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Doubling Farmers' Income in Bihar: Role of integrated farm and non-farm systems

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The Context

- Decelerating returns from farming
- Input and output price support (subsidies and MSP) have helped only to some extent
- Terms of trade to agriculture (relative prices) have not been favourable, except in a few years since 2005-06 (policy bias against agriculture)
- Shrinking land size (85% < 2 ha ; 73% < 1ha) (NSSO-AIDIS)
- Large inter-state and intra-state disparities in income and asset formation (farm size, social groups, gender, tenants)
- Persisting discontent among farmers
- GOI (2016) set up a committee on doubling of farmers income by 2022-23, keeping 2015-16 as the base year
- Increase in income at real price and from all the sources

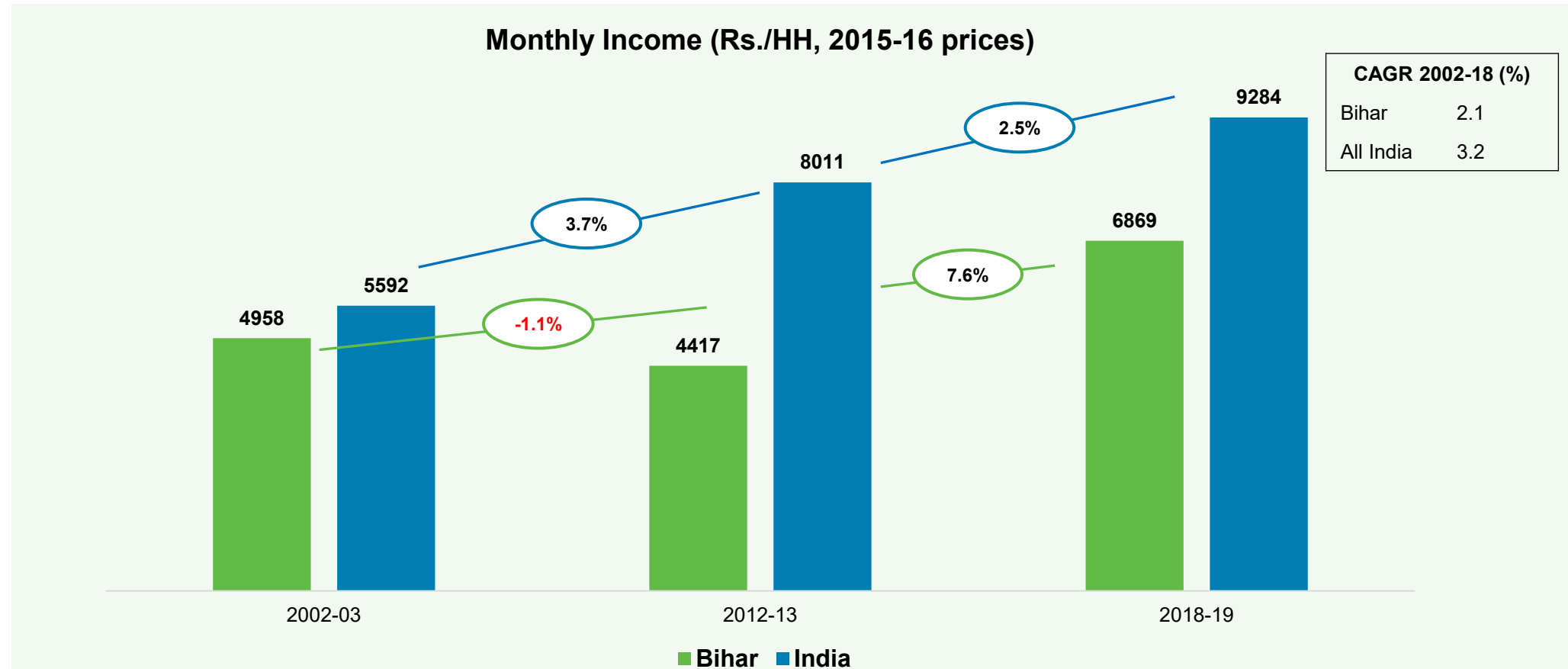
Recommendations of the GoI-DFI Committee (2017)

