



# Food Systems in EGP: Opportunities and Challenges

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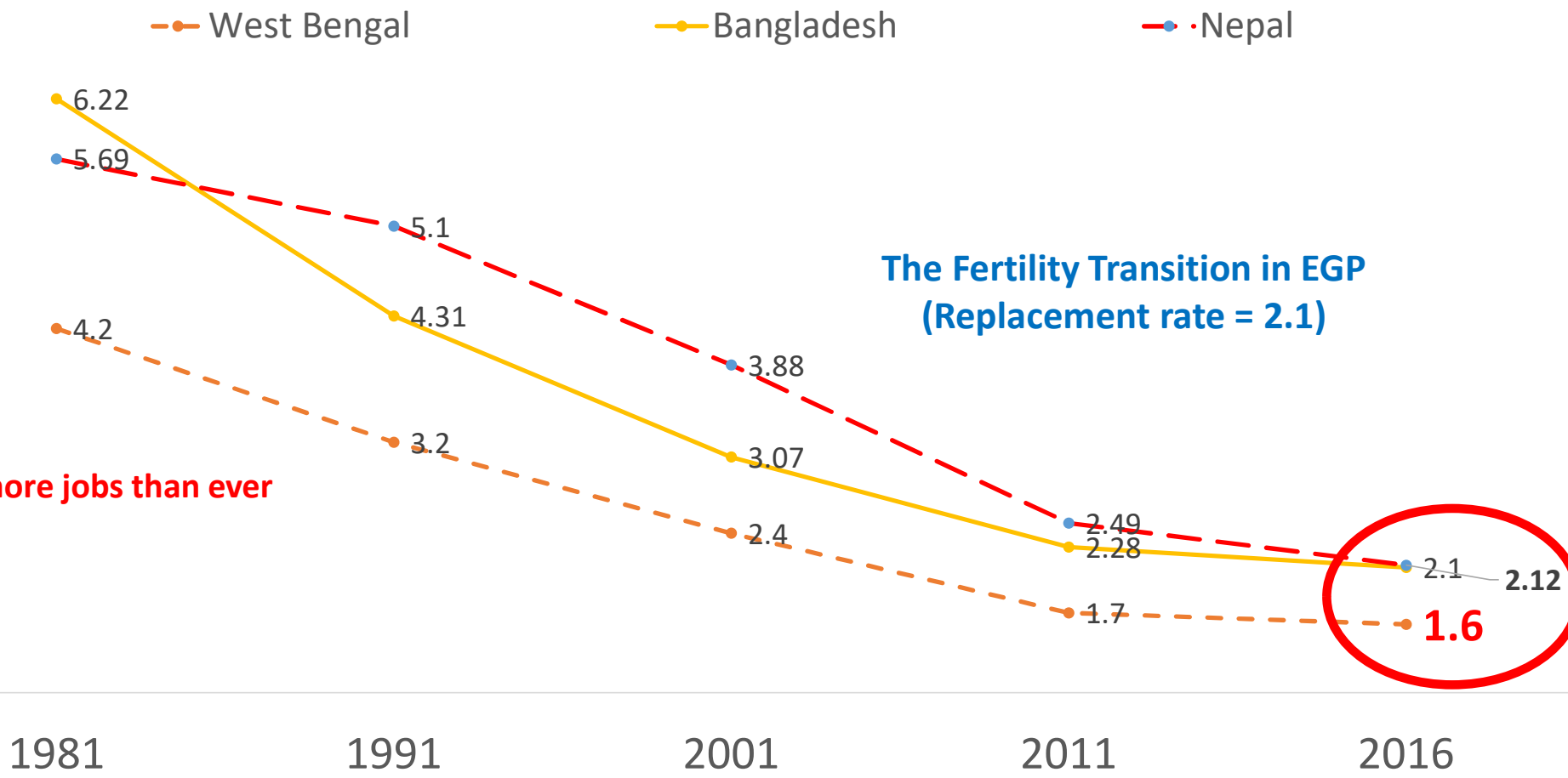


• Food systems are connected to all SDGs except Goals 4 and 16\*

EGP is home to 380 million people  
 >50% are farmers  
 Food accounts for 2/3<sup>rd</sup> of HH expenditure

EGP is critical to the achievement of the Global Goals

# EGP is entering Demographic Dividend



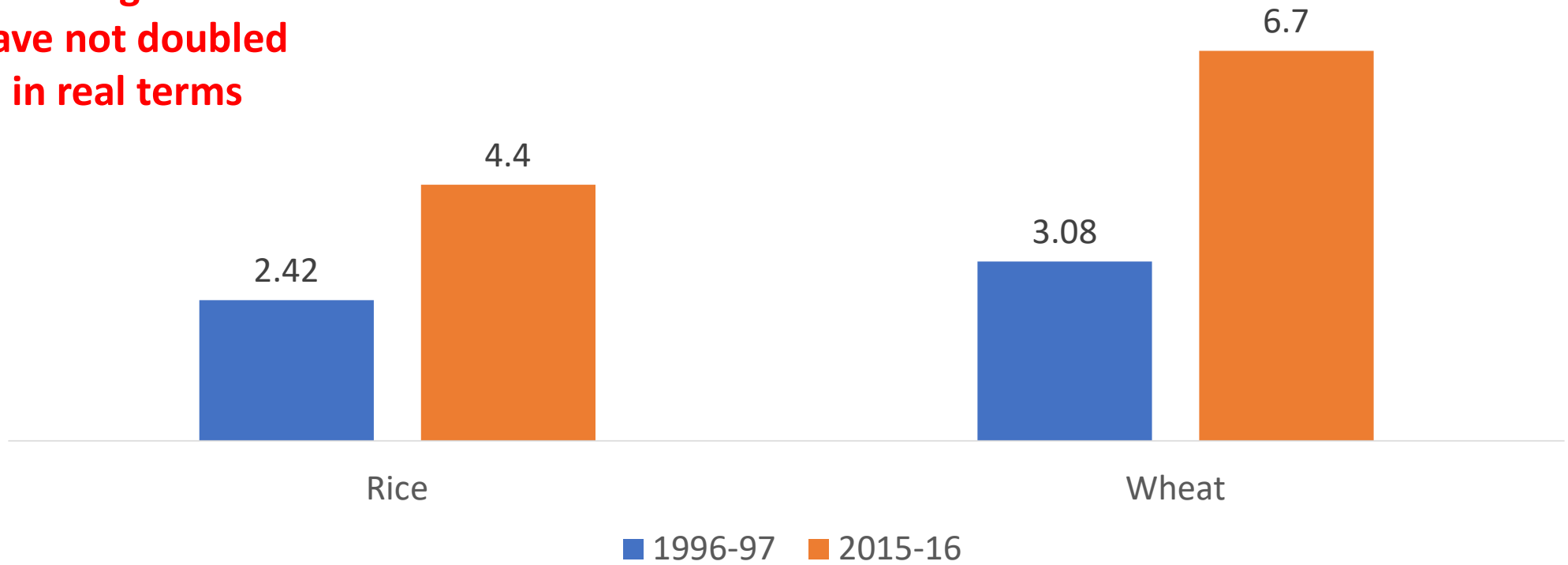
The Fertility Transition in EGP  
(Replacement rate = 2.1)

Need to create more jobs than ever before. How?

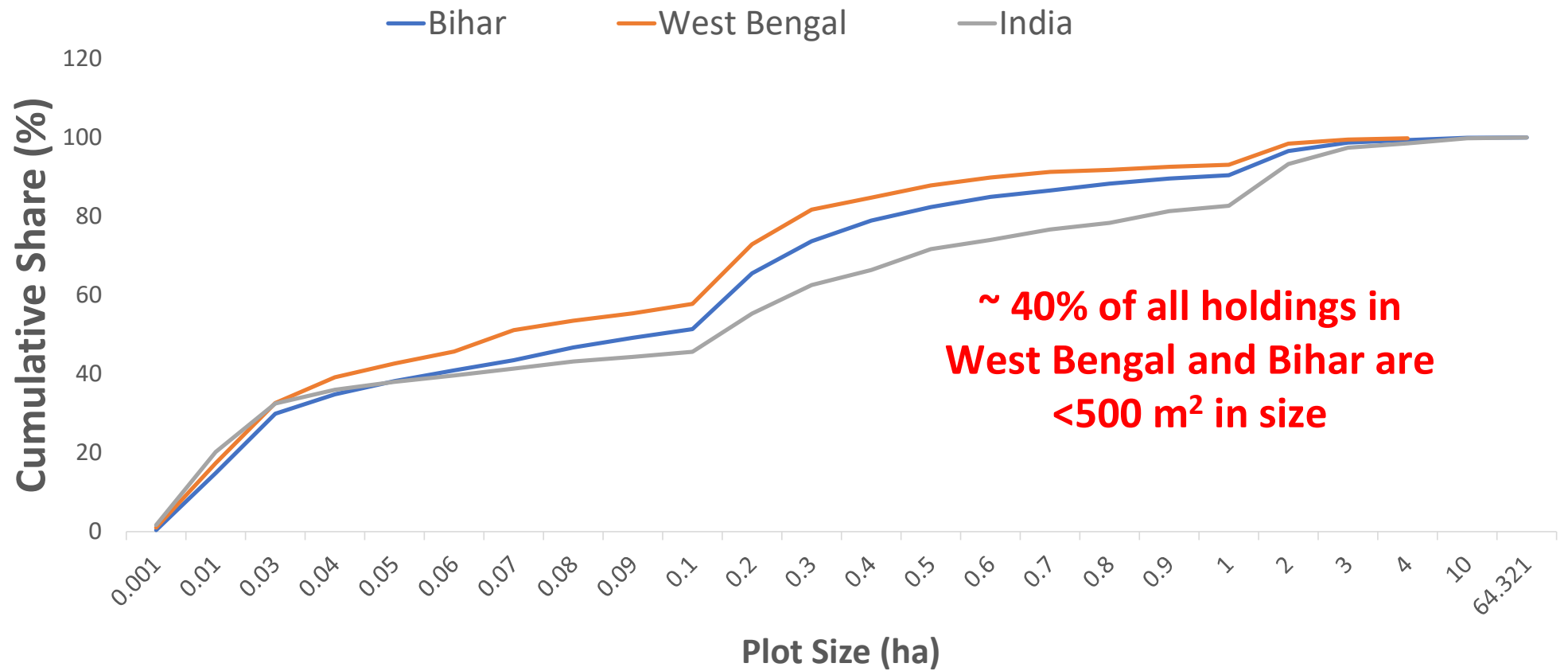
# Labor productivity has doubled in 20 years

