FOOD SECURITY IN BANGLADESH

What Role for Social Safety Nets?

Presented by: Akhter Ahmed

Bangladesh Policy Research and Strategy Support Program

International Food Policy Research Institute

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3 types of food insecurity and role of safety nets

1) **Chronic food insecurity:** About 20 million Bangladeshis who cannot purchase enough rice to meet energy requirements.
   - Productive safety nets
2) **Transitory food insecurity:** Those who normally meet energy requirements, but may lose access to food due to shocks.
   - Emergency relief, social protection to build resilience
3) **Hidden hunger:** A large percentage of the population is food-insecure due to diet quality vs. quantity.
   - Safety net + nutrition behavior change communication

IFPRI has created a comprehensive database for food policy analysis in Bangladesh

- IFPRI-PRSSP's Bangladesh Integrated Household Survey (BIHS): most comprehensive, nationally representative rural household survey to date. Largest panel survey.
- 4 unique features of data collection:
  1. plot-level agricultural production
  2. individual food intakes of all HH members
  3. anthropometry measurements of all HH members
  4. data to measure women's empowerment in agriculture index (WEAI)
- BIHS sampling is statistically representative
  - ✓ nationally of rural Bangladesh
  - ✓ rural areas for each of the 7 administrative divisions
  - ✓ USAID-supported Feed the Future Zone in southern Bangladesh

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IFPRI's BIHS: Big data, big impact

- Bangladesh Integrated Household Survey (BIHS): Nationally representative household survey. 2011 - 2015 panel.
- Downloads of BIHS dataset to date: **55,000**
- Diverse users across 6 continents

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Food Availability

Changing Scenario of Agriculture

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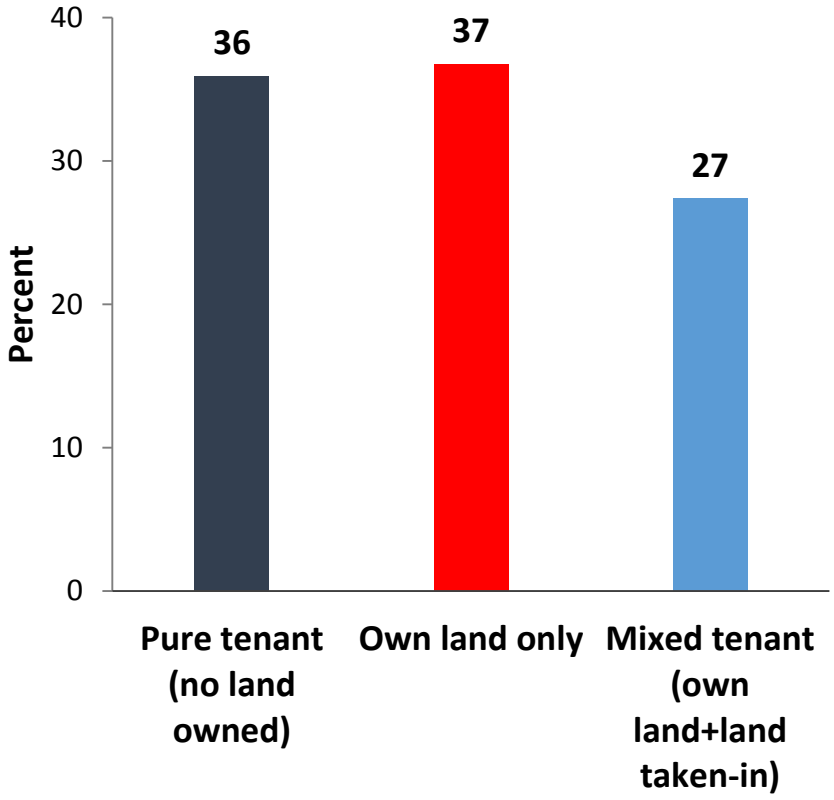
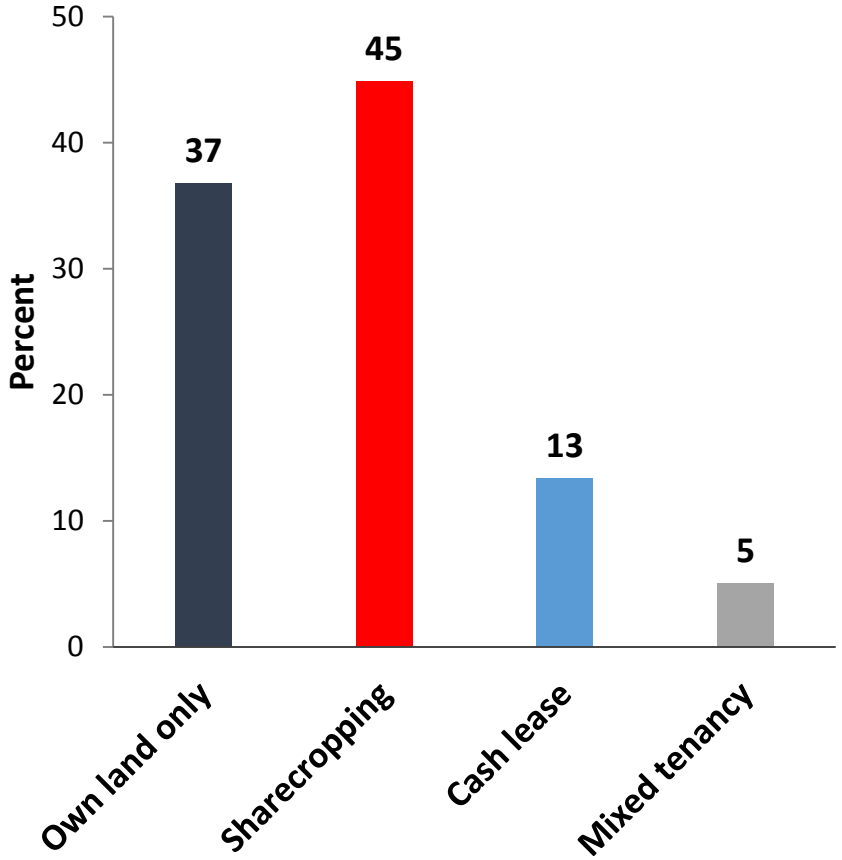
Agrarian structure has important policy implications

IFPRI BIHS 2015

Land tenure patterns

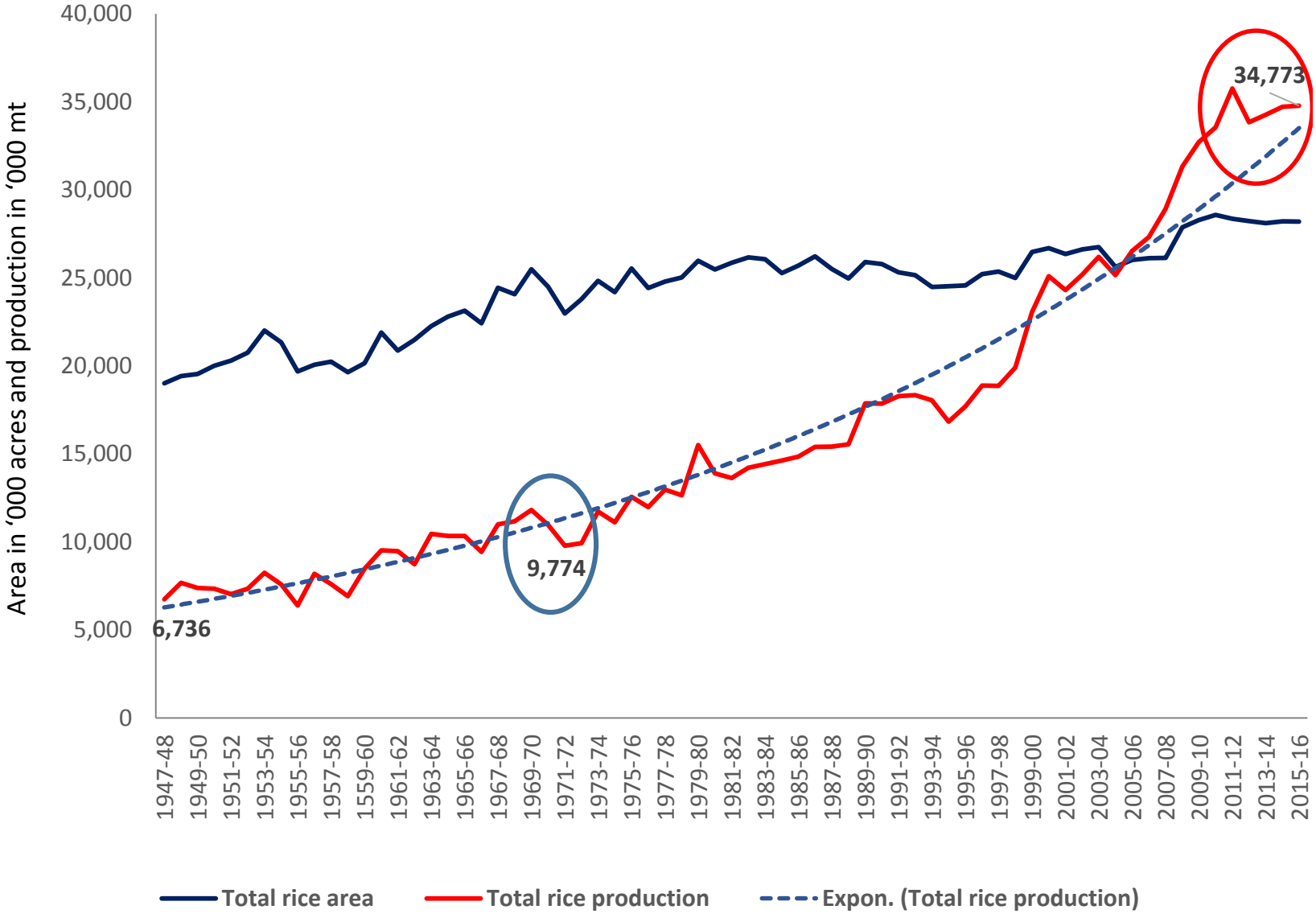


Forms of tenancy



Rice production more than tripled since liberation

Total rice area and production (Bangladesh Bureau of Statistics (BBS), various years)