1. Estimated a **BAU Scenario** based on the historical rate of growth in farmers income from all sources ; extrapolated to the target year - 2022-23
2. Estimated **Accelerated Growth Scenario** based on seven sources of income growth on presumption that states would intervene:
 - Improvement in crop productivity; livestock productivity; resource-use efficiency or saving in cost of production; cropping intensity; diversification towards high-value crops; real prices received by farmers; and shift from farm to non-farm occupations
 - Set a 10% growth target in farmers income per year
3. **Other Major Suggestions:**
 - Technological innovations for higher farm productivity
 - Efficient marketing of output for remunerative prices, including value chain/FPOs/Contract F.
 - Introducing digital farm services/digital platforms and technological innovations to cope up with climate and price risks

Key Government Initiatives

- Sensitization of states towards this target and initiating suggested measures
- Creation of e-NAM, Agricultural Produce and Livestock (Promotion and Facilitation) Model Act 2017, intensification of budgetary allocations for schemes like PM Krishi Sinchai Yojna, institutional credit, soil health cards, neem coated urea etc.
- PM KISAN , Rythu Bandhu Scheme and so on...; Subsidies on inputs
- Bringing efficiency in input use through micro irrigation, solar panels, cash incentives on saving energy
- Increase in public outlays, institutional credit to raise investments, startups, drones (digital farming – information systems)
- Initiation of three farm laws (2020) to improve marketing/price efficiency followed by their repeal.
-  Hike in the MSP for cereals, pulses, millets, and oilseeds and increase in the procurement of foodgrains under the centralized and decentralized procurement policy; increase in coverage of farmers.
-  Bhavantar Bhugtan Yojana (Madhya Pradesh) and Bhavantar Bharpai Yojana (Haryana): to compensate farmers for the difference in the official MSP and the market rate at which they sell their produce.

Bihar v/s India: trends in the monthly net income of agricultural households from all sources