Kilograms/hour of human labour

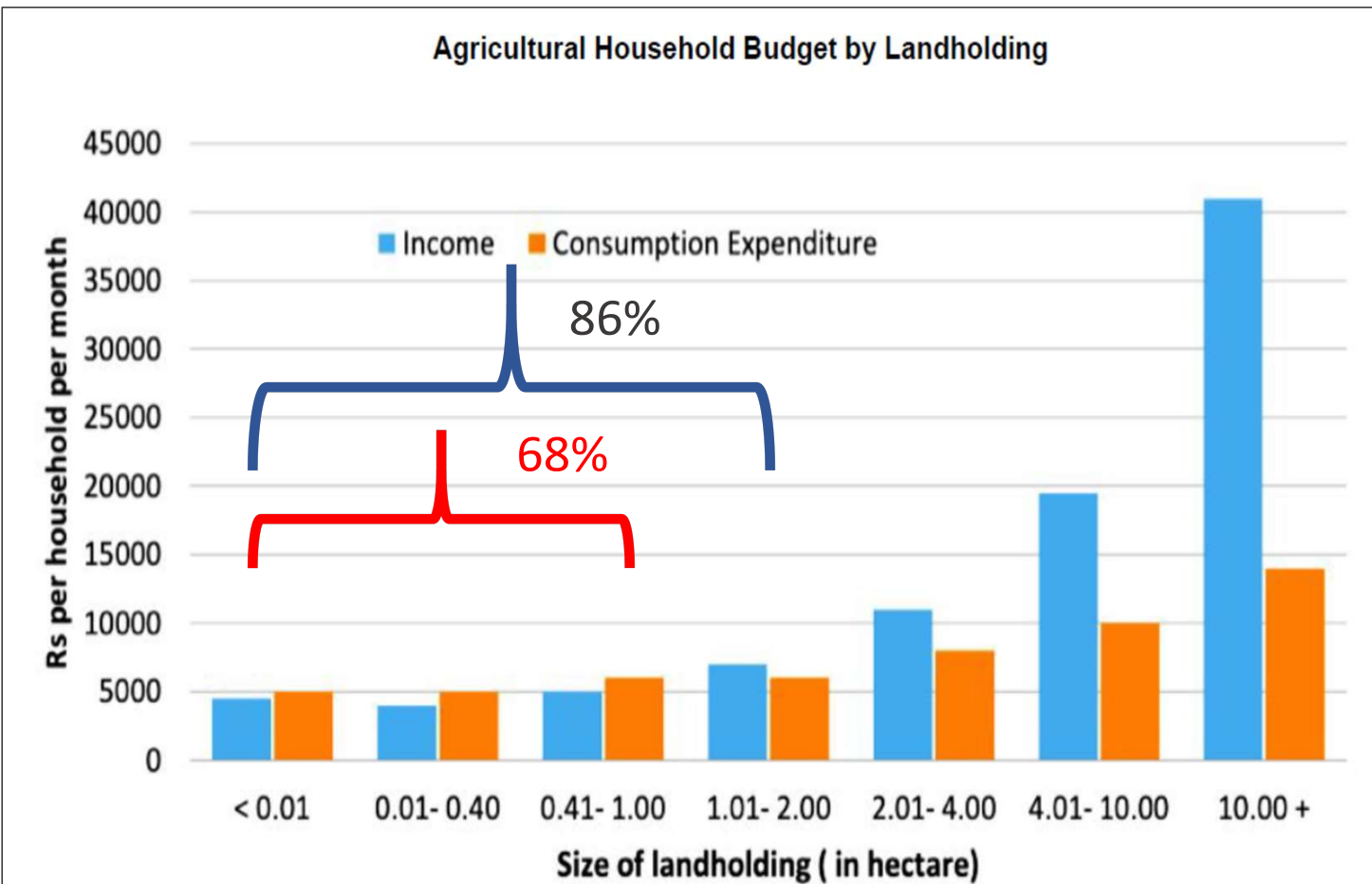
**But wage rates  
have not doubled  
in real terms**



# A very large number of very small farmers



# These farmers are poor



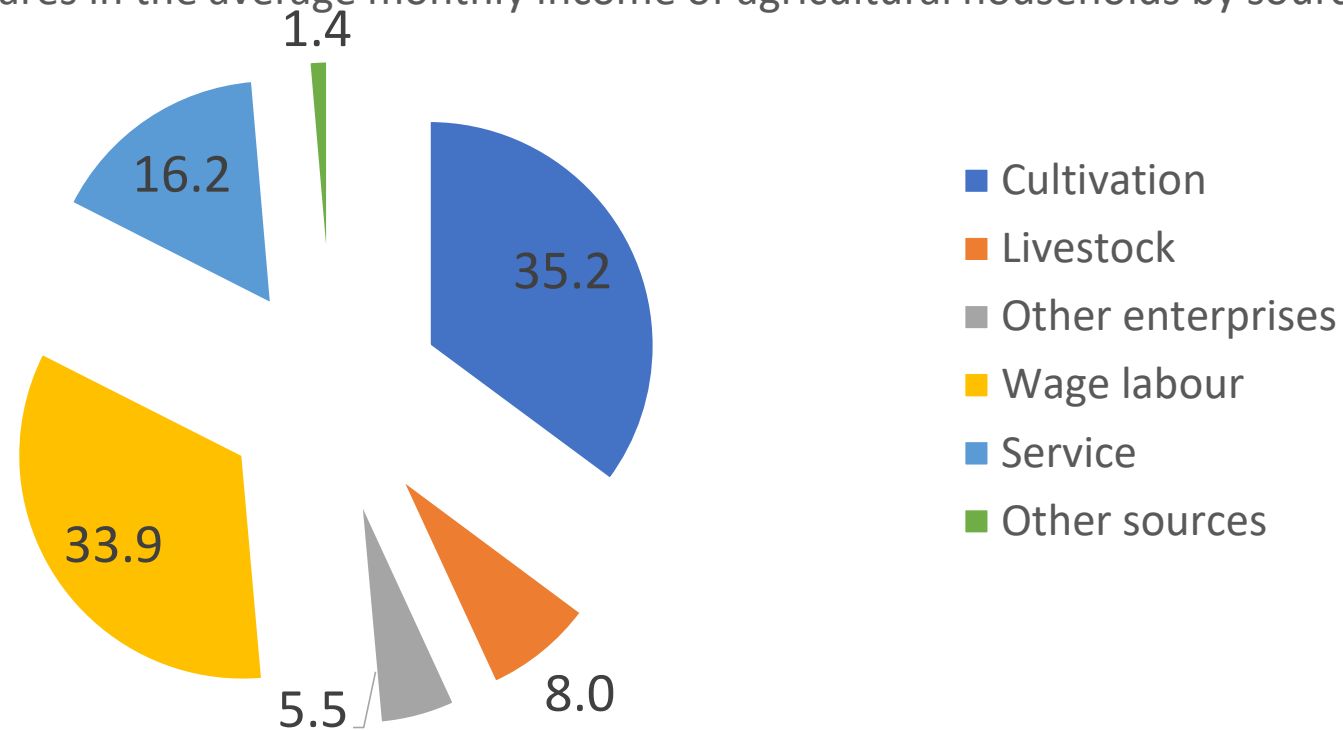
- Low purchasing power and small marketable surplus
- High transaction costs & low bargaining power in both input and output markets
- Also a challenge for both the businesses and the government

# Rising farm-non-farm inequality

- The gap between farm and non-farm incomes is growing
  - ~50% percent workforce in agriculture → 15-16% of GDP
- *“farms employed most of India’s people, but produced very little”*
  - Only 17% of the people who worked on farms survived only on money they made from their farm
    - Everyone else did some extra work
- The highest earning member of more than **90%** rural households earn less than a 4<sup>th</sup> grade government employee
- Inequality creates disaffection
  - Political leaders respond with populist subsidies
    - *directed to those who mobilize to demand them*