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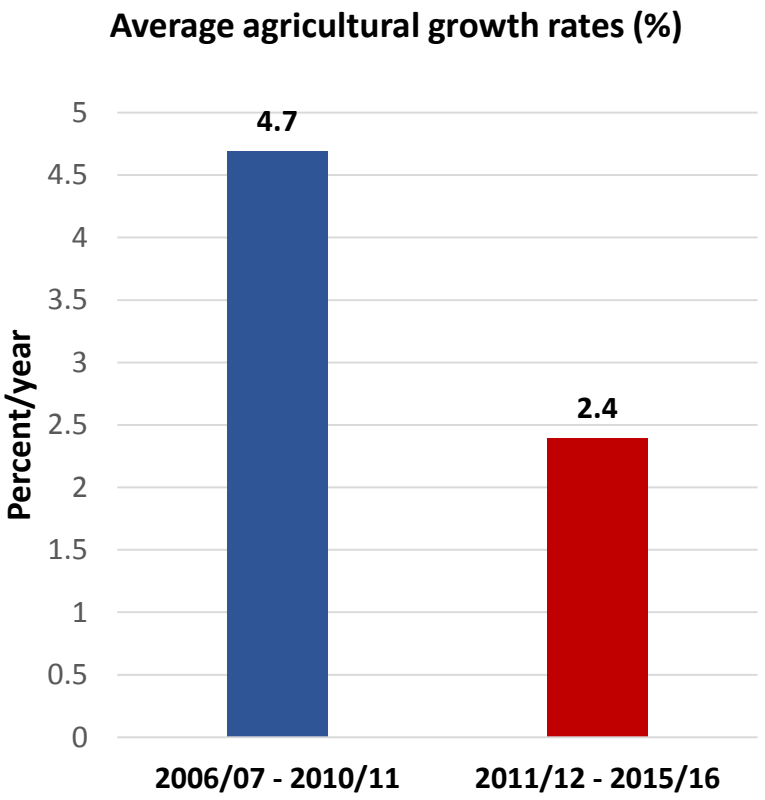
Agricultural growth has slowed down

- Agricultural growth has declined mainly due to drop in rice production.
- Certain sub-sectors are thriving:
  - Fish production: average annual growth rate 5.5% over 5 years (2007/08 to 2013)
  - Livestock subsector: average annual growth rate 3% over 5 years (2007/08 to 2013)



Source: BBS, various years

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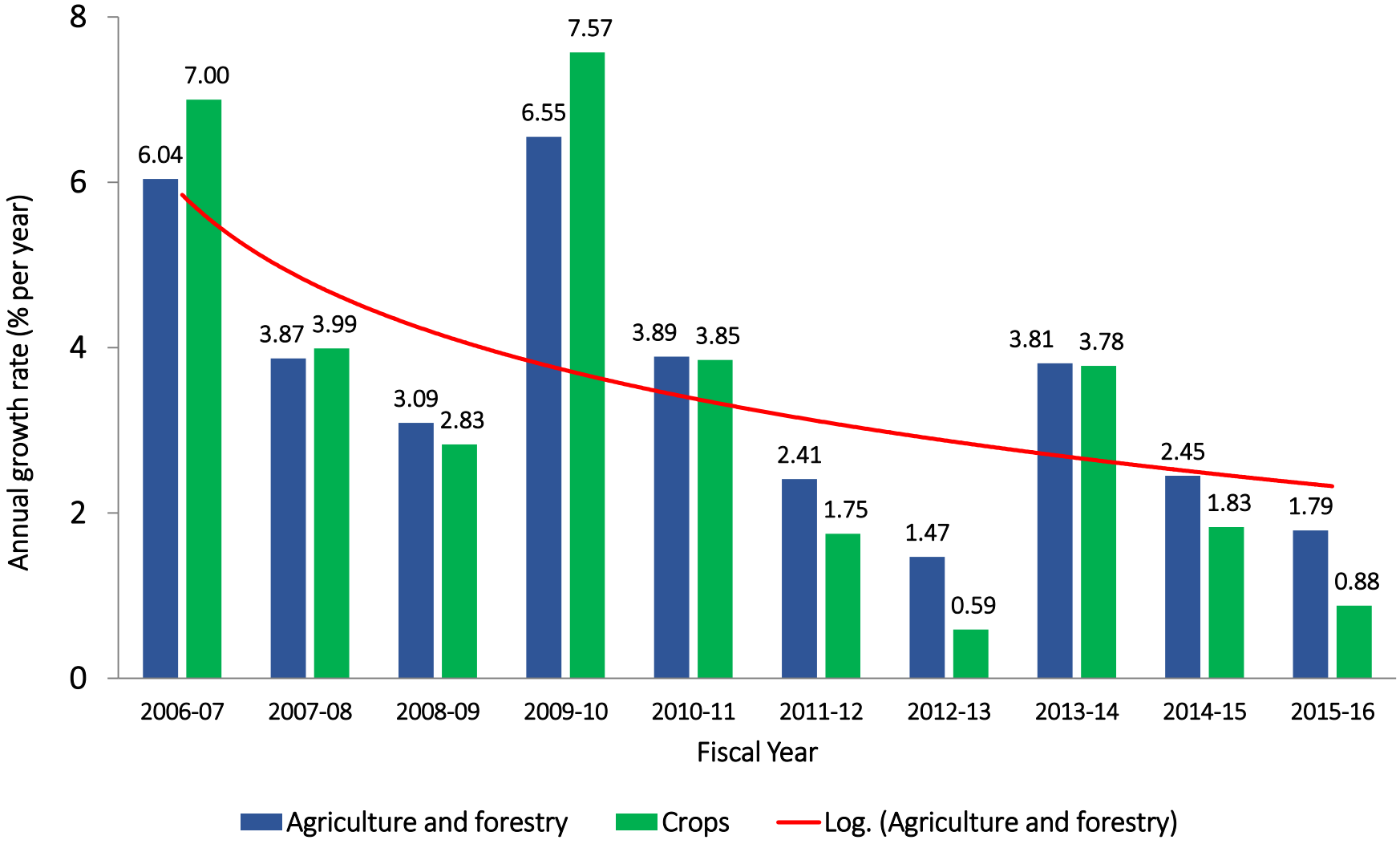
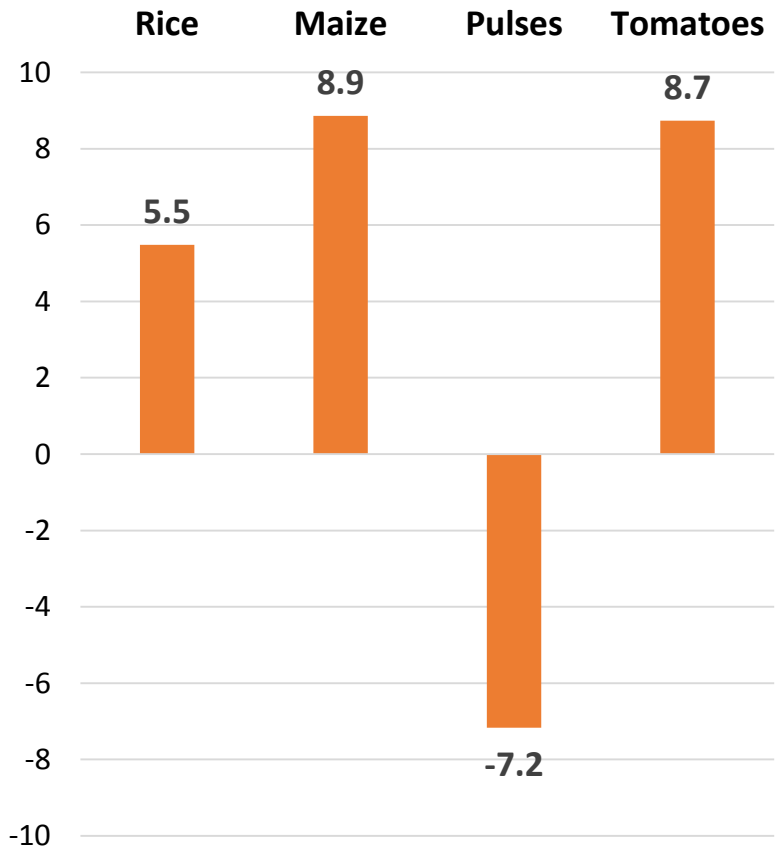
Crop sector drives agricultural growth



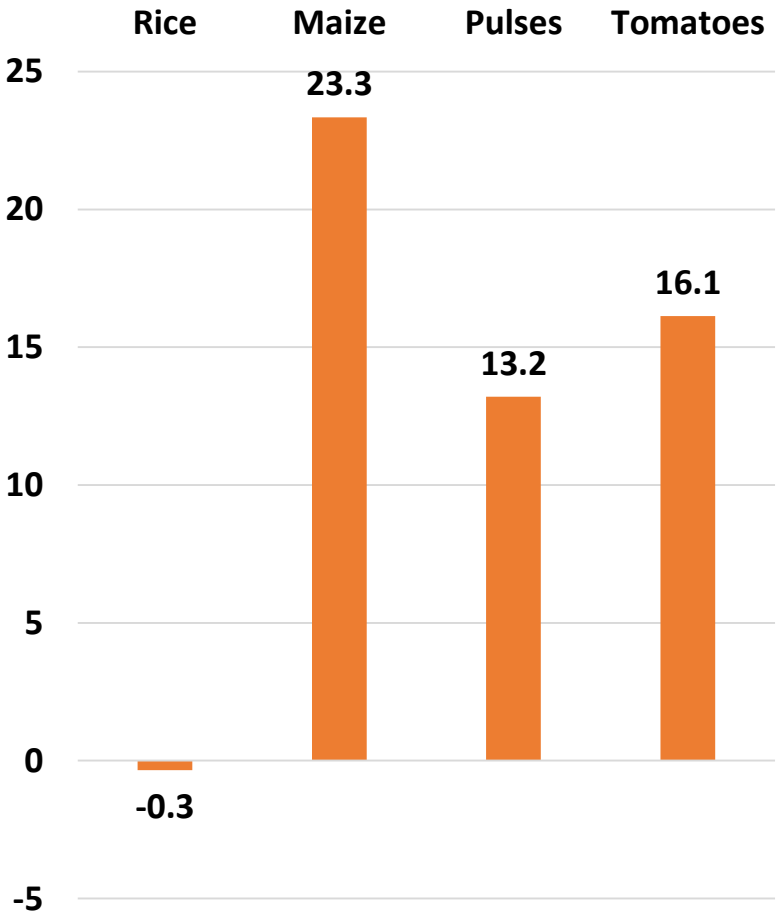
National growth in crop production

(BBS, various years)

Annual growth rates, FY2007-2011 (%)