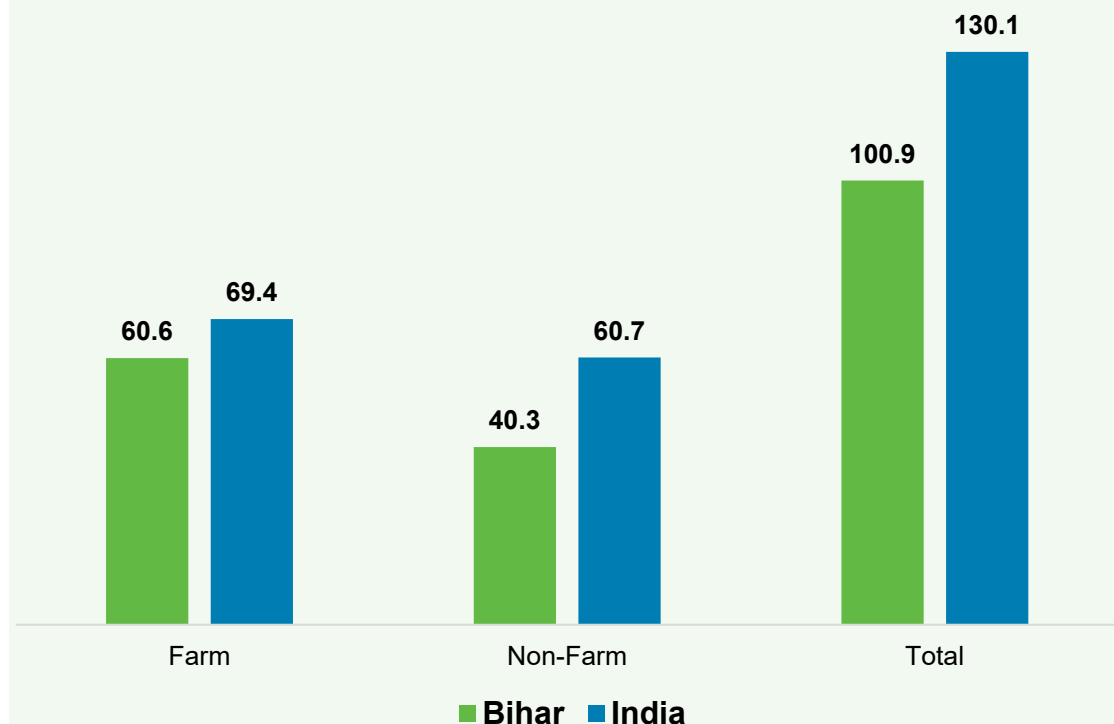


Source: Authors' estimates based on various rounds of NSSO SAS

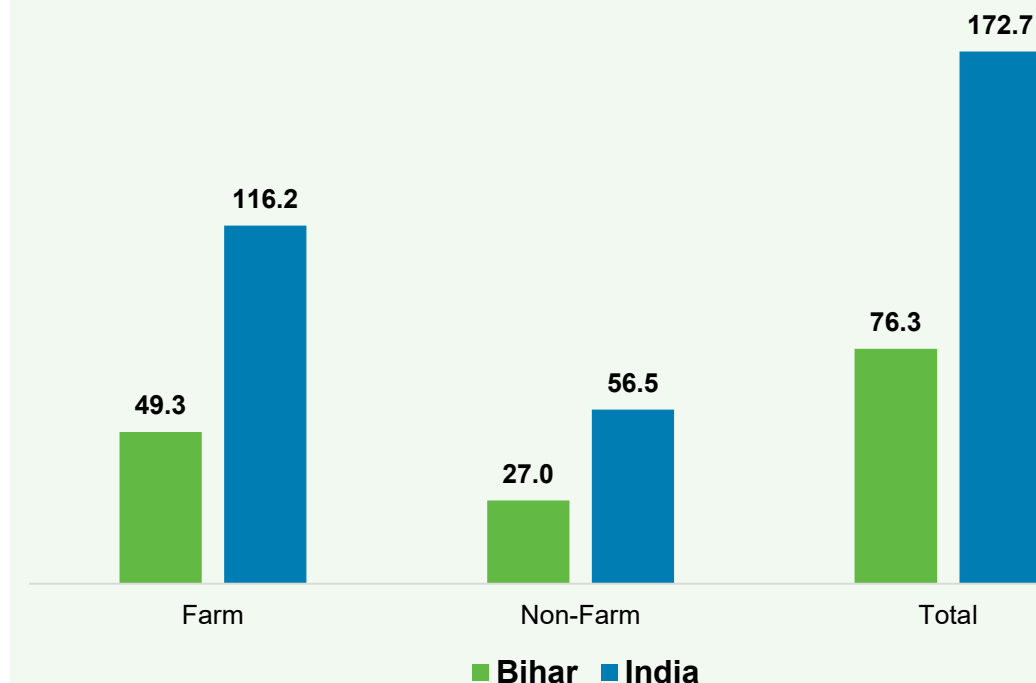
Monthly income for agricultural households in Bihar grew at a slower pace than the national average between 2002-03 and 2018-19.

Bihar v/s India: annual estimated and target incomes of agricultural households in 2022-23

Estimated Income ('000 Rs./HH, 2015-16 prices)



Target Income ('000 Rs./HH, 2015-16 prices)