# Occupational diversification is happening

% Shares in the average monthly income of agricultural households by source

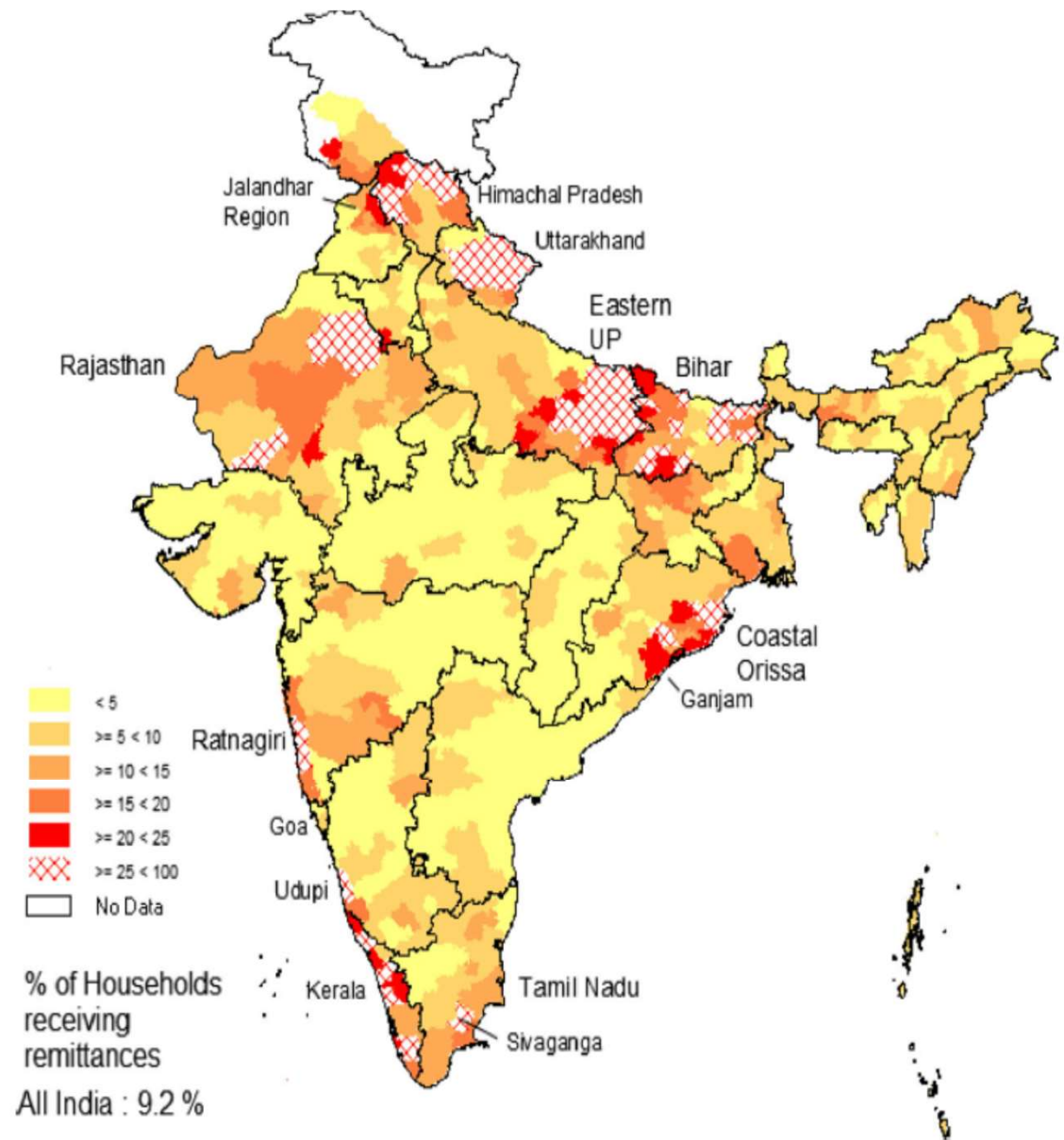


For marginal farmers: wage income > income from (crops + animal husbandry)



## Men migrate

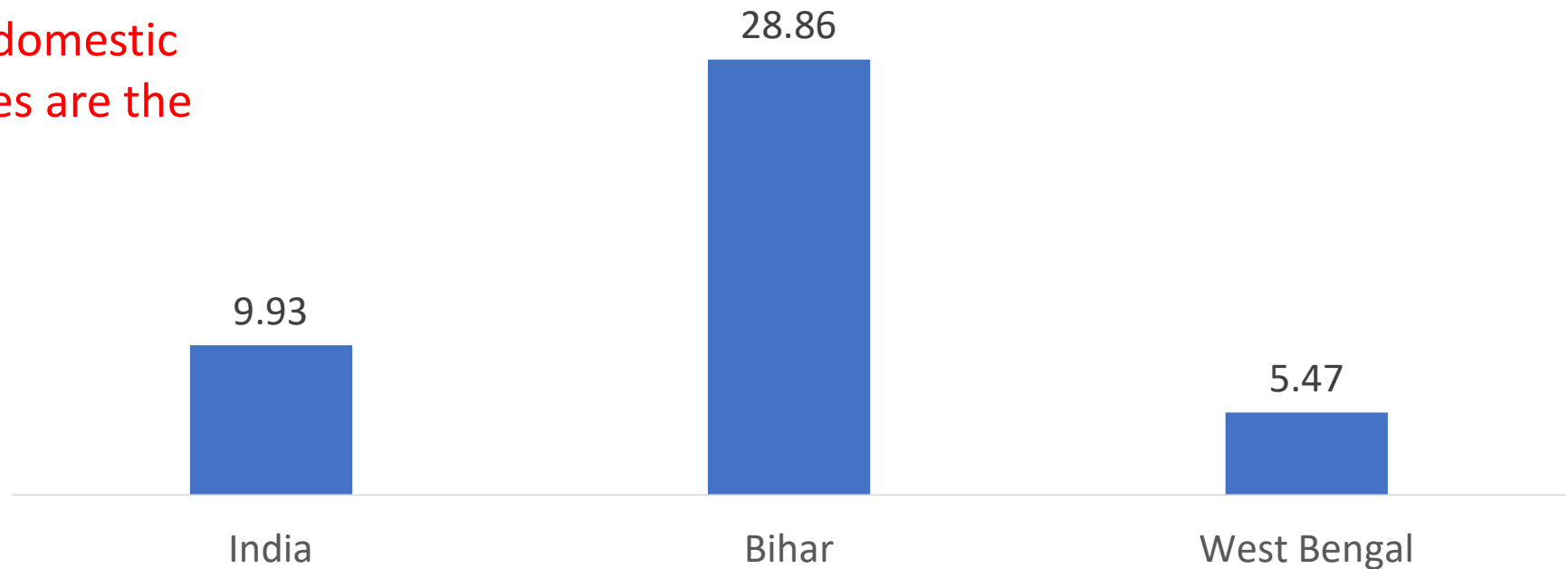
- 4.6% of the states NDP of Bihar in 2008
  - ~20-25% for Nepal
- 85% of total remittance in Bihar was inter-state, the highest in India
- Bengal has switched from a major recipient of migrants since the late nineteenth century to a net net source of it



## Men are migrating leaving women behind

- ~15% of migrant men work in agriculture
- Manual labour, domestic services and sales are the most common occupations

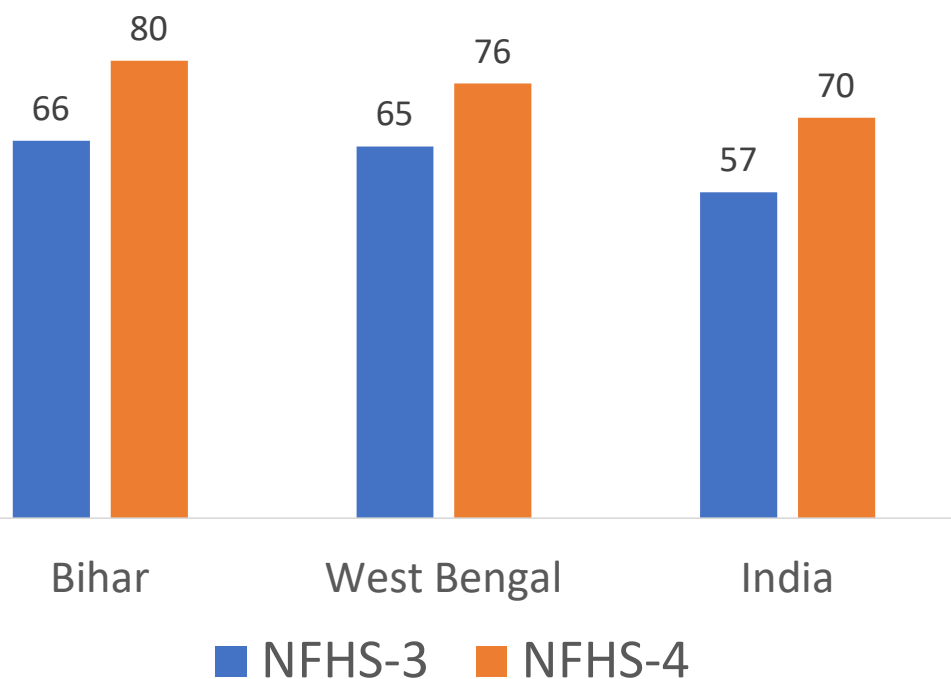
% of Married Women in Rural Areas whose Husbands are Not Living with them in 2015-16