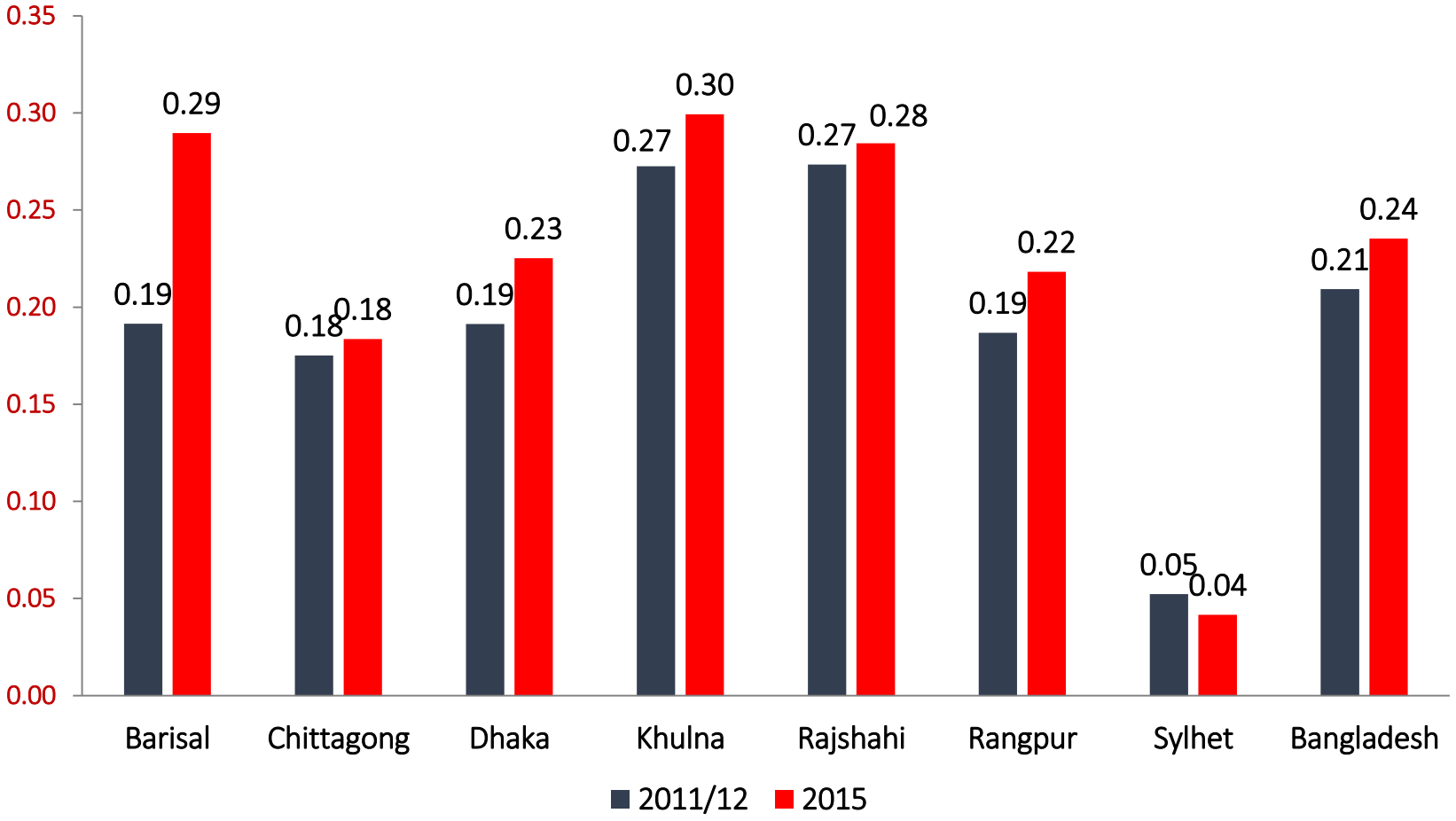


Annual growth rates, FY2012-2016 (%)



Crop diversity increased: Simpson Diversification Index, by division

IFPRI BIHS data



The Simpson diversification index is calculated as $SDI = 1 - \sum_{i=1}^{n} P_i^2$, where P_i is the proportionate area of the ith crop in gross cropped area.

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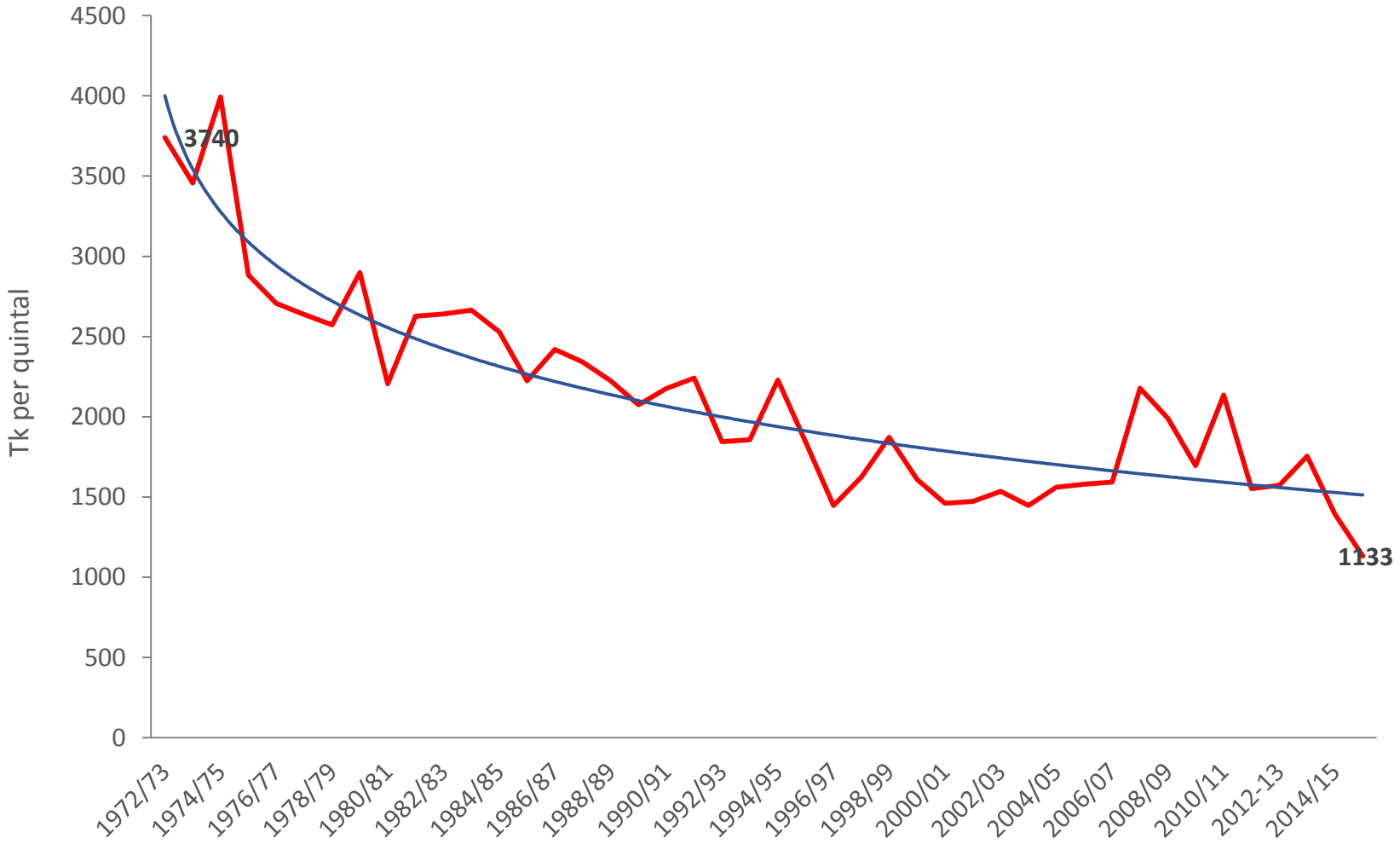
Real price of rice declined significantly

National average wholesale price of coarse rice (BBS, various years)