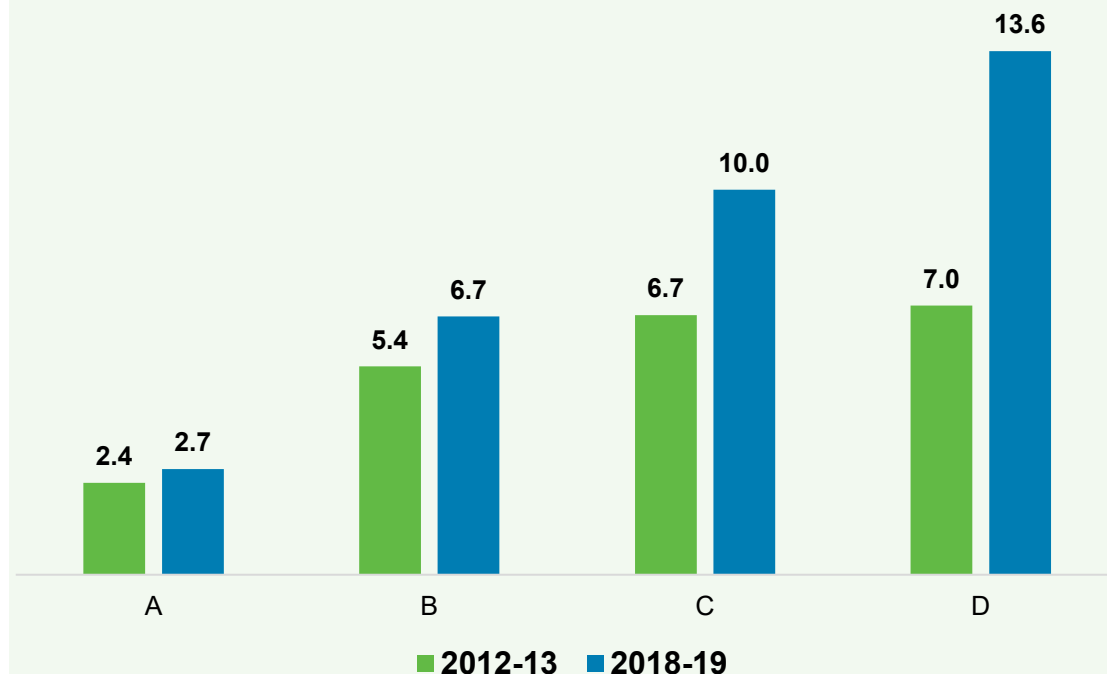


Source: Authors' estimates based on various rounds of NSSO SAS

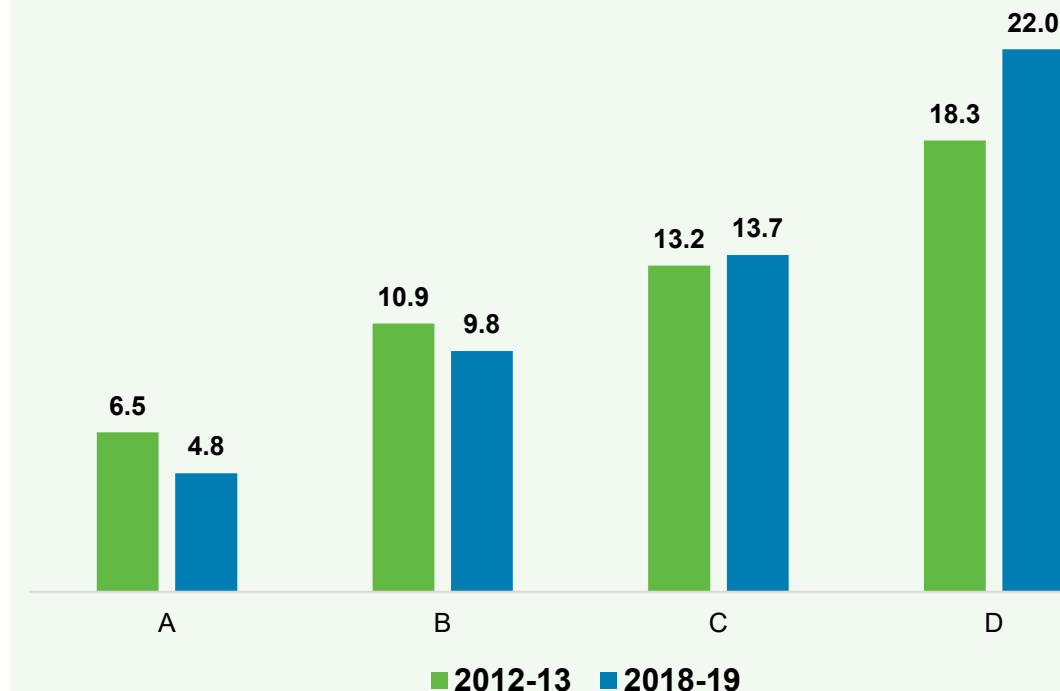
Bihar is projected to achieve the DFI target in 2022–23, with estimated annual income approximately 32% above the target level.

How integrated farming/non-farming system can help?