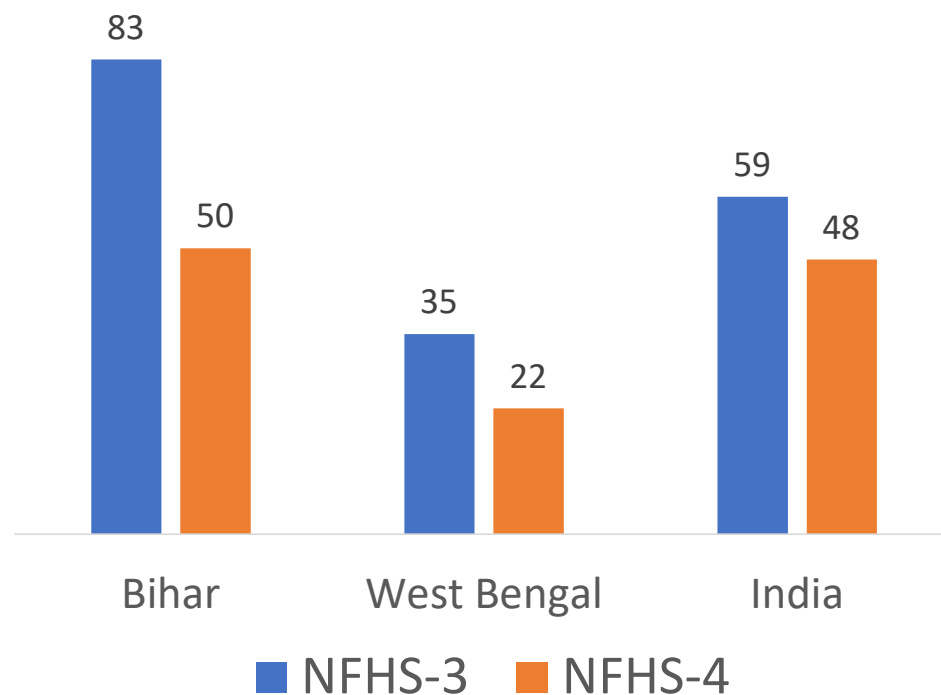
# Women are dropping from the labor market, especially, in Indian EGP

**\*Not necessarily true for Nepal/Bangladesh**

% of rural women **not** engaged in wage employment in 2005-06 and 2014-16



% of Wage Earning Women Engaged in Agriculture in 2005-06 and 2014-16



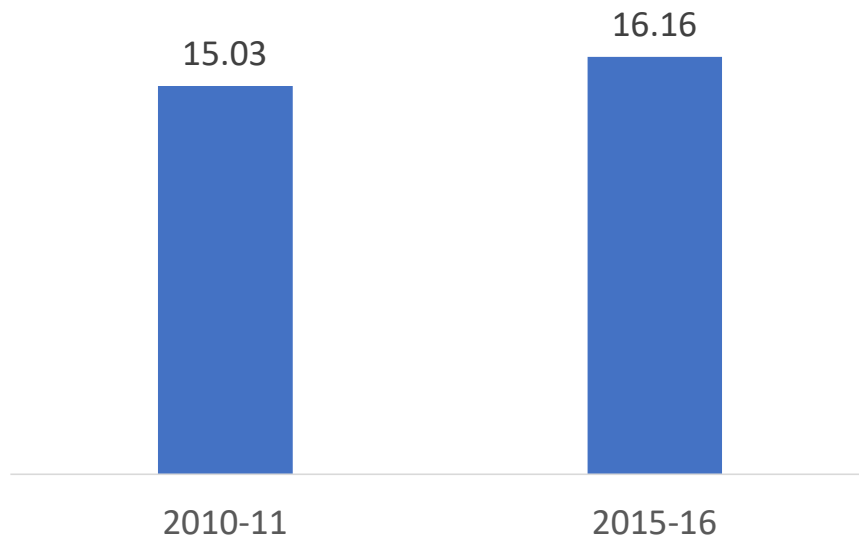
# Land consolidation is not happening

- Through the formal legal process or by informal land leasing
- Difficult to earn a living wage from such small holdings
  - But there is a dearth of secure jobs in the non-farm sector
    - Even for men
    - So, they hold on to land as anchor or the fallback option
- Are corporate farms the answer?
  - Unlikely
- Asia is different
  - China has less land and more farmers than India [0.6 ha vs. 1.08 ha]
  - Land consolidation not happening in China or Vietnam despite rapid industrial development
- **Need for better aggregation models**
  - Cooperative/Producer companies
  - Commodity clusters

# *The off-farm food economy is growing faster*

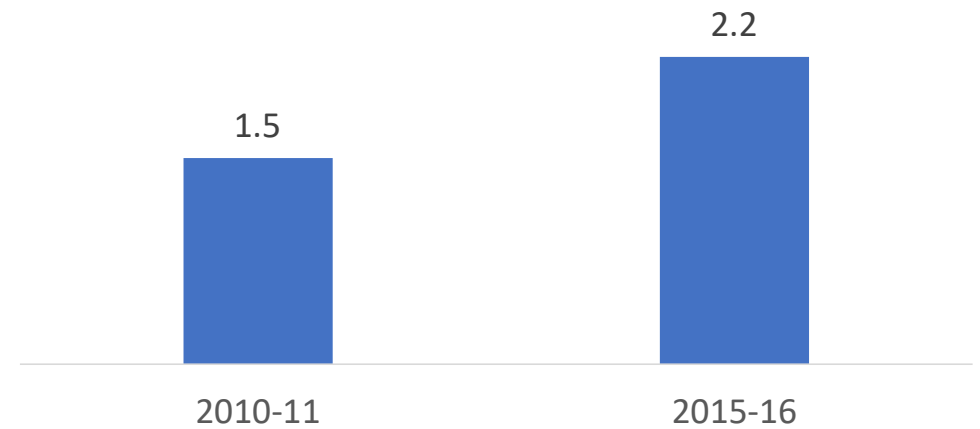
- From 2010-11 to 2015-16:
  - #FEs increased by 2.4 million (13%)
  - # workers employed increased by 4 million (12.9%)

Ag GDP (trillion Rs.) @ 2011-12 prices



**CAGR : 2.7%**

GVA of food enterprises (trillion Rupees) @ 2011-12 constant prices



**CAGR : 8%**

# Small firms and farmers dominate EGP's food economy

**150 million farmers  
+more farm laborers**



**95% earn < 10,000/month**



**21 million food enterprises**



- >90% firms have no employees
- 1/3<sup>rd</sup> earn < daily minimum wage

**Aggregation is  
a challenge**



**1.4 billion consumers**



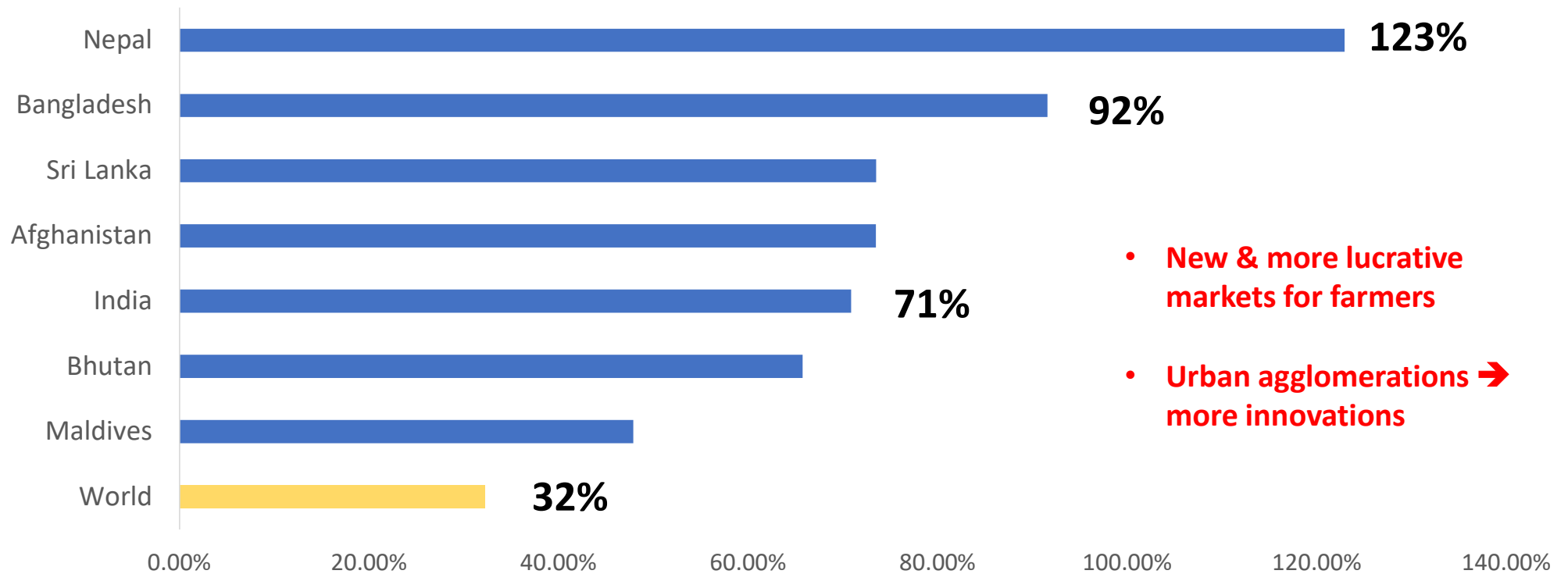
- Almost everyone earns <\$5/person/day
- >80% make <\$2/person/day