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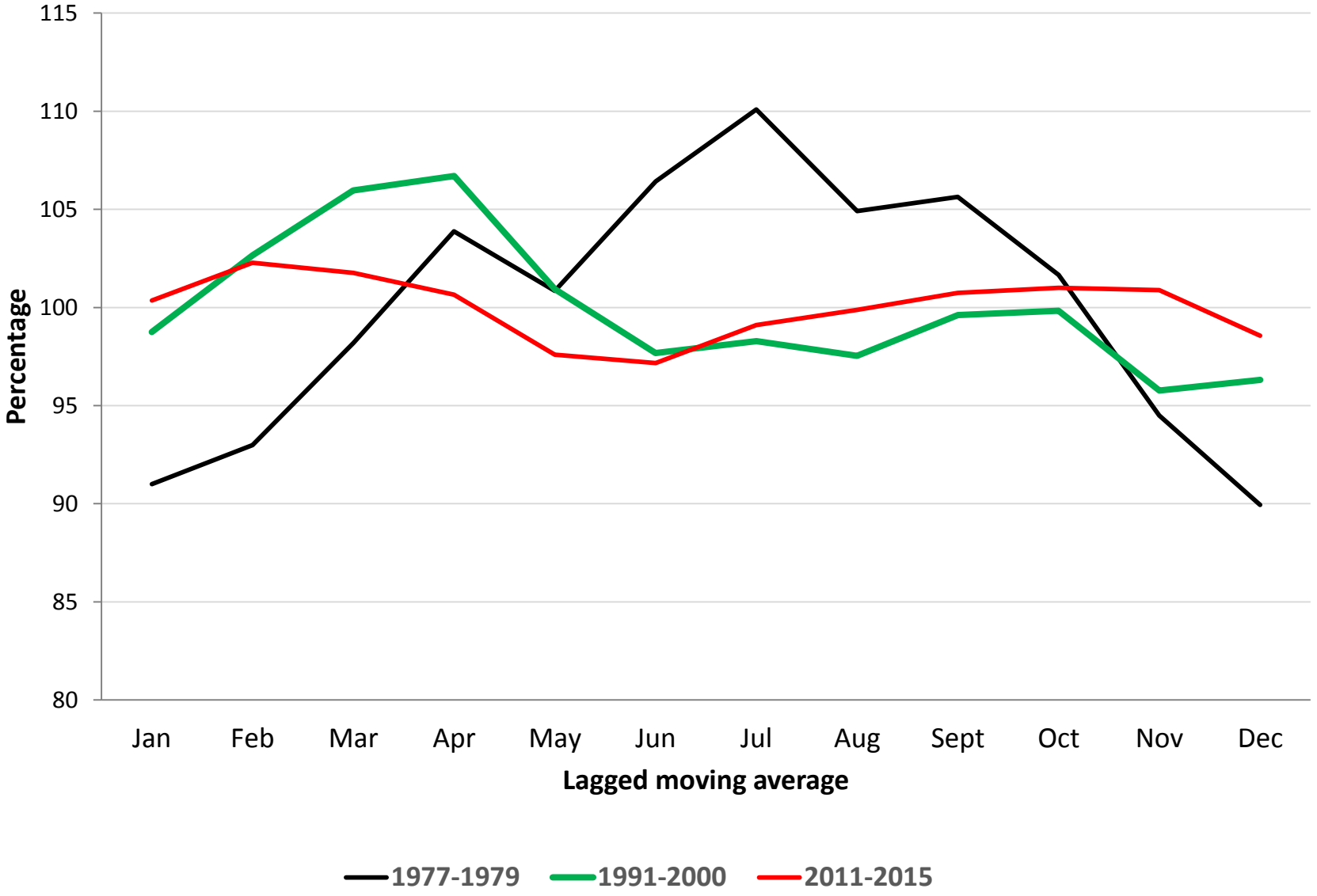
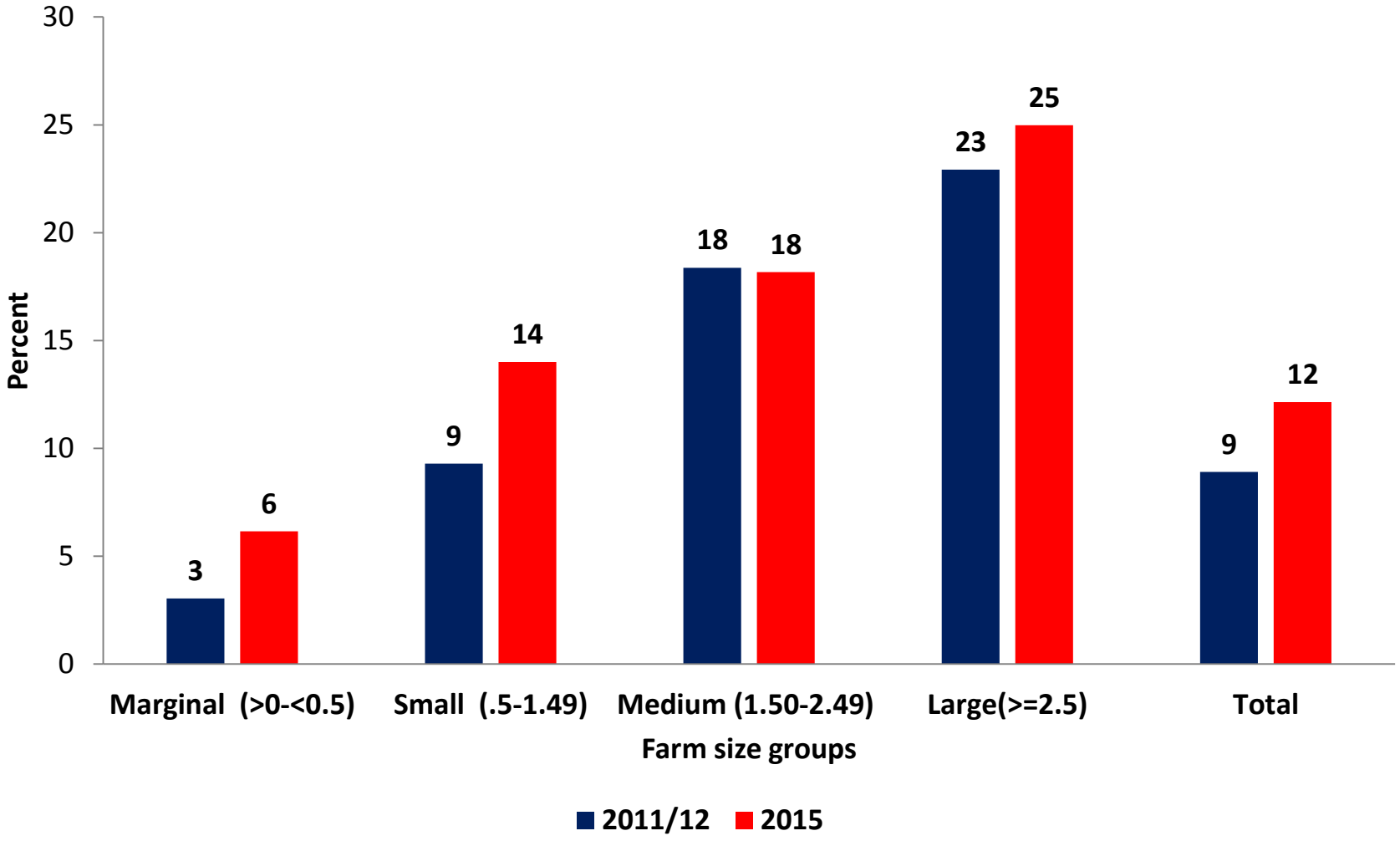
Magnitude of rice price seasonality reduced

(BBS, various years)



Large farmers get 4x more extension support than marginal farmers in 2015

IFPRI BIHS data



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Food Access

Poverty Dynamics and Income

Prevalence of poverty: Percent of people living on less than $1.25/day in rural Bangladesh

IFPRI BIHS data

Change in poverty headcount in rural Bangladesh:

- **39.6%** in 2011 → **29.4%** in 2015
  - Daily per capita consumption expenditures from 2011/12 and 2015 IFPRI household surveys were adjusted for inflation using Basic Needs Price Index (2005 base year) obtained from the World Bank
  - Used the international poverty line of $1.25 per day, measured at 2005 purchasing power parity (PPP) exchange rate for Bangladesh: PPP$1.00=25.494 taka (World Bank)
  - Calculated local currency equivalent of PPP $1.25 a day poverty line using 2012 and 2015 BNPI estimates

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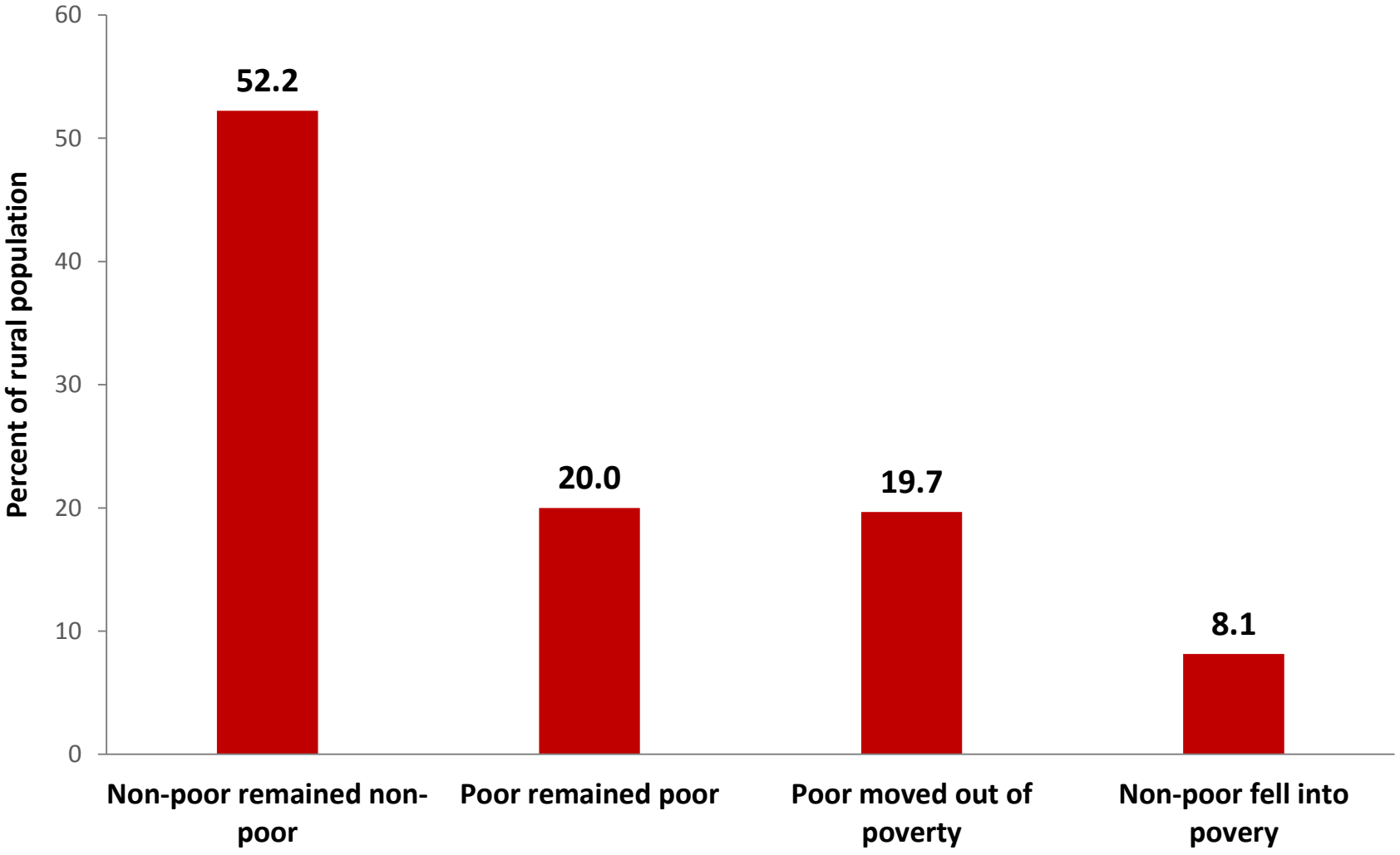
Dynamics of poverty in rural Bangladesh: Changes from 2011 to 2015

IFPRI BIHS data



Why do the poor remain poor?

Using multinomial logit regression and IFPRI BIHS panel data, we examined probable reasons why the poor remained in poverty from 2011 to 2015. **Main factors that increase the likelihood of remaining in poverty are:**

- **Low levels of human and physical assets:** Lack of education of HH heads, land holding, and reduction in total value of other assets
- **Decrease in nonfarm income** share in total income
- **Decrease in women's empowerment** in agriculture (WEAI)
- **Decrease in savings**; **no remittances**
- **No access to electricity** and **no ownership of cell phone**
- Longer distance to main road

Falling into poverty

Key results from multinomial logit regression suggest that the following **factors tend to prevent households from backsliding into poverty:**

- More schooling of primary male and females in HH
- Higher value of asset holding and increase in savings
- Receives remittances
- Access to electricity
- Owns mobile phone
- **For social safety net beneficiaries, if income transfer is at least 1,500 taka ($19) per month per household.**

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What factors affect farmers' income?

