahluwalia, 2011, table 6,

*But urban inequality has deepened in 1990s and 2000s*
Why is there not more divergence

- Urban employment has been skills and capital intensive, and unemployment has been rising
  - Too few employment opportunities for the lower skilled
  - Rising inequality and depth of urban poverty
  - Relatively slow rural-urban migration
- Rural poverty remains concentrated among rural labor, of lower skills who have little access to migration or rural non-farm jobs
Changing drivers of decline in rural poverty (Ravallion and Datt)

- Up to 1991, declines in rural, national, and even urban poverty were driven by rural growth
  - Urban growth only reduced urban poverty but not rural or national poverty
- Since then, rural growth continues to reduce rural poverty and national poverty
- But urban growth has become the most important driver of urban, national, and even rural poverty reduction
- Significant urban-rural spillovers have emerged
Employment trends

- Urban and rural males have high and similar labor participation (around 55%)
- Rural female labor participation is around 30%, but only around 15% for urban females
- Employment growth in Indian agriculture slowed down between the mid-1990s and 2009
- Both urban and rural manufacturing employment shares declined slightly
- Construction is the only sector with sharp growth in urban and rural employment shares
Agricultural labor force is feminizing

- In 1977-78, 88.1% of female workers were engaged in primary sectors (mostly agriculture), compared to 80.6% of males.
- By 2009-10 for males engagement in the primary sector had gone down to 62.8%, or by 25%, while for females they had gone down to 79.3%, or only about 10%
Most employment is informal

- From 1999-2000 to 2005-06 the proportions of workers in the formal sector declined from 8.8 to 7.5 percent
- Within the formal sector, the proportion of employees with informal contracts rose from 37.8 percent to 46.7 percent
- Employment in the rural non-farm sector has followed the trend to informalization
- For most rural migrants the prospects for good urban employment are very bleak, especially for females
- So what does the increasing rural labor force do?
The rural non-farm sector: the major source of rural income and employment growth

<table>
<thead>
<tr>
<th>Year</th>
<th>Non farm employment</th>
<th>GDPN</th>
<th>Nonfarm GDP</th>
<th>Agriculture GDP</th>
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</thead>
<tbody>
<tr>
<td>1983-2004</td>
<td>3.3</td>
<td>5.8</td>
<td>7.1</td>
<td>2.6</td>
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<tr>
<td>1983-1993</td>
<td>3.5</td>
<td>5.2</td>
<td>6.4</td>
<td>2.9</td>
</tr>
<tr>
<td>1993-2004</td>
<td>4.8</td>
<td>6.0</td>
<td>7.2</td>
<td>1.8</td>
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</tbody>
</table>

Source: Himanshu et al. 2010 and Eswaran et al. 2009

Notes: GDP at factor cost at 1993-94 prices. Agriculture GDP originating in agriculture, forestry, and fishing. Nonfarm GDP defined as a residual.
Characteristics of rural non-farm employment

- 6 out of 10 new jobs in rural areas are now in the non-farm sector
  - They offer significantly higher wages than farm labor
  - Most jobs are casual jobs
  - These jobs go mostly to young men with some education, and women have a hard time getting them
  - Trade and transport, construction, and services are growing especially fast
  - But manufacturing still about 20 percent of non-farm jobs

- The last two trends are partly urban spillovers
In first half of last decade, rural non-farm self-employment increased by 8 million

- 2.2 million was accounted for by retail trade,
- 1.5 million by manufacture of wearing apparel,
- 1 million by land transport.

- Other large increases in the form of STD/PCO booths, maintenance and repair of motor vehicles, and hotels and restaurants
  - Some of these are technology spillovers
Results from the REDS survey of NCAER

- A national rural panel data set of over 5000 households
- Between 1999 and 2007,
  - Average farm sizes declined from 5.1 to 4.6 acres
  - Average household size from 6.1 to 5.2 members
- Per capita income grew at 5.6 percent
  - Despite a growth in value of agricultural production per acre of only 3.3%
- Thus non-farm growth drove rural income growth
Rural non-farm self employment has become especially dynamic