**Disaggregation  
is also a  
challenge**

**How do we regulate/govern a system with so many small-small informal players?**

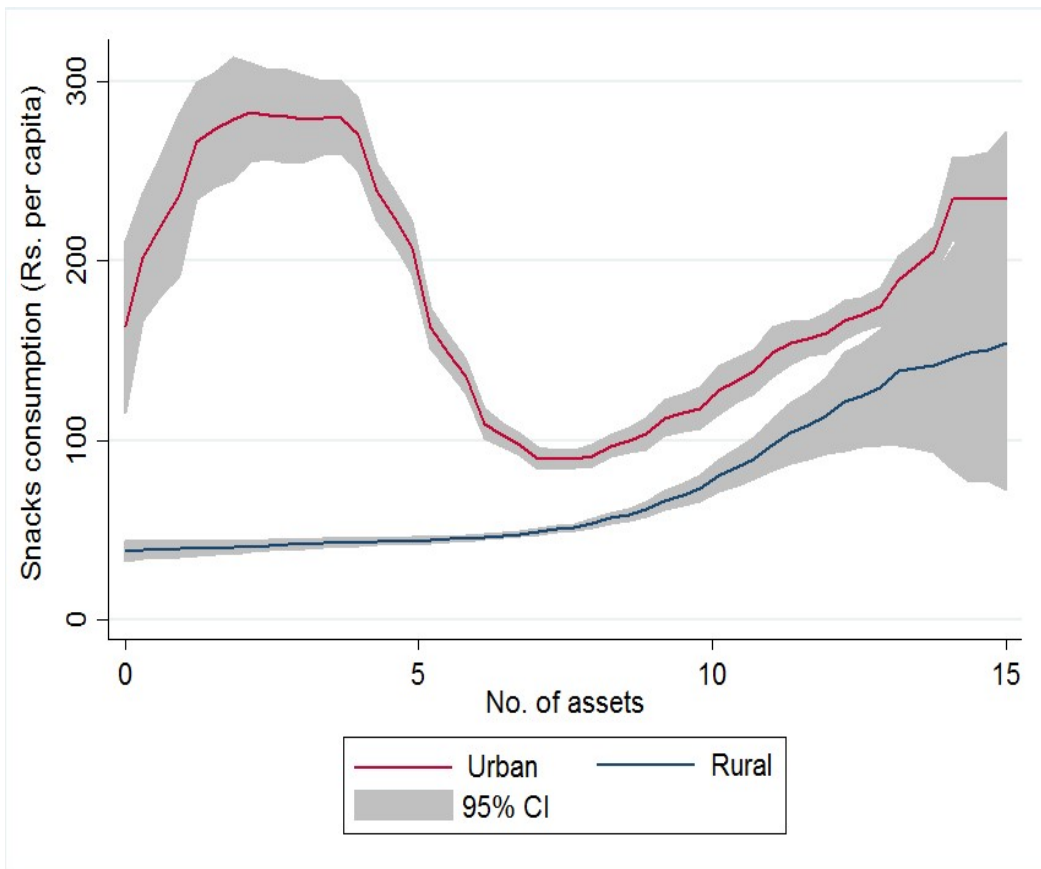
# EGP is Changing : Rapid Urbanization [not in Bihar]