Annual Income ('000 Rs./capita/year, Bihar)



Annual Income ('000 Rs./capita/year, India)



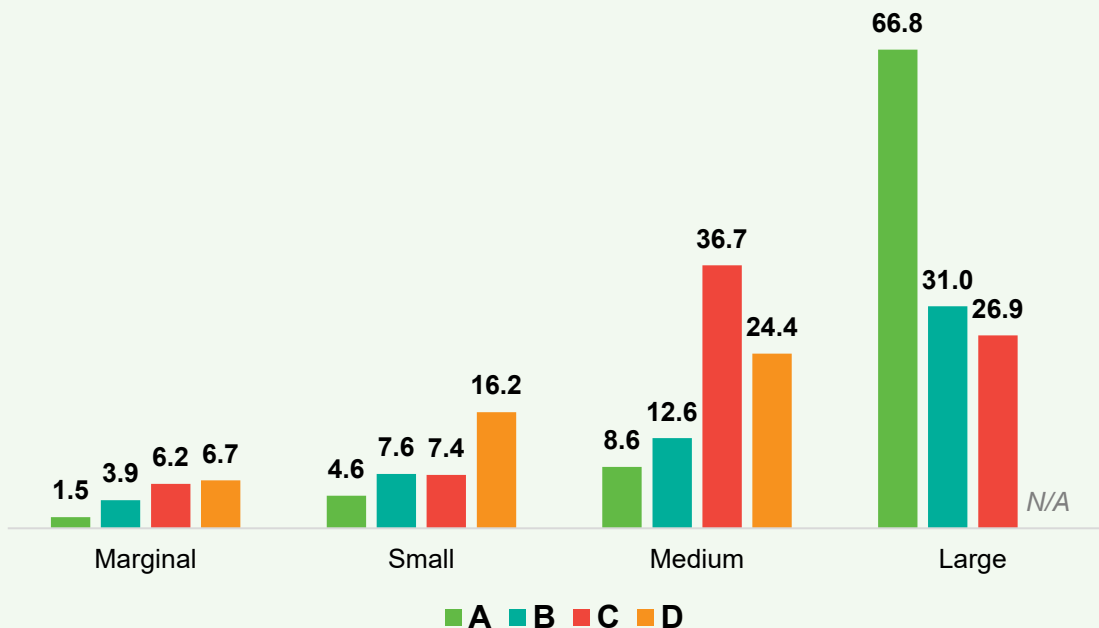
Source: Authors' estimates based on various rounds of NSSO SAS

Integrated farming drove higher income gains in Bihar than India, particularly for farmers engaged in both farm and non-farm activities.

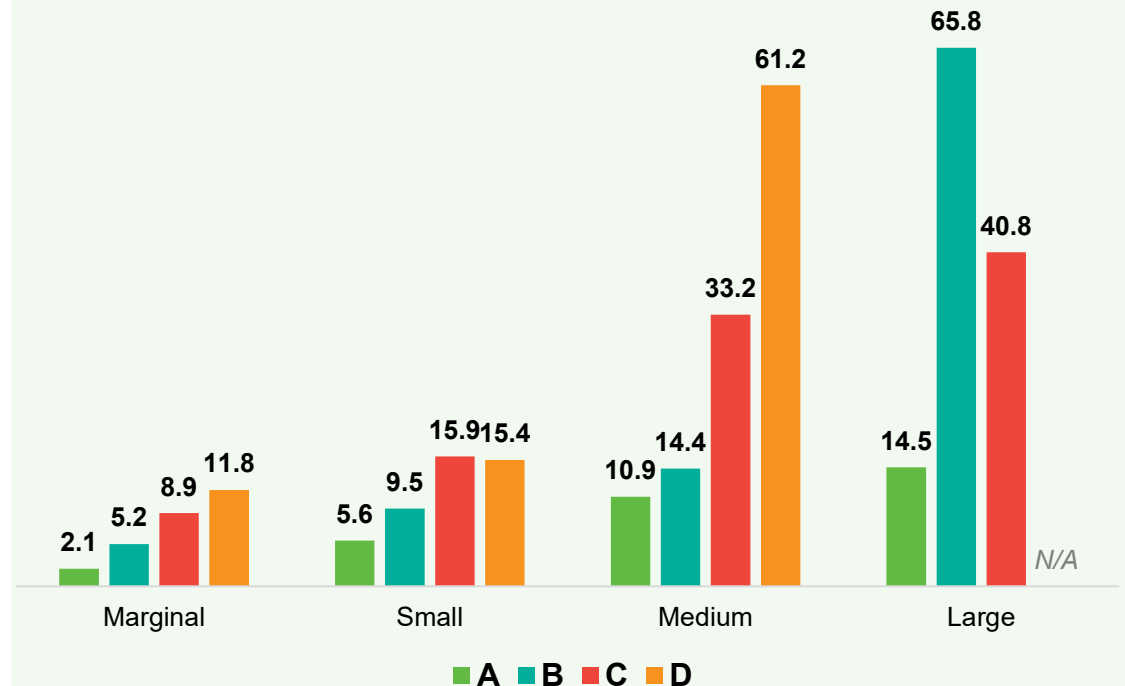
Note: A= Average Monthly Farmers' Income of those who are only involved in crop cultivation, B= Average Monthly Farmers' Income of those who are engaged in crop cultivation & livestock rearing, C= Average Monthly Farmers' Income of those who are engaged in crop cultivation, livestock rearing & wages/salaries, D= Average Monthly Farmers' Income of those who are engaged in crop cultivation, livestock rearing, wages/salaries & non-farm businesses.