Results from National REDS survey 1999-2007 of NCAER

- Out of 5760 households, 19.6% have non-farm self employment, up from only 7.3%
- The share of households with non-farm self employment who also have farm income has gone from 58% to 73%
- Their non-farm profits have increased by 70%
  - exceeding farm profits of each of the farming households
- Nonfarm self employment income now 19.6% of total village income, plus 7.8% from non-farm wages
- *Rural non-farm self employment is not distress employment, but a profitable diversification strategy*
Nevertheless rural wages growth has accelerated

- 2004-05 to 2009-10
  - Female casual workers: 6.2% pa
  - Male casual workers 4.5% pa

- Possible explanations
  - Acceleration of agricultural growth and productivity
  - Increase in agricultural TOT
  - Rural non-farm sector growth
  - Greater rural public investments and subsidies
  - Expansion of rural welfare programs
  - Rural employment guarantee program (MGNREGA)
Growing incomes, changing composition

Mean Income Shares (1999)
Per capita income = Rs. 8,498

Mean Income Shares (2007)
Per capita income = Rs. 12,370
India’s structural transformation is stunted

- Much of the growing labor force is stuck in rural areas
- The largest growth in nonagricultural employment is in the rural non-farm sector rather than in urban areas
- In all sectors there are few high quality jobs with security of employment and benefits
- While the urban-agricultural productivity differential has been rising, rural urban income differences grew little on account of non-farm growth
Comparison to China

- Over the past two decades 220 million workers have left agriculture, many to urban industry.
- There are few young people in agriculture.
- 20 percent of land rights are leased to others.
- Therefore farm sizes are growing.
- Rural non-farm sector is also growing fast.
- Wages have only started to rise recently too.
Vision for Indian Agriculture

- Indian structural transformation will continue to be stunted
- There are few prospects for rapid growth of labor-intensive manufacturing
- Rapid growth of rural labor will continue
- Farm sizes will continue to decline, along with household sizes
- Women will continue to face poor urban and nonfarm employment prospects
- Feminization of agriculture will continue
Optimistic scenario for rural incomes

1. Faster agricultural growth via
   - Higher prices
   - Faster productivity growth
   - Irrigation growth based on water use efficiency
2. Higher farm and nonfarm wages
3. Continued diversification to high valued commodities
4. And into the non-farm employment and self employment

*Part time farming will be dominant farm model*
Other possible positive trends

- Much wider use of modern technology and mechanization
- Capturing economies of scale
  - Via machine rental
  - Via water markets
  - Via contract farming and cooperation in marketing and input supply
- Women farmers may gain some autonomy
Major reforms in policies and programs are required

- Productivity growth needs to be sustained at very high levels
  - More responsive, accountable and better financed research system
  - More GMOs
  - Larger, better financed, more diversified and more accountable agricultural extension system
    - With growing mobile applications
  - Greater role for private sector in both research and extension
Slowdown in irrigation growth needs to be reversed

- From construction focused canal irrigation to service-oriented system of water distribution
  - Often in pipes rather than secondary and tertiary canals
  - Often by the private sector
  - In combination with sprinkler and drip irrigation
- Reform and expansion of electricity supply for irrigation (e.g. Gujarat)
- Water harvesting and groundwater recharge
- Improvements in groundwater management
Agricultural subsidies: inefficient, poorly targeted and environmentally harmful

- From subsidies linked to inputs and outputs to direct payments
  - Especially important if urban-rural income parity deteriorates
- While this is beginning to happen in fertilizers
  - It should be extended to electricity and food subsidies
The marketing and value chain

- This sector is modernizing very rapidly
- Remaining constraints in marketing systems need to be eliminated
- Competition in the sector needs to be fostered to contain margins between producer and consumer prices
- Efficient farmer organizations and contract farming need to develop much faster
Agricultural and rural development administration is too centralized

- Only a few states have implemented rural decentralization properly (Kerala, Karnataka)
- They all rely far too much on central finance for agricultural and rural development finance
  - Even though these responsibilities are assigned to them
- The resulting implementation architecture is top down and fragmented into multiple, overlapping programs
- Accountability to population and within the systems is minimal, corruption and inefficiency are rampant
- It is hard to see how the huge agricultural and rural development agenda can be implemented this way
Structural Transformation

Sharply constrained by the weaknesses of urban growth and employment

A positive outcome for rural areas depends on continued urban spillovers

And on better ARD policies, institutions, and programs