Percentage point growth in urban populations between 2010 & 2050

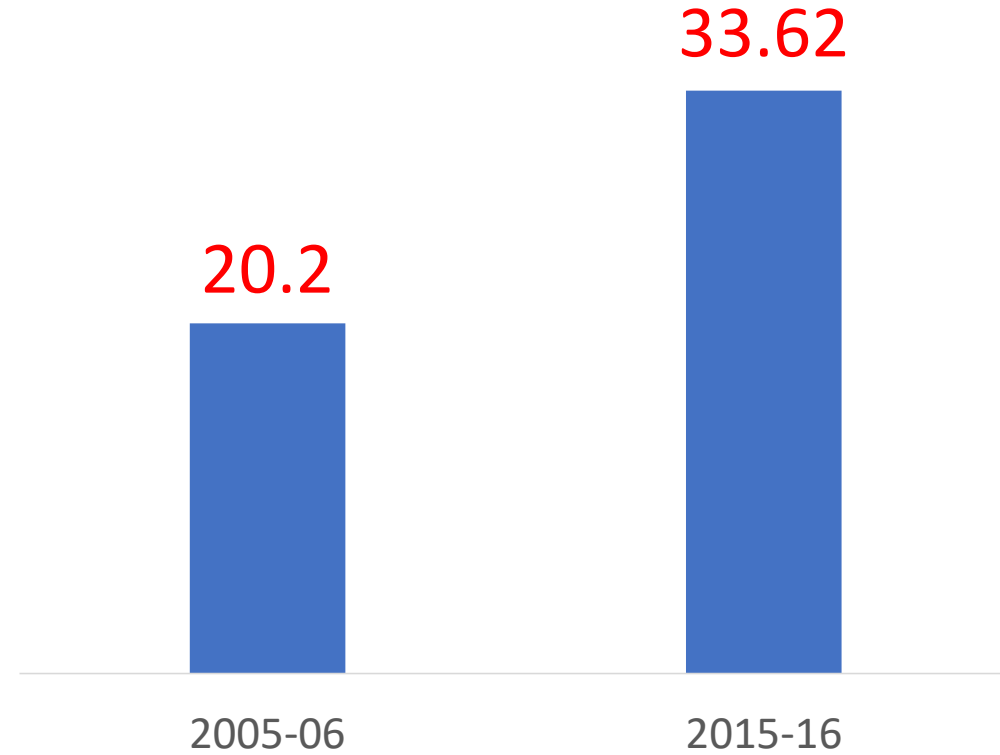


# EGP is Changing: Unhealthy Diets and Rising BMIs

Snacking is significantly higher in urban areas



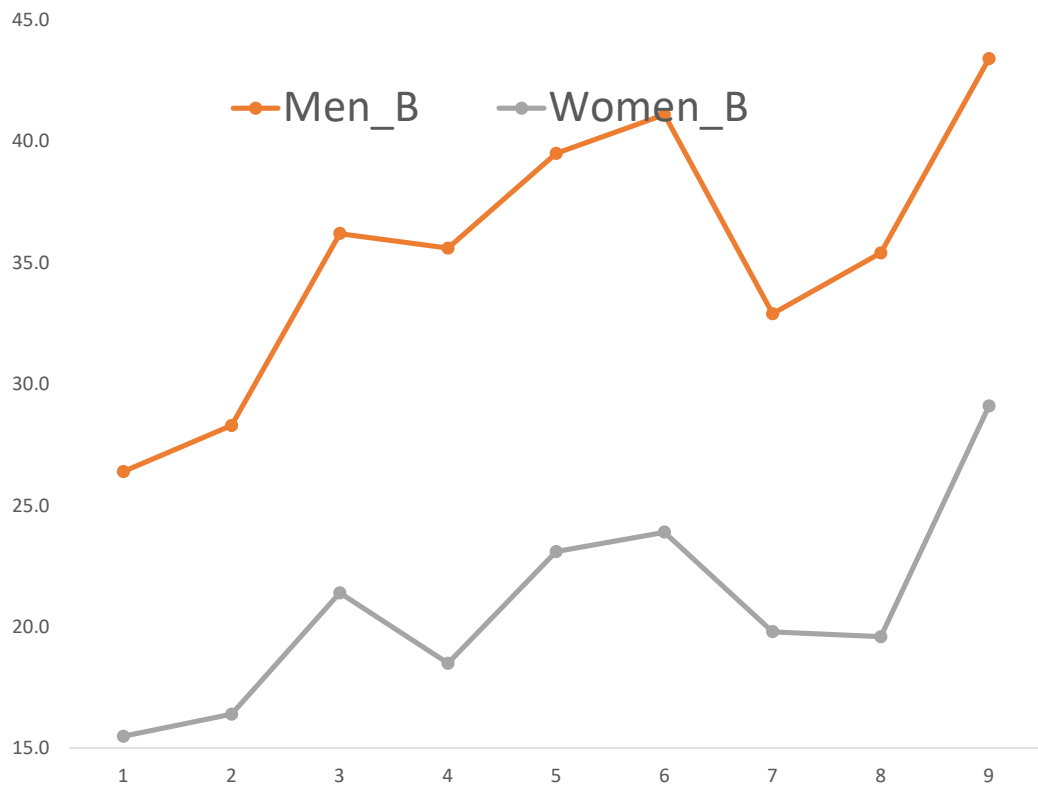
% Overweight Population in India



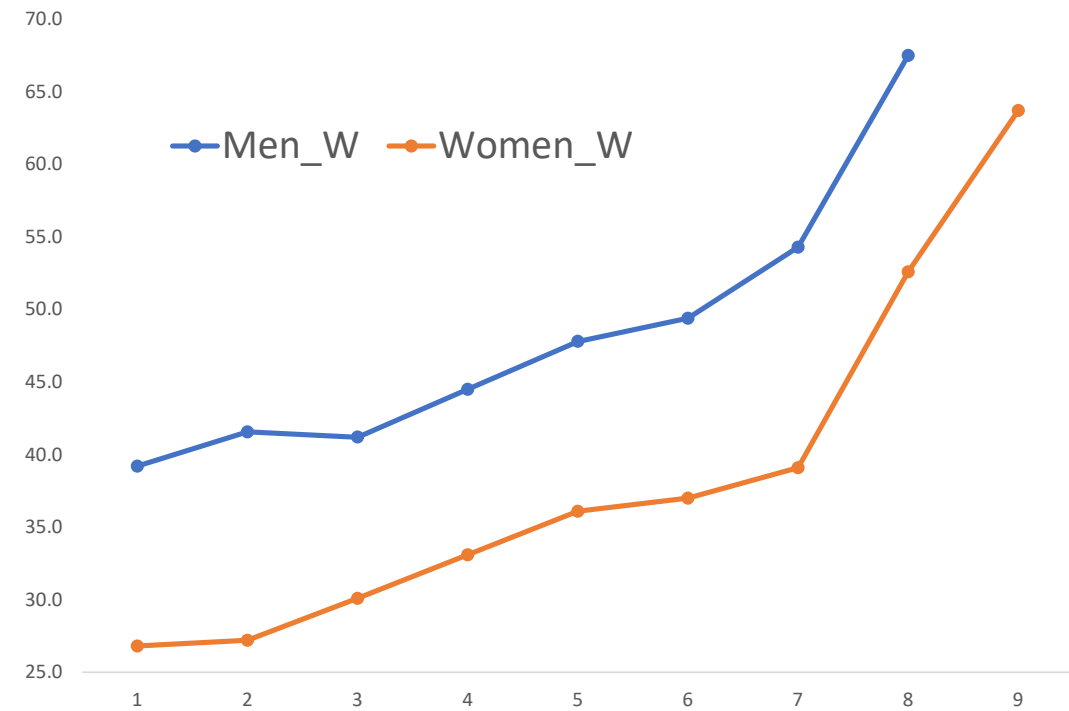


# Wages are even lower for women

Daily Wage Rates of Agricultural Labourers in Bihar

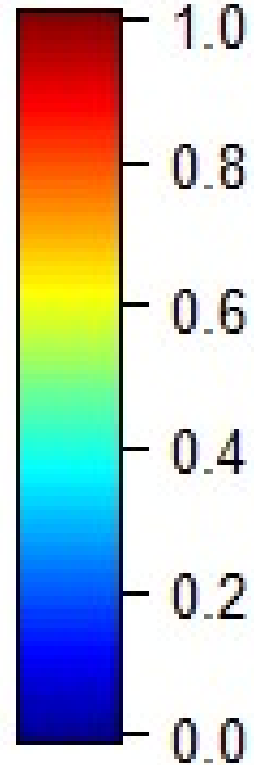
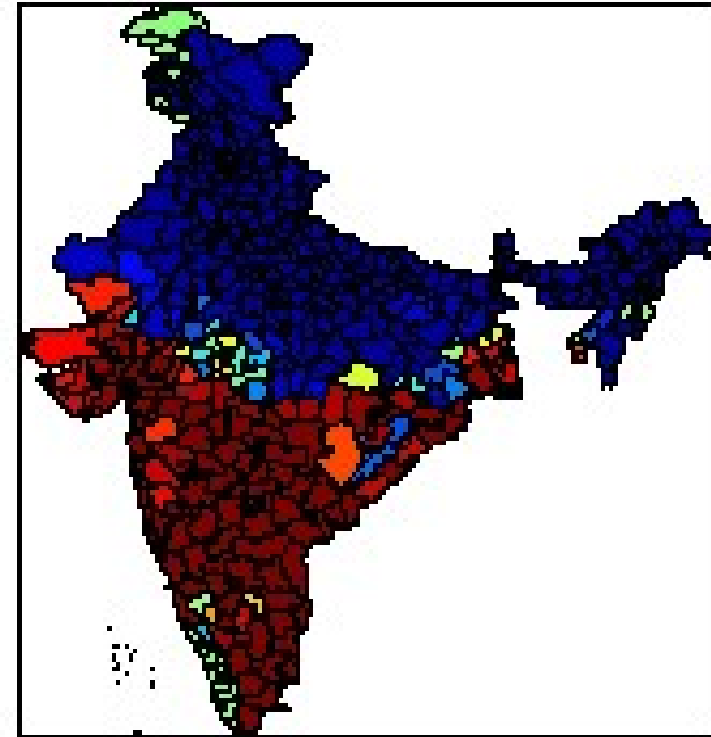
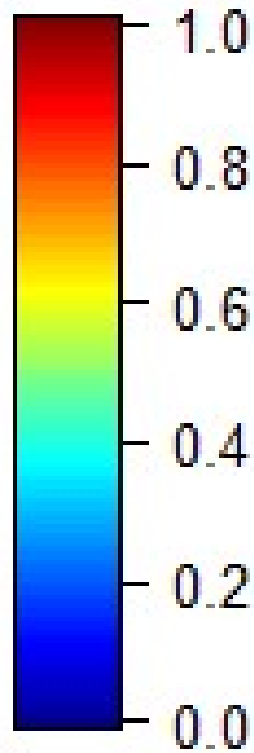
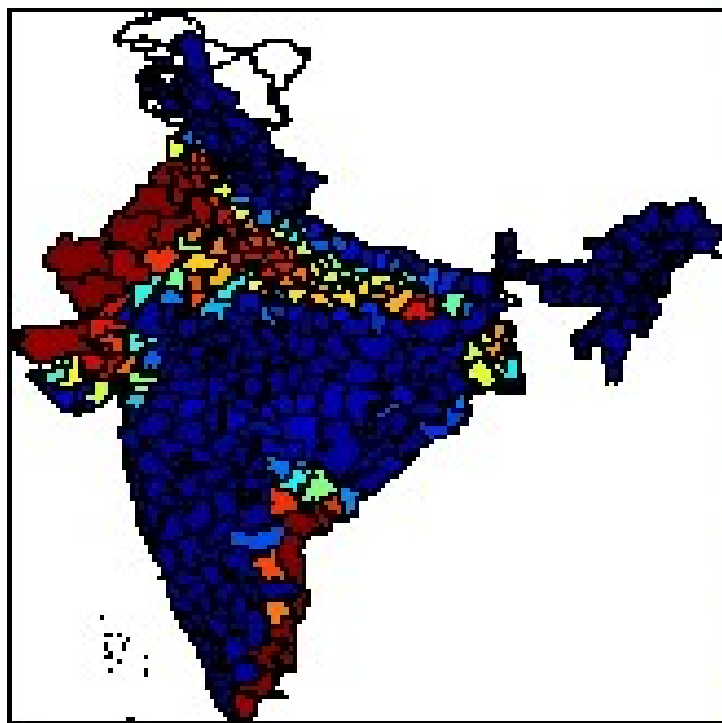


Daily wage rates of agricultural labourers in West Bengal

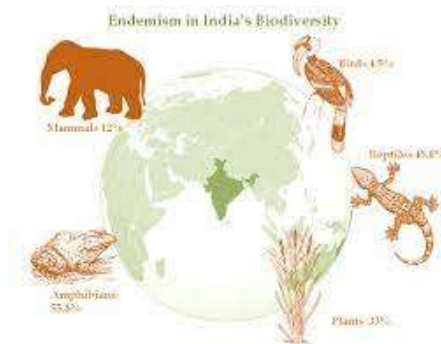
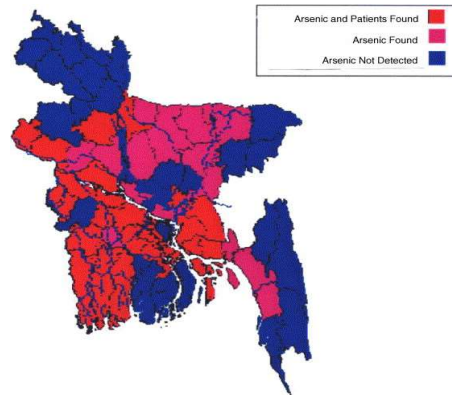


# The EGP region is highly vulnerable to climate change

**Median future probability of temperature being higher than the historical 90<sup>th</sup> percentile in Kharif and Rabi seasons**



# Ecological health



# The two defining challenges for agriculture in EGP

## Overcoming poverty and building resilience to climate change

- If agriculture remains unsustainable and vulnerable to CC : it will destroy lives and livelihoods
- If policies for climate resilience create barriers to poverty reduction: there will be little popular support for such policies