How integrated farming/non-farming system can increase farmer's income in Bihar?

Agricultural households incomes across different categories of farmers, 2012-13 ('000 Rs/capita/year)



Agricultural households incomes across different categories of farmers, 2018-19 ('000 Rs/capita/year)



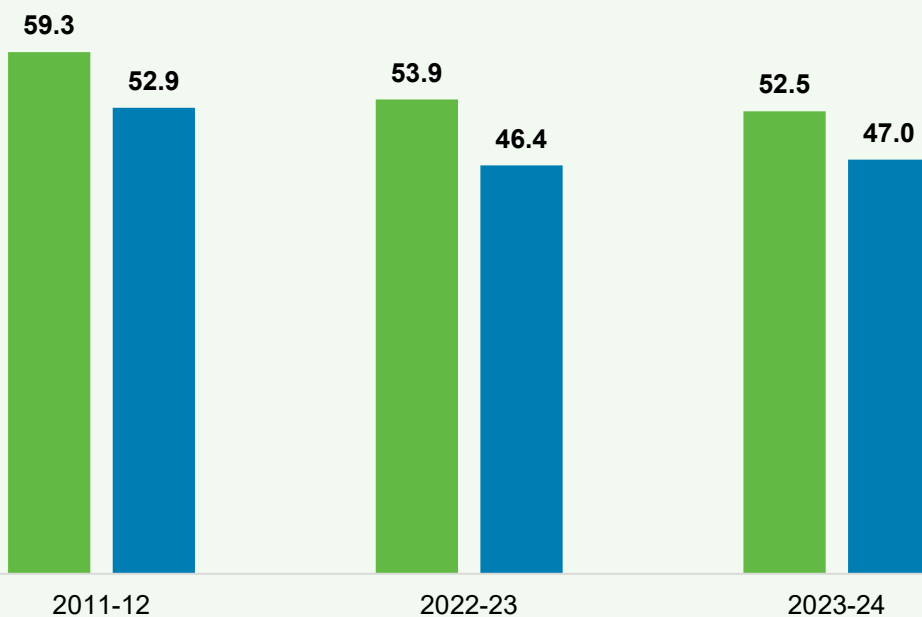
Source: Authors' estimates based on various rounds of NSSO SAS

Farmers with diversified farm and non-farm activities earn higher income across all land sizes, highlighting the importance of income diversification.

Note: A= Average Monthly Farmers' Income of those who are only involved in crop cultivation, B= Average Monthly Farmers' Income of those who are engaged in crop cultivation & livestock rearing, C= Average Monthly Farmers' Income of those who are engaged in crop cultivation, livestock rearing & wages/salaries, D= Average Monthly Farmers' Income of those who are engaged in crop cultivation, livestock rearing, wages/salaries & non-farm businesses.