Using random effects panel regression and a sub-sample of IFPRI BIHS data, results show that **farmers' income tends to increase if:**

- HH male head and female spouse have at least secondary school education
- HH male head and female spouse have access to commercial loans
- Women are more empowered (measured by WEAI)
- Non-farm income share increases
- Have access to electricity (solar panel or national grid) and own cell phone
- Domestic and international remittances increase

Farmers' income tends to decrease when:

- Share of cropped land under rice cultivation increases

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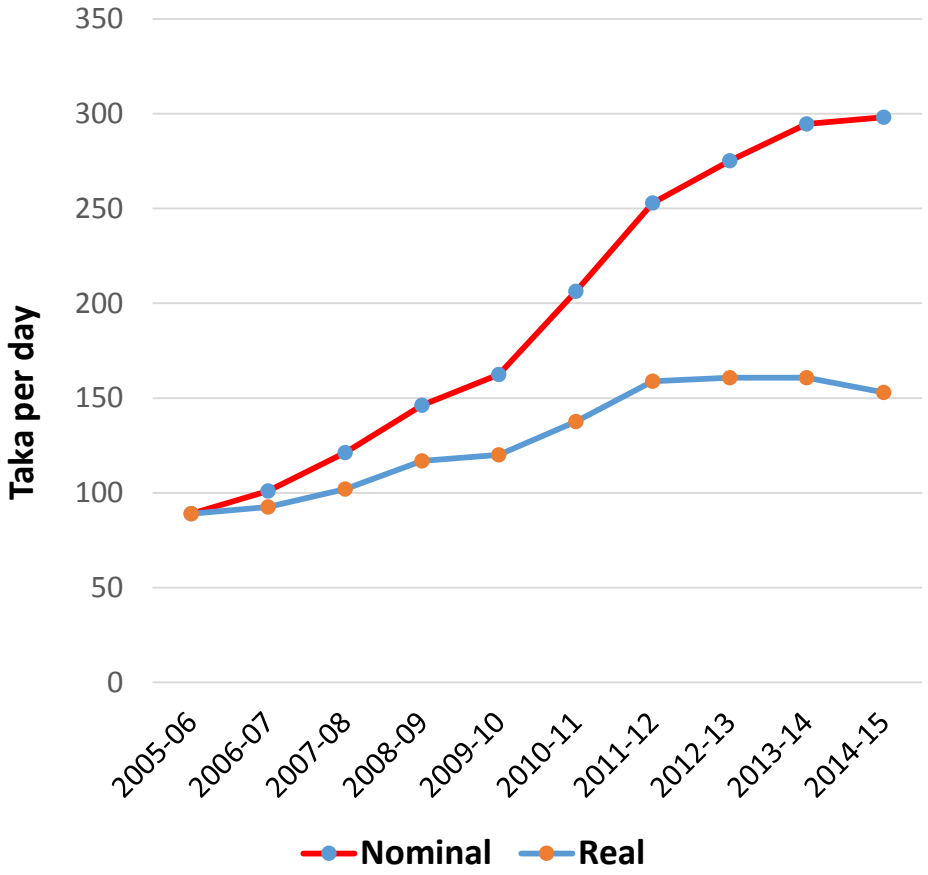
National agricultural wage increased sharply

Wage increase helps the poorest (BBS, various years)

- In June 2008, agricultural laborers could buy 4.5 kg of rice from a day's wage
- In June 2014, day's wage increased to 9 kg of rice.



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Women's empowerment helps break poverty and hunger traps

IFPRI research results show that an increase in women's empowerment in agriculture (measured by WEAI) helps

- people move out of poverty;
- improve household, child, and maternal dietary diversity; and
- increase agricultural diversity.

- *Results also show that increased agricultural diversity improves household dietary diversity.*

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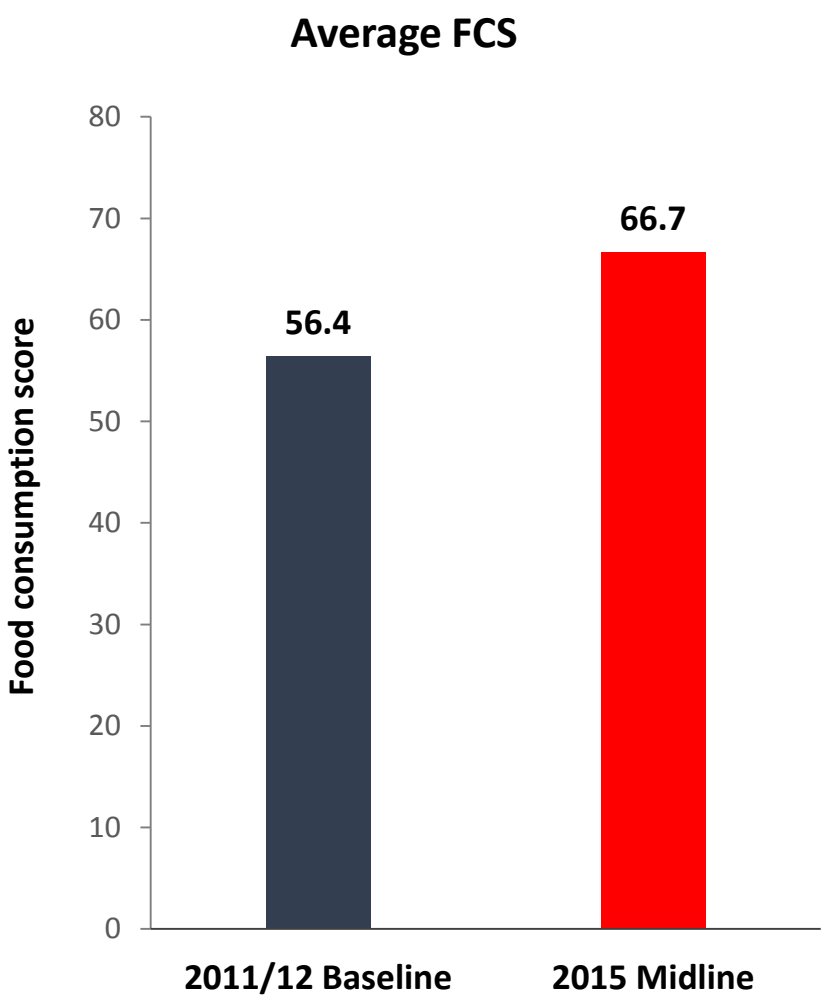
Source: IFPRI 2011-2015 BIHS surveys

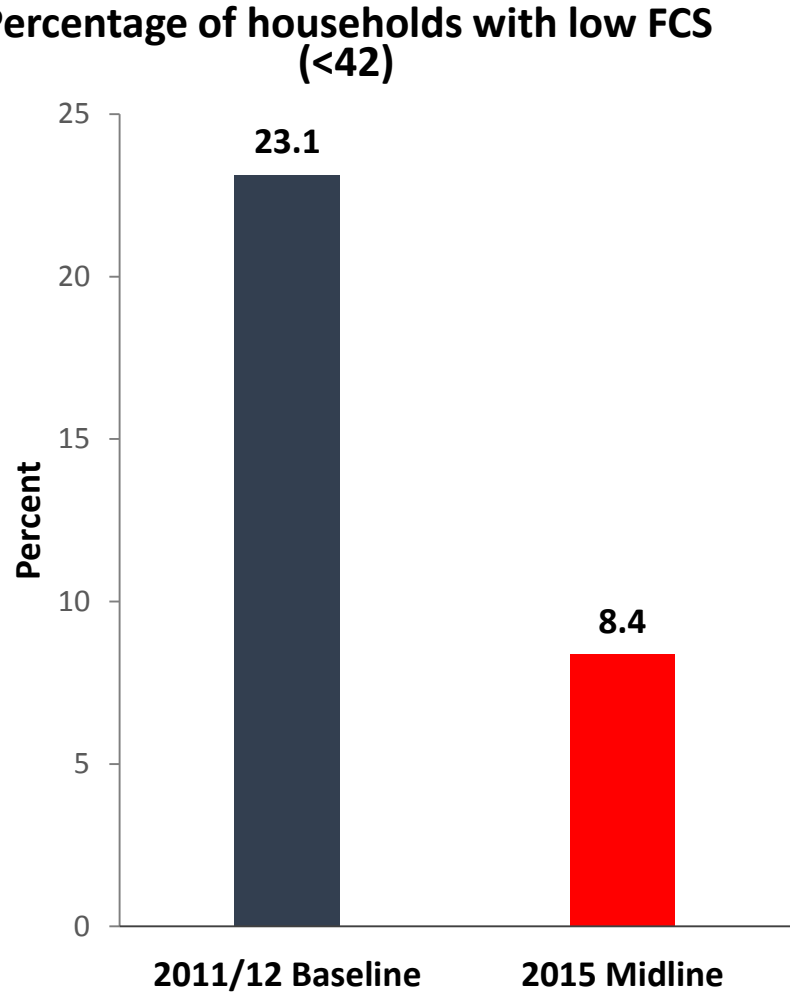
Food Utilization

Nutrition Situation

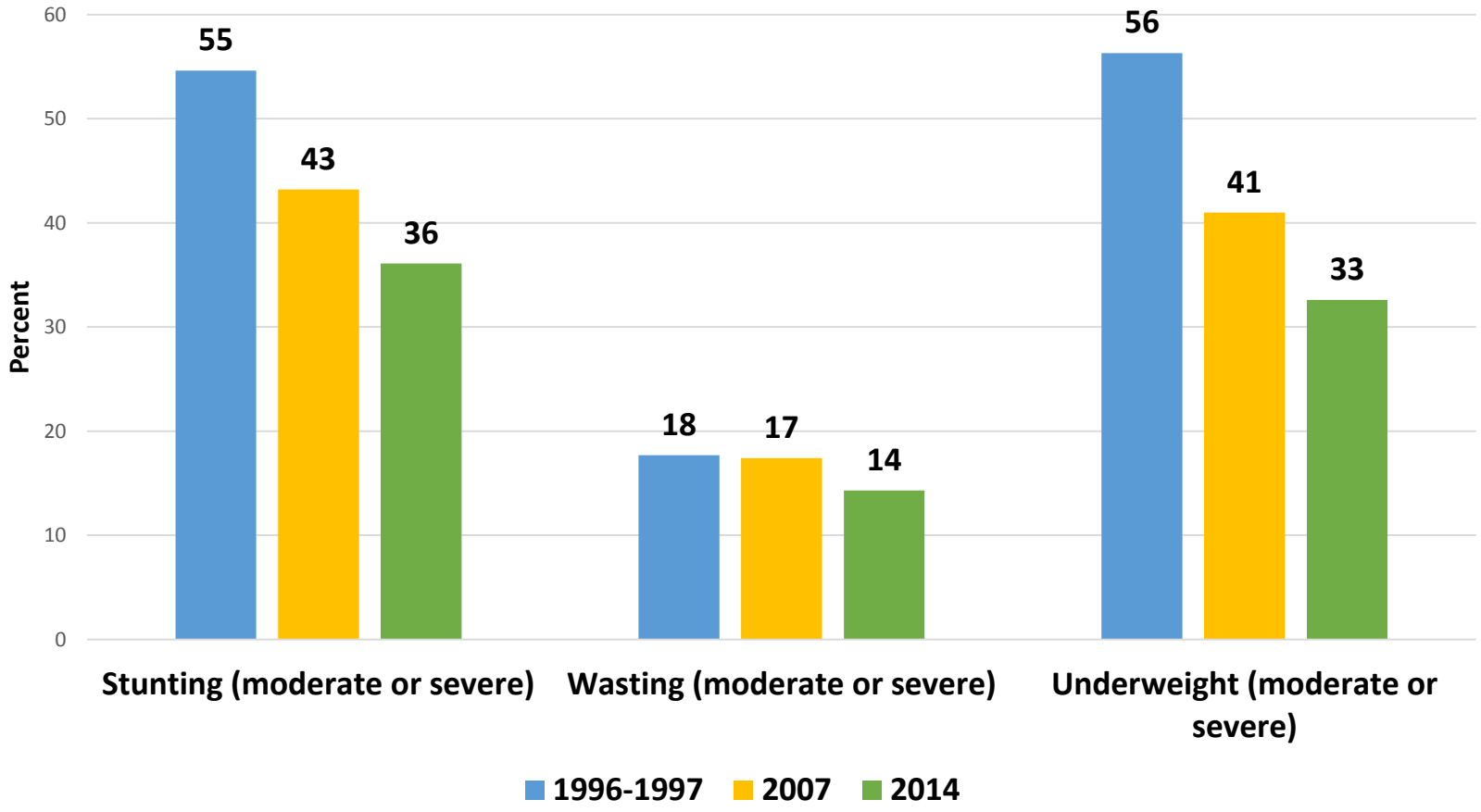
Household diet quality improved

(IFPRI BIHS data, estimated WFP's Food Consumption Score: 0-112)