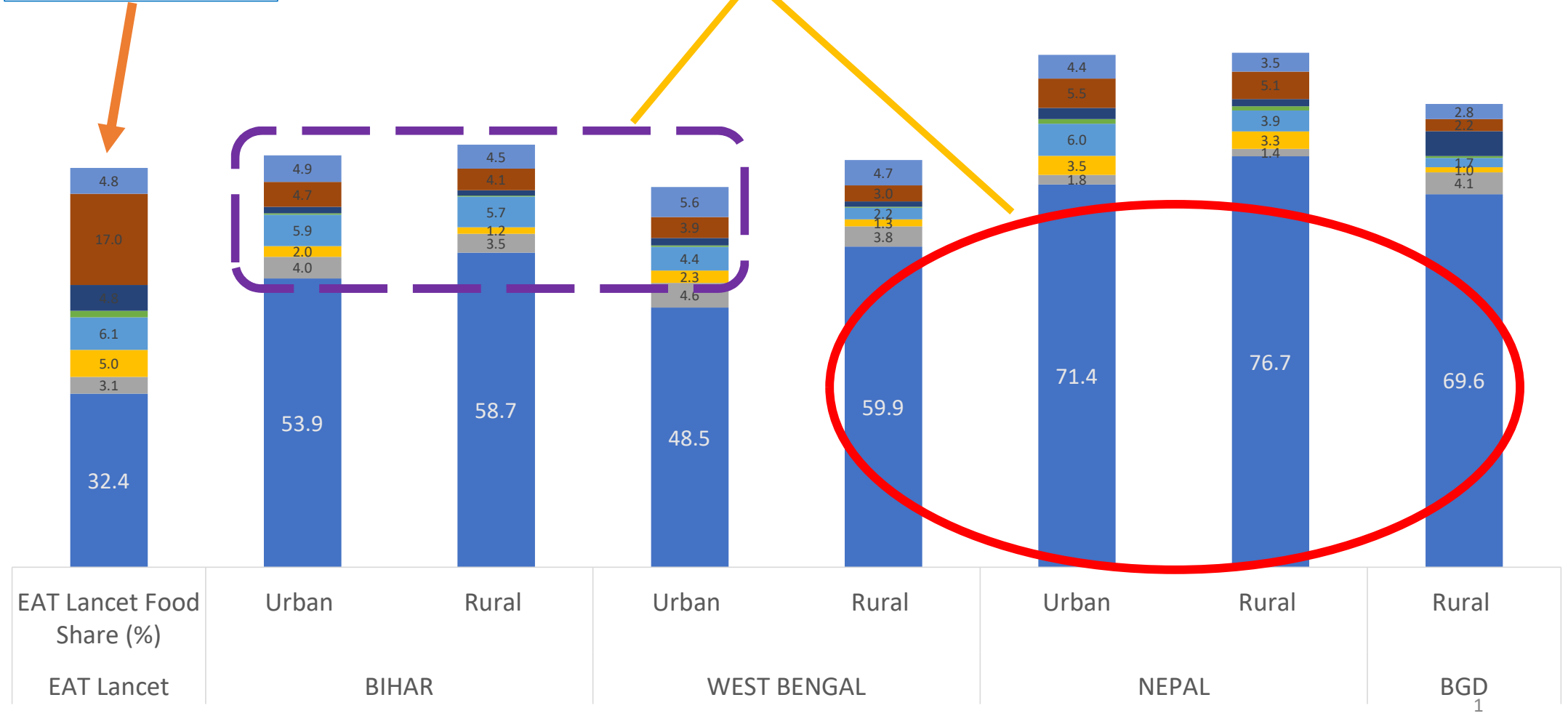
**If we fail on one, we fail on the other**

**More opportunities for double dividends than tradeoffs in EGP**

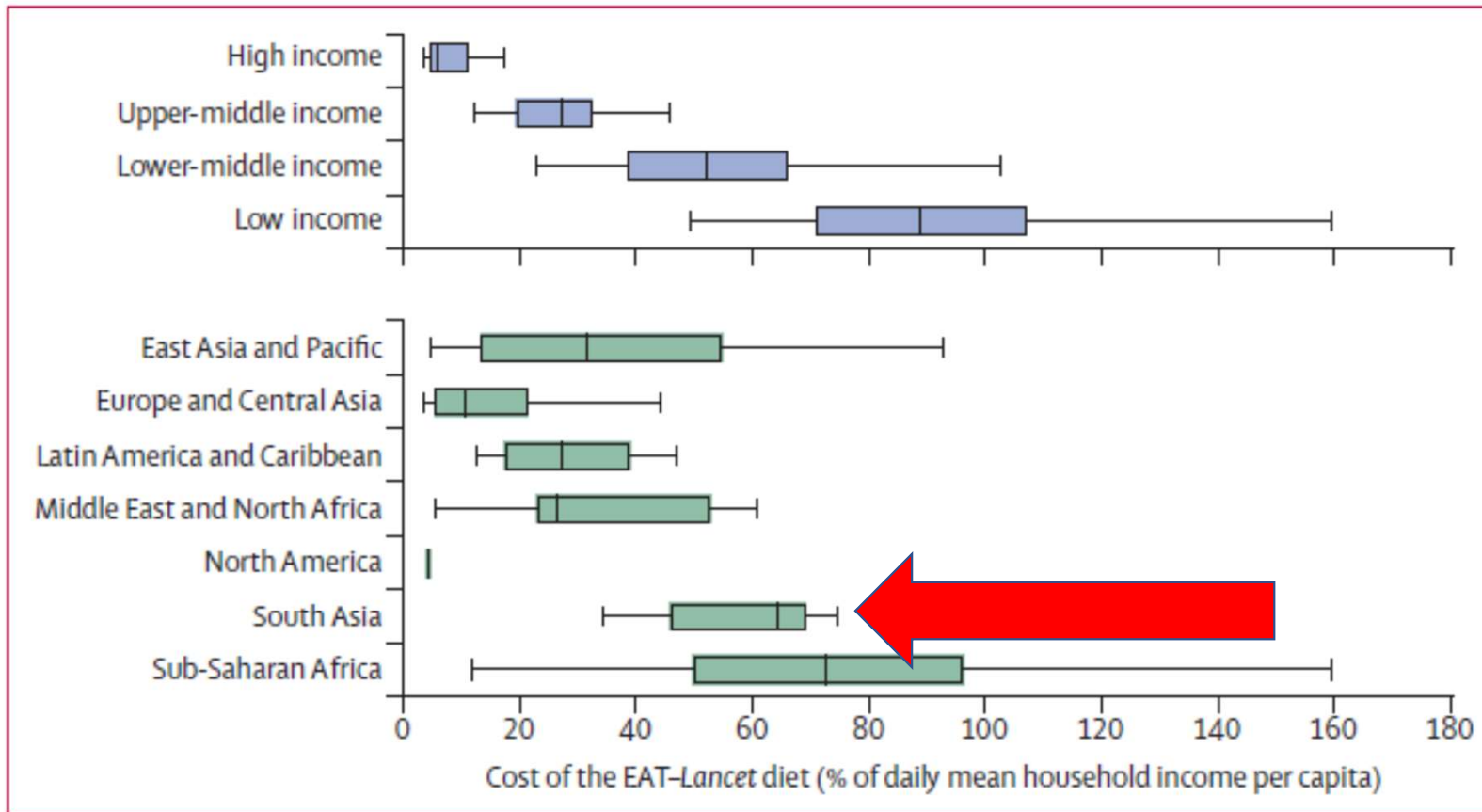
# Unhealthy Diets

The recommended diet

What we eat



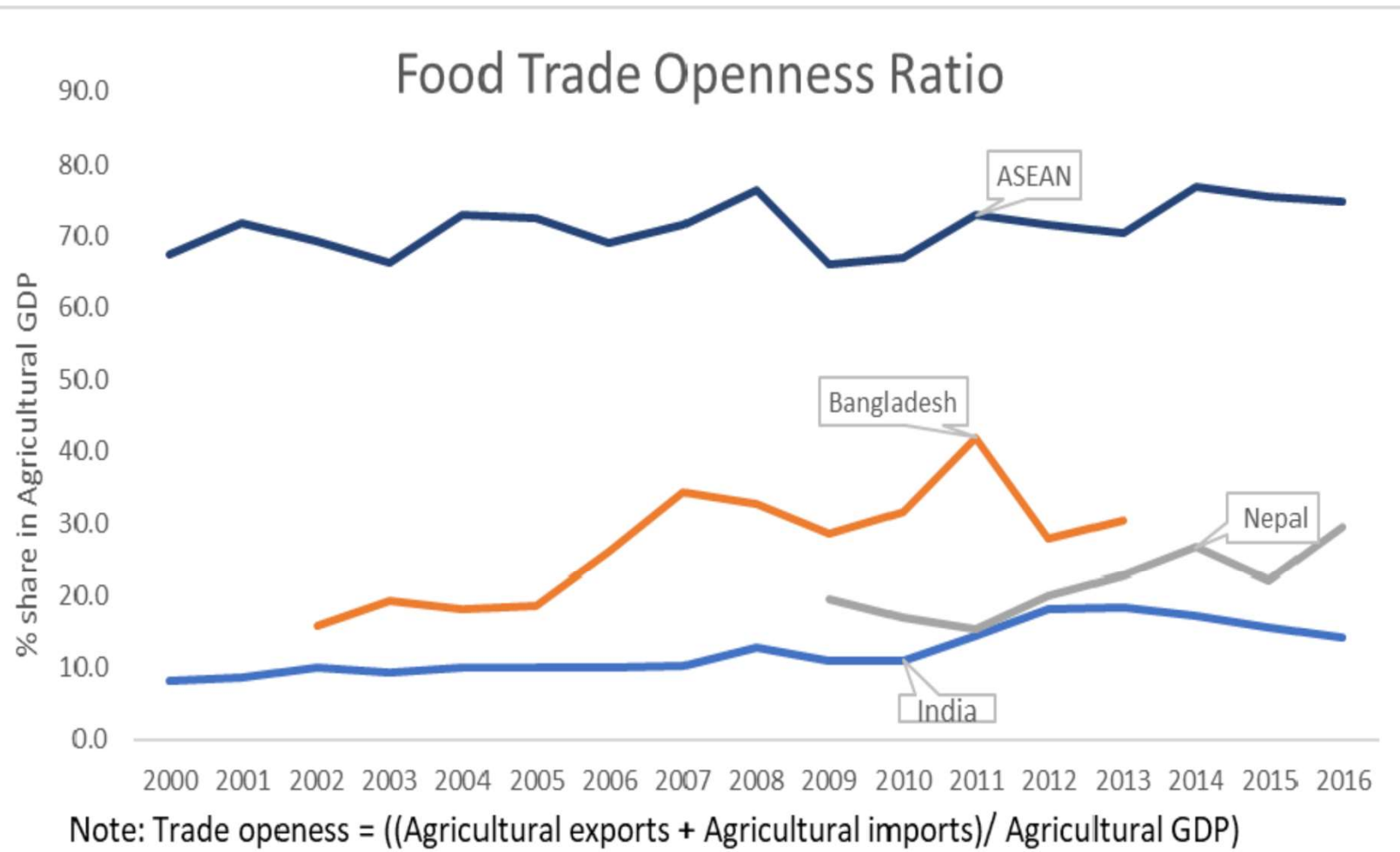
# Most S. Asians cannot afford a healthy diet