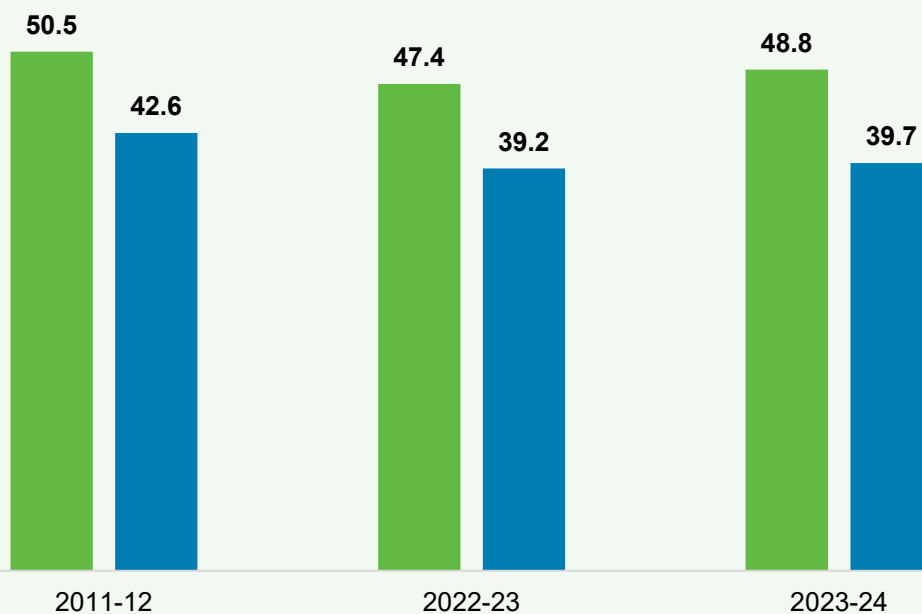
Bihar v/s India: trends in the share of food expenditure in MPCE

Share of food in MPCE (% , Rural)



■ Bihar ■ India

Share of food in MPCE (% , Urban)



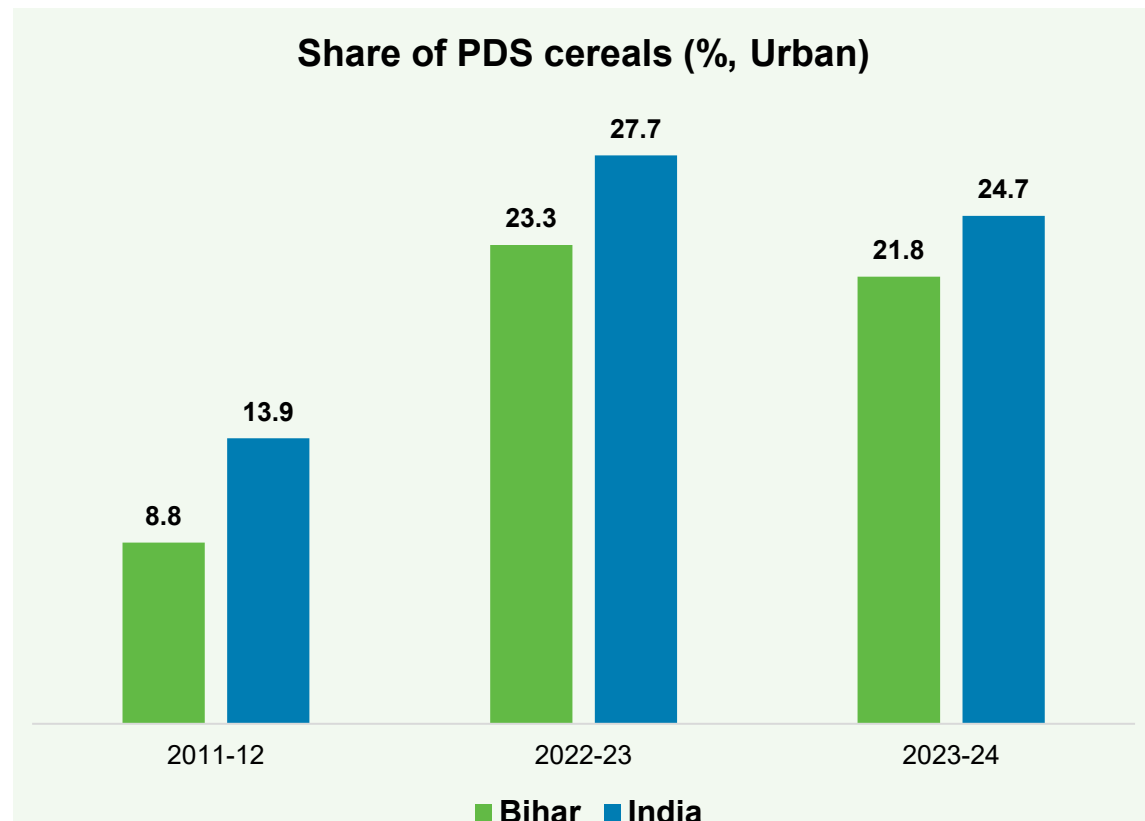