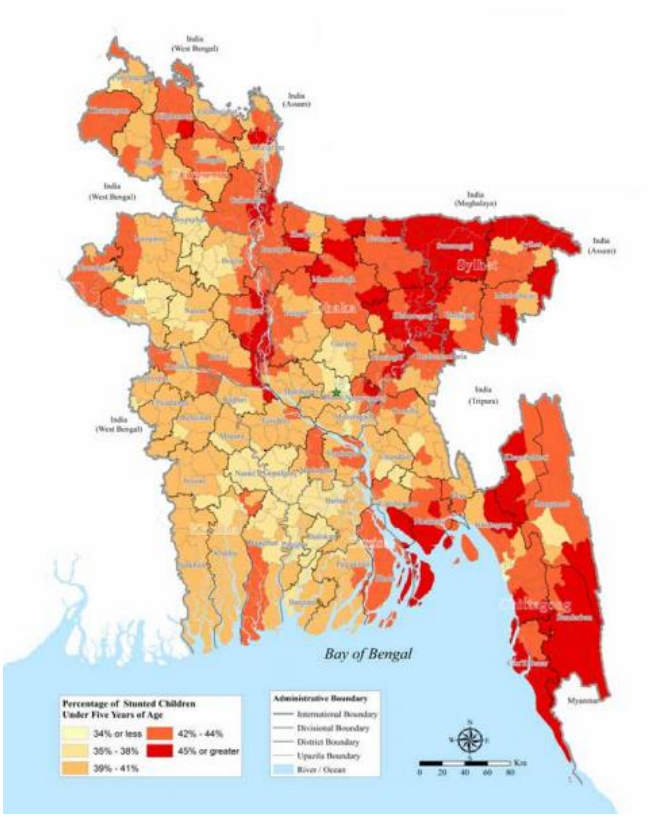


Despite decline, more than 1/3 of children are still stunted (DHS, various years)

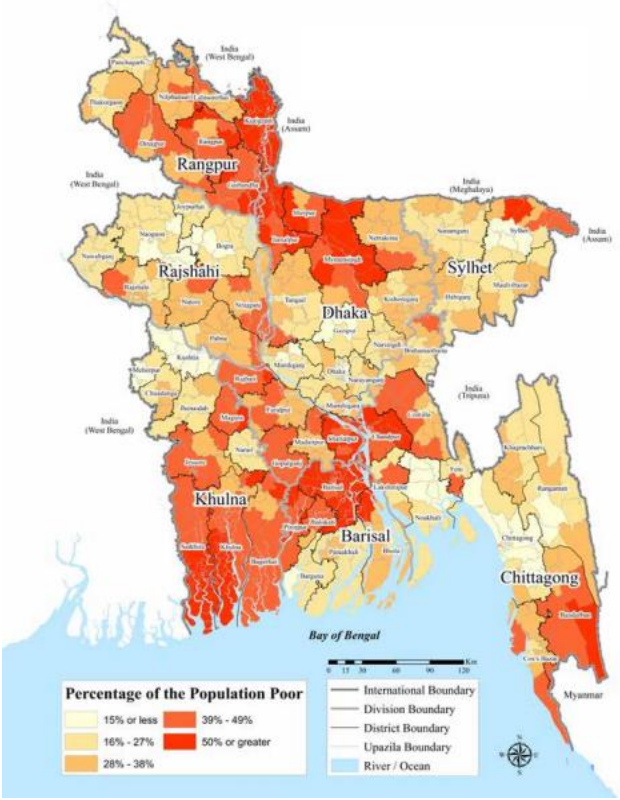


A paradox: stunting is highest in regions of lowest poverty, and vice versa

Child stunting



Poverty

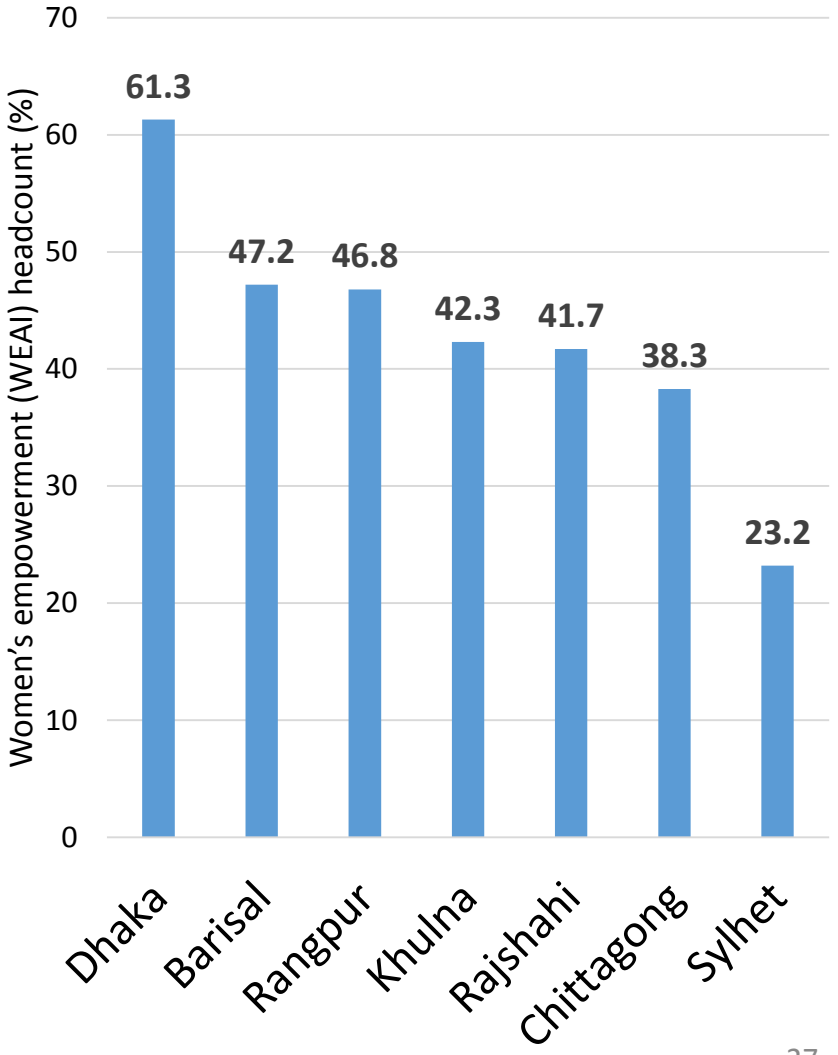


Source: WFP 2012

Paradox is partly explained by regional difference in women's empowerment

Estimated using IFPRI BIHS data

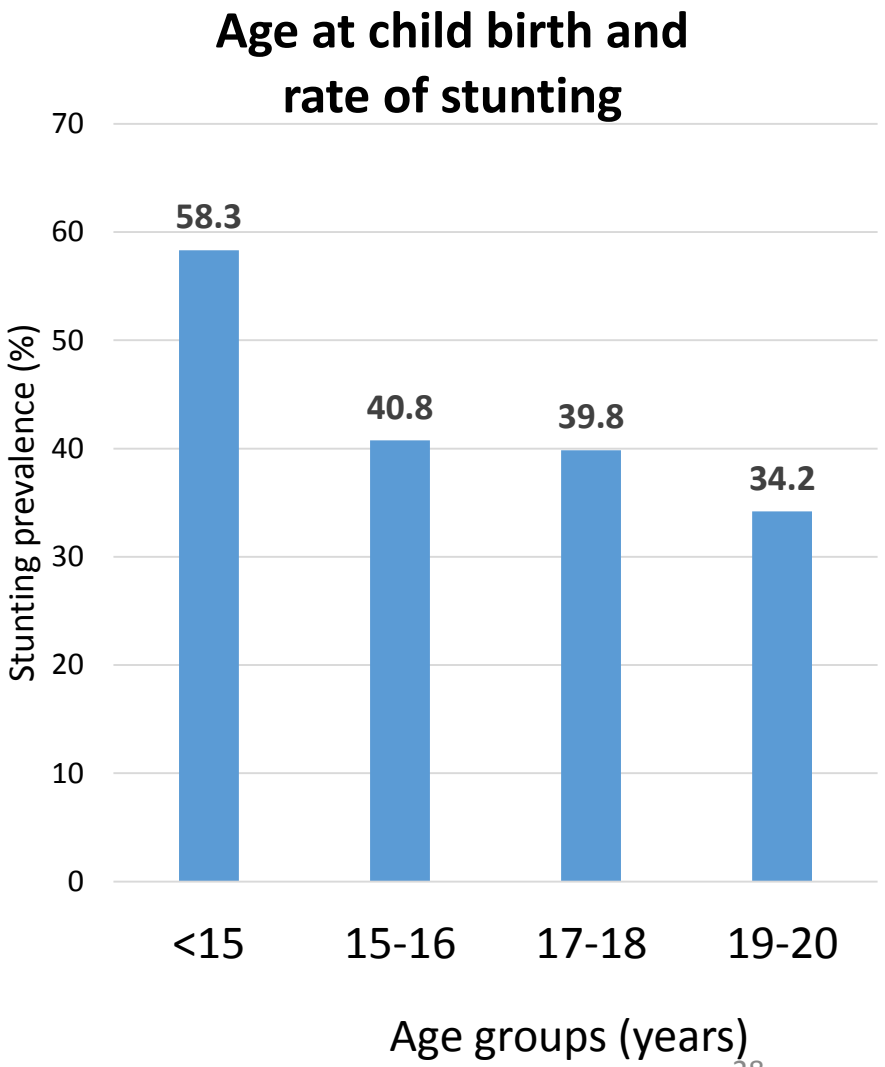
- Sylhet Division: lowest women's empowerment, second highest income
- Barisal Division: second highest women's empowerment, second lowest income



Source: IFPRI 2015 BIHS

High rate of adolescent pregnancies is associated with stunting in Bangladesh

- 58% of girls in rural areas get married before age 18
- Adolescent girls aged <19 account for 36% of all child births in rural Bangladesh
- *Early marriage → Early pregnancy → Low birthweight → Stunting*



Source: IFPRI 2015 BIHS

Source: 2014 DHS

Social Safety Nets in Bangladesh

What role for improving food security?

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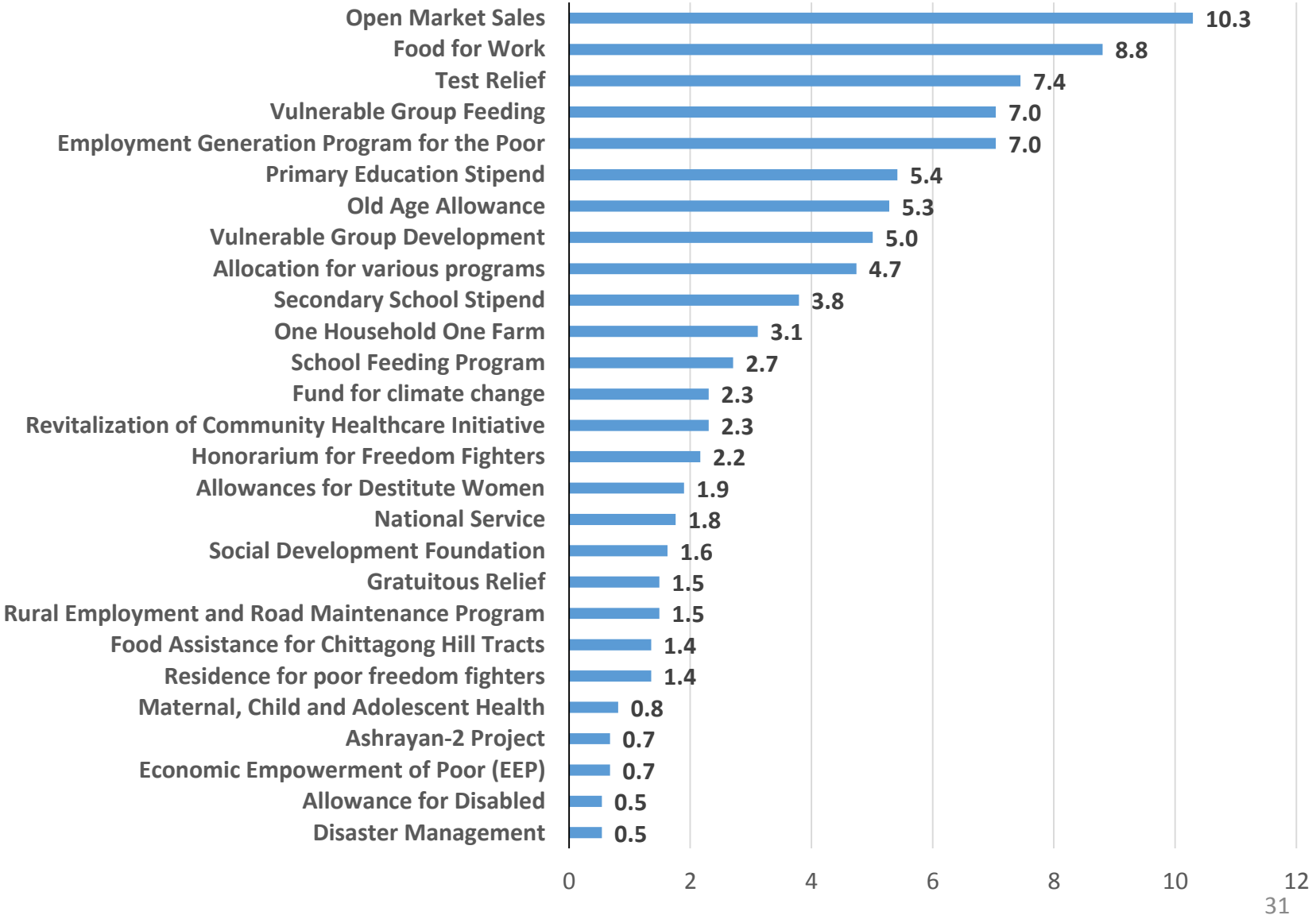
Safety Nets in Bangladesh

- Formal safety nets redistribute resources to poor people to reduce their economic hardship.
- Bangladesh has made significant progress in strengthening social safety nets to assist the poor. Notable changes over the years include:
  - Converting ration price subsidies to targeted food distribution for the poor
  - Shifting the focus from relief to development
  - Engaging NGOs in program implementation

Percentage distribution of safety net programs by FY2013 SSN budget allocation: $2.7 billion, 12% of national budget

Top 10 programs account for 62% of total budget



Source: General Economics Division, Ministry of Planning

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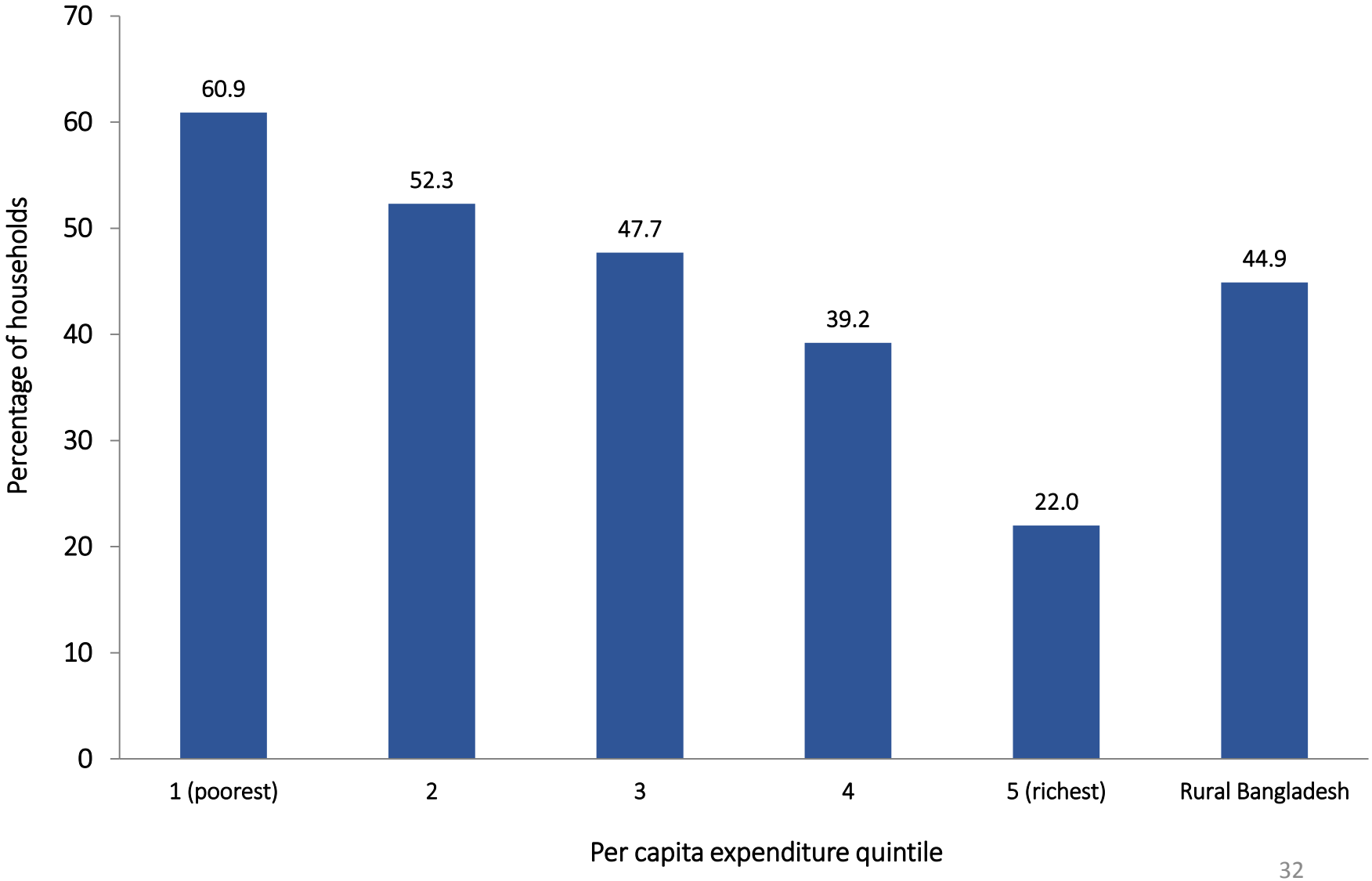
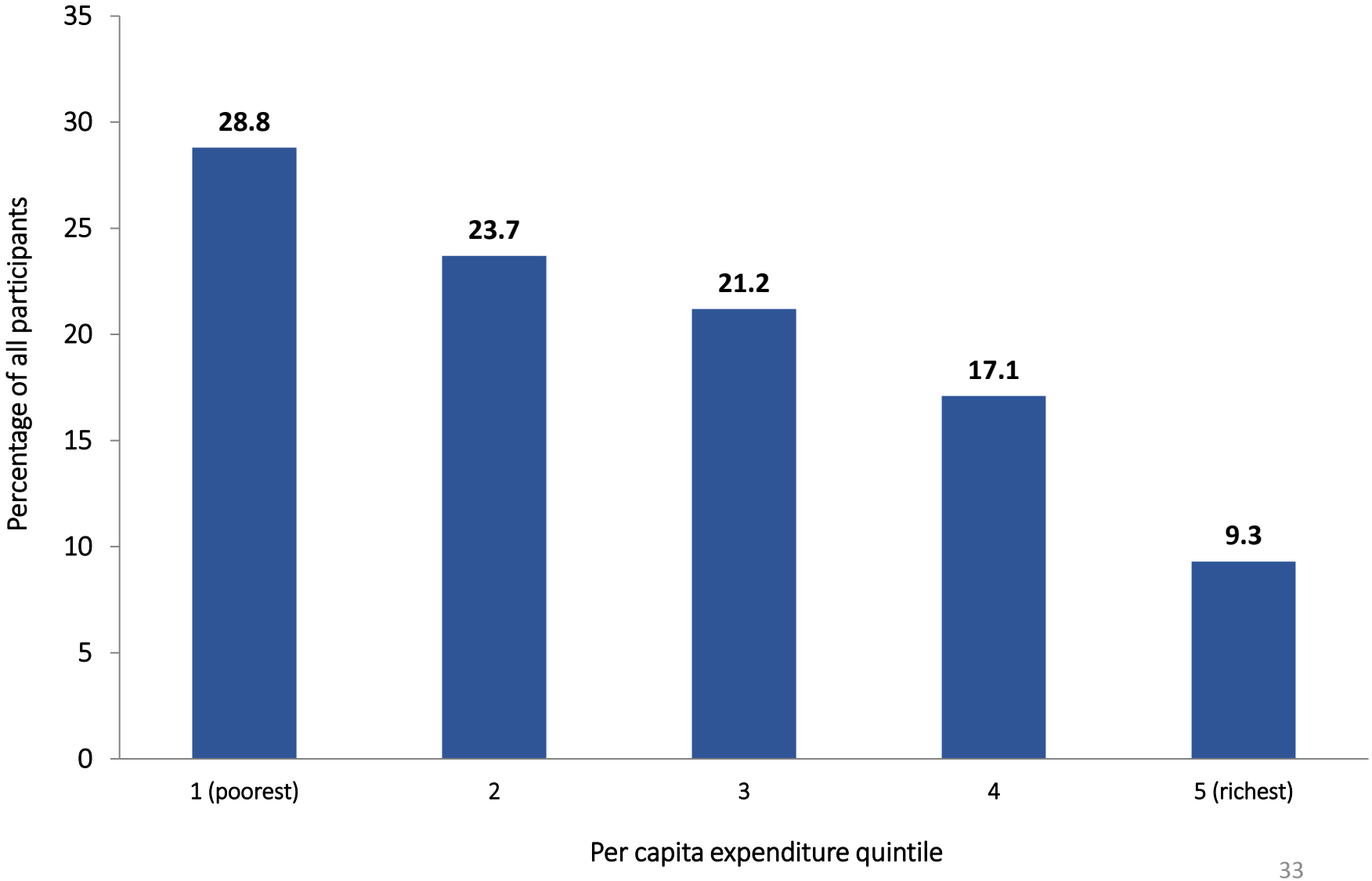
Percentage of households in at least 1 safety net program, by income groups

IFPRI BIHS data



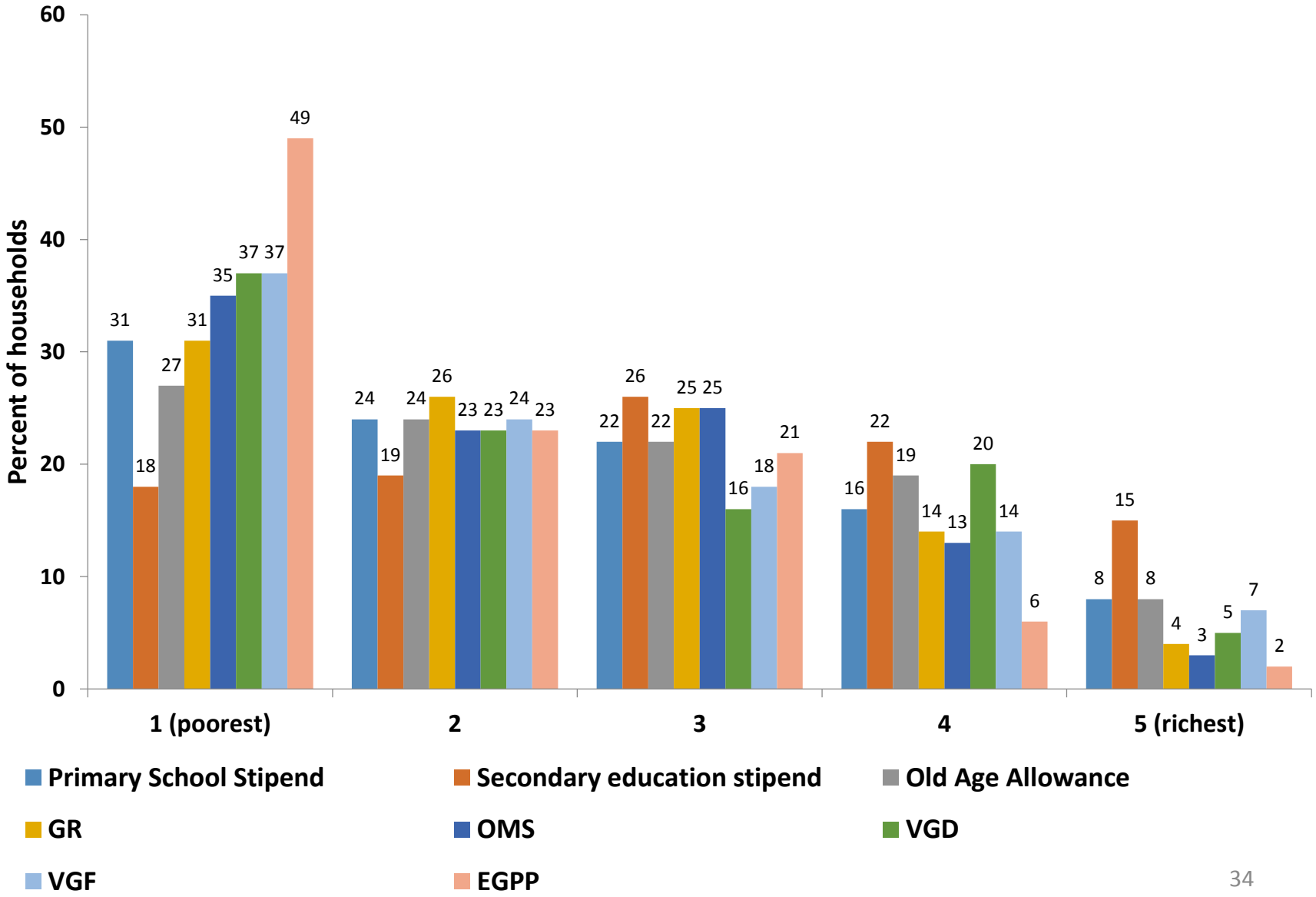
Distribution of all safety net participants by income groups

IFPRI BIHS data



Targeting effectiveness of major safety net programs

IFPRI BIHS data

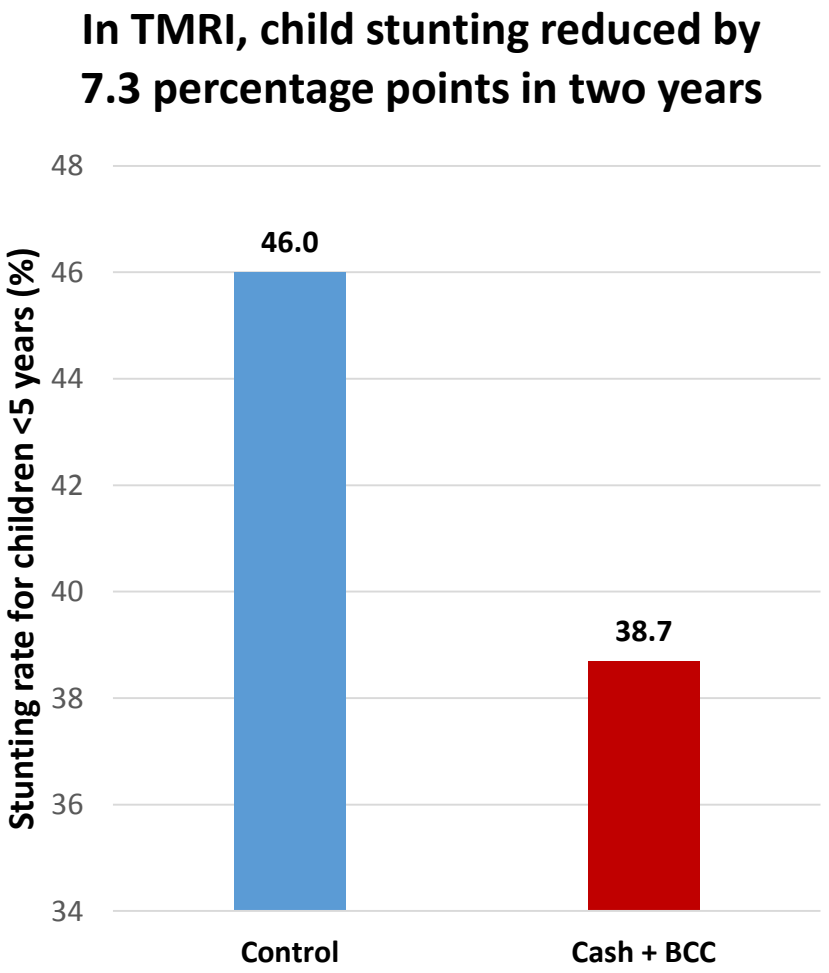


Limited impact of safety nets on nutrition

- Most existing evidence from evaluations (by IFPRI and others) of major safety nets in Bangladesh show reduced household poverty and improved food security but few improvements in child nutritional status.
- This leads to two key questions:
  1. Are large-scale social protection interventions that increase resources sufficient to improve child nutrition?
  2. Are there constraints other than resources, such as nutrition knowledge, that also need to be addressed?

IFPRI-PRSSP research shows safety net cash transfer + nutrition education has greatest impact on child nutrition

- IFPRI designed an experimental program in Bangladesh called the Transfer Modality Research Initiative (TMRI).
- WFP implemented TMRI from 2012 to 2014 to determine what combination of cash, food, and nutrition behavior change communication (BCC) in safety nets brings the greatest benefits for ultra-poor rural households.
- Cash + nutrition BCC led to a 7.3 percentage points decrease in child stunting over the project period—almost three times greater than national average decline in stunting.



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Policy Conclusions

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Conclusions

- Recent slowdown of agricultural growth needs attention.
- Increase investments in agricultural research to promote rice intensification/productivity.
- Rural agricultural labor is no longer abundant, so policies should focus on ways to improve productivity in the wake of rising labor costs.
- Mechanization, accelerating the adoption of modern agricultural technologies for improving crop yields, and improving labor productivity may ease farmers' burden.
- About 1/3 of all farm households are "pure tenants" (do not own the land they work). Therefore, they have insecure, prohibitive, and unstable access to land through sharecropping or land-leasing arrangements, which act as a deterrent for technology adoption. Policies should take into account the implications of this important constraint.

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Considerations

- **Accelerate agricultural diversity:**
  - Remove risk from production of high-value, high nutritive value crops through contract farming, agricultural credit, etc.
- **Promote non-farm employment:**
  - IFPRI's poverty analyses show that an increased share of non-farm income out of total income helps move people out of poverty.
  - Promote agriculture-driven, non-farm activities (e.g., vocational training in repairs and servicing of ag machineries, particularly for rural youth).
  - Gainfully employ rural youth in agricultural value chains (e.g., packaging, transport).

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Considerations

- **Links between early marriage and nutrition:**
  - Pregnancy in girls who are still growing leads to competition between the mother and the fetus for access to nutrients, a battle which the fetus invariably loses.
  - IFPRI's qualitative results found that girls marry early due to (1) harassment by male youth, and (2) avoid paying higher dowry.
    - A massive social campaign is needed to increase the age of marriage, as well as to postpone pregnancy of those girls who do marry early.
    - To delay pregnancy after marriage, promote effective family planning

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Considerations

- **Revamp social safety nets to reach the most vulnerable to improve their livelihoods**
- Improve the targeting performance
- Scale up effective programs
- Ensure sustainability of program benefits
- Integrate nutrition BCC into social safety nets
- Increase the size of transfers to generate sizable impacts on food security and nutritional outcomes
- Consolidate and simplify programs and phase out high-cost, inefficient programs
- Improve monitoring, evaluation, and learning
- Move beyond coping approaches (safety nets) to risk-reduction approaches (social protection)

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For questions and comments, please contact: Akhter Ahmed

Email: a.ahmed@cgiar.org

Thank you