# Poverty, Undernutrition and Vulnerability in Rural India: Role of Rural Public Works and Food for Work Programmes

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# Economic Growth, Public Policy and Poverty Reduction

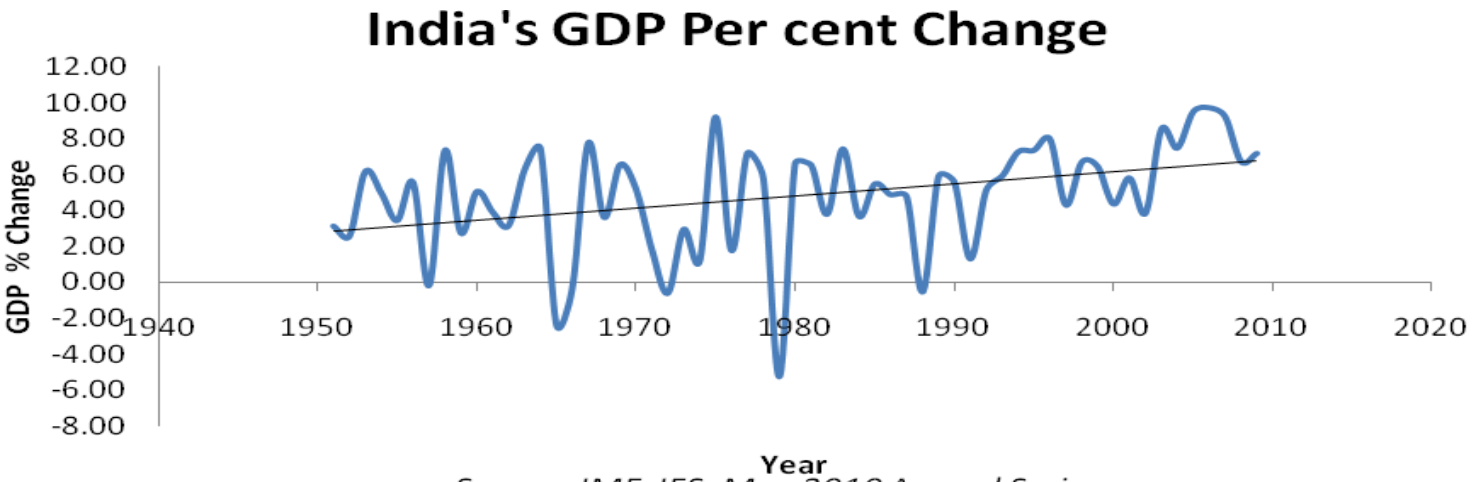
- Trickle-down effect of economic growth to poverty reduction has been verified
- Unbalanced growth – regional disparities
- Direct intervention through 'grass-root' public policy – is imperative
- Is 'grass-root' public policy a panacea?

# Objective and Context

- Objective
  - Analyze the effect of access to Rural Public Works (RPW) or Food for Work (FFW) on consumption based poverty, vulnerability and undernutrition in India

- Context
  - India's economic growth and recovery to global financial crisis has been iconic, but ……..

# Economic Growth and Poverty in India




*Source: IMF, IFS, May 2010 Annual Series*

**Poverty Headcount Ratio**

| | *1994* | *2000* | *2005* |
|---|---|---|---|
| ***National*** | 36.0 | 28.6 | - |
| ***International*** | 49.4 | - | 41.64 |

***Source: WDI, 2010***

# Rural Public Work and Food for Work Programmes

- Rural Public Work
  - Provide employment
  - Build infrastructure
  - Counter contrasting demand during recession
- Food for Work
  - Provision of cash and **food grains** to identified 150 backward districts
  - Supplement wage employment and create productive assets
  - Institute a wage employment guarantee scheme

# Policy outcomes and participation

- Policy Outcomes
  - Non-poor capture (Gaiha et al., 2001 and Jha et al., 2009)
  - Gender capture (Dejaradin, 1996)

- Self exclusion
  - Poverty traps
    - Effect of undernutrition (Dasgupta 1997 & Jha et al., 2009)

# Data and Estimation

- 50th (93-94) and 61st (04-05) rounds of India National Sample Survey
  - "Household consumer and expenditure" and "employment and unemployment" data
  - FFW is used as a proxy for RPW in the 61st round as RPW is not present
- Computation of nutritional deficiency
  - Benchmark nutritional equivalents of actual consumption with recommended daily allowance
  - Compute undernutrition in terms of calories and protein

# Econometric Techniques

- Estimate household vulnerability
  - Vulnerability as expected poverty
    - *Ex ante* measure
- Estimate Wage equation
- Treatment effect modelling

# Results- Vulnerability

- Log of Mean Per Capita Expenditure
  - In 1993, number of adult female members is inversely related to mean per capita expenditure (MPCE)
  - In both 1993 and 2004 dependency burden showed a significant and negative effect on MPCE
  - Higher levels of education are positively and significantly related with MPCE in both 1993 and 2004
  - Belonging to ST and SC shows a negative and significant coefficient for both 1993 and 2004

# Results- Wage Equation

- Identify determinants for female and male wages
  - ST or SC are negative and significant in determining wages
  - Non-agricultural households and self employed have higher wages
  - Age depicts the expected non-linearity
  - Land ownership shows negative relationship with female wage for both years but a positive sign with male wage for 2004?

# Results – Treatment Effects

- First Stage Participation in RPW
  - Number of adult male members is positive and significant in both rounds
  - Education dummies are mostly negative and significant
  - Households owning a piece of land are likely to participate rather than landless households in both rounds
  - Agric. and non-agricultural labour households tend to participate in RPW for both rounds
  - Households belonging to SCs and STs are likely to participate
  - Female household headedness is negative and significant determinant of RPW participation for 2004

# Results – Treatment Effects (second stage)

- Well-being indicators
  - Poverty, Vulnerability and Under-nutrition
- Heckman-like treatment effect
  - Degree of sample selection is significant in all cases but vulnerability for NSS50
- Household composition affects all three well-being indicators for both rounds

# Results – Treatment Effects (second stage)

- Higher levels of education and larger land size relates inversely with consumption poverty, vulnerability and under-nourished in both round
- Belonging to SCs and STs relates positively with all three indicators in both rounds
- Agric. and non-agricultural labour households tend to show positive and significant signs with all three indicators in both rounds

# Results - Participation in RPW and Well-being

- Observed variation between the two rounds and across the three measures of well-being
  - In 1993, RPW decreases consumption based poverty and protein based poverty but not calorie-based poverty.
  - In 2004, RPW is observed to have significant impact on reducing poverty and vulnerability
  - Significant vulnerability-reducing effects are observed only when vulnerability is calculated at 80% of the national poverty line

# Average Treatment Effect and Sample Selection

- Participating household poverty is on the average 1.6% lower than non-participating households after controlling for sample selection bias.
- ATT for vulnerability based on 100% national poverty line shows a 0.4% in 1993 and -9.6% in 2004.

# State-wise Effects

- Wide heterogeneity leading to contrasting results with national level evidence
  - Vulnerability effect shows the highest degree of variability across states
    - In lieu of the overall negative vulnerability effect observed in 2004 we observed that many states have significant and positive effects for the same round.

# Conclusion

- The observed increasing calorie-based poverty and vulnerability effects are striking

***Steps***

- Current study:
  - Shed light on the empirical puzzle of falling per capita calorie consumption despite high income and consumption growth
  - Poverty Nutrition Trap