**“And poor people care a lot about purchasing cheap calories” (Headey and Alderman, 2019)**

**Figure 2: Cost of the EAT-Lancet reference diet relative to mean daily per capita household income by country income levels and major regions**

Limiting food trade is a major policy tool India uses to keep prices low

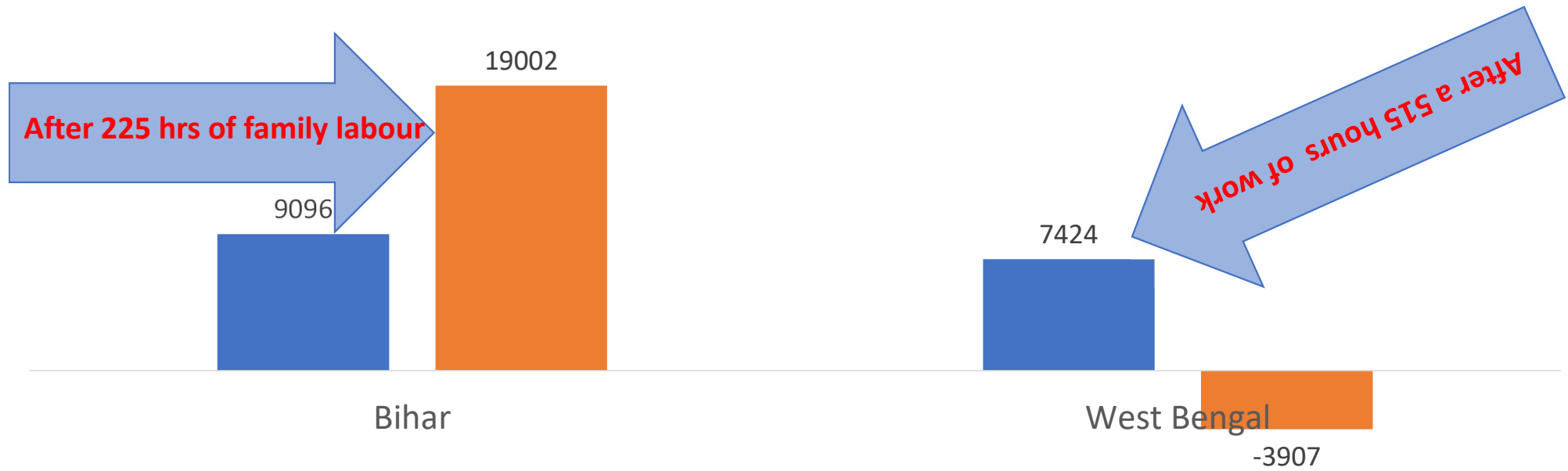


South Asia is the least integrated region in the world

Lack of trade openness hurts both farmers and consumers

# Rice-wheat agriculture is not profitable

Operational Profits (Rs/ha) from Rice and Wheat in 2015-16



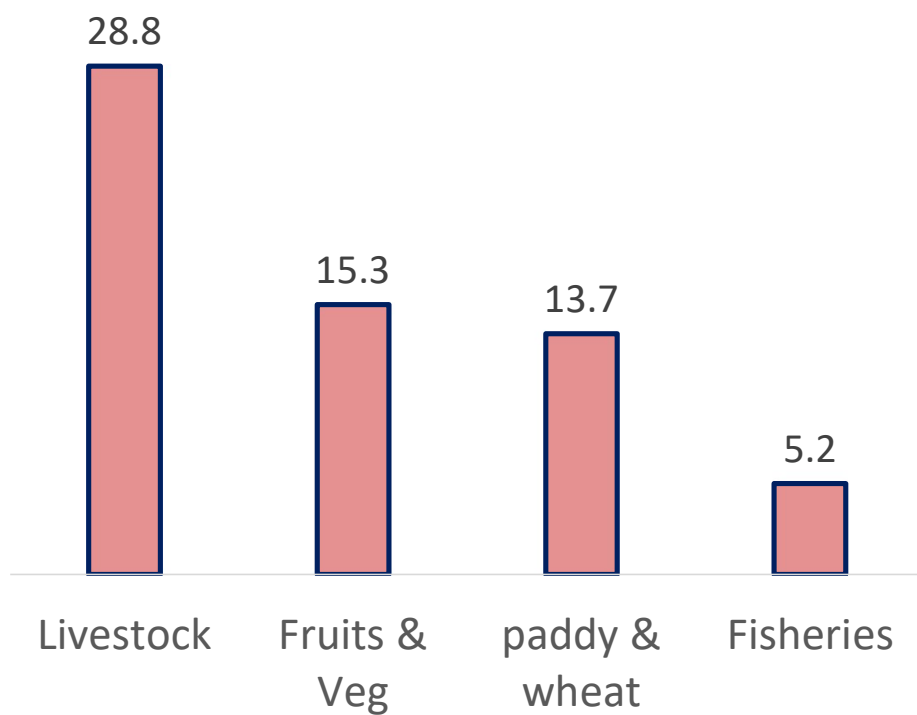
**It is not employment intensive either**

■ Rice ■ Wheat

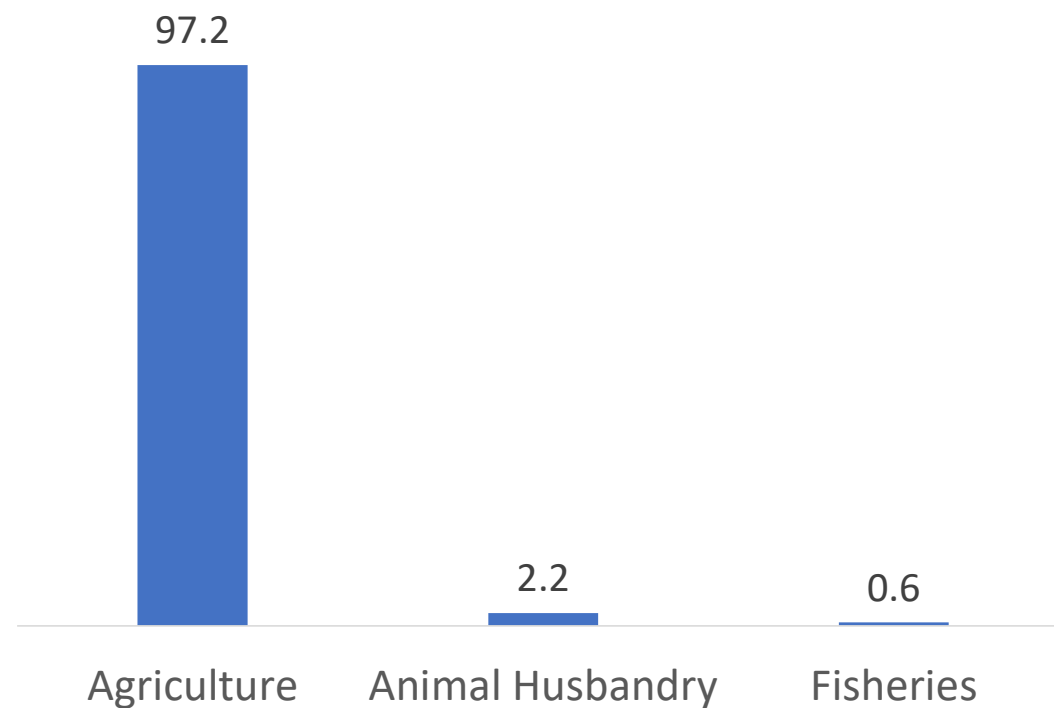


# The mismatch between policy attention and the value

% Share of food groups in the total value of agricultural output



% Share of the budget allocation in 2019-20



# Some lessons from nutrition transitions in other countries

- As economies develop, food systems get better at providing healthier foods cheaply
  - Relative calorie price of milk is 1.59 in the US, 2.77 in India and 17.91 in Niger
- But economic development also makes unhealthy calories cheaper
  - Resulting in rapid increase in the consumption of calorie dense foods
- Nutrient dense foods often have low calorie density, high perishability and higher prices
  - Need for R&D to increase productivity of healthy foods, investment in markets and infrastructure, and improvement in the business environment

# Question

- How do we make crop diversification more attractive to farmers?
  - High volatility in prices of nutrition dense foods is a major challenge
    - For both perishable and non-perishable commodities

THANKS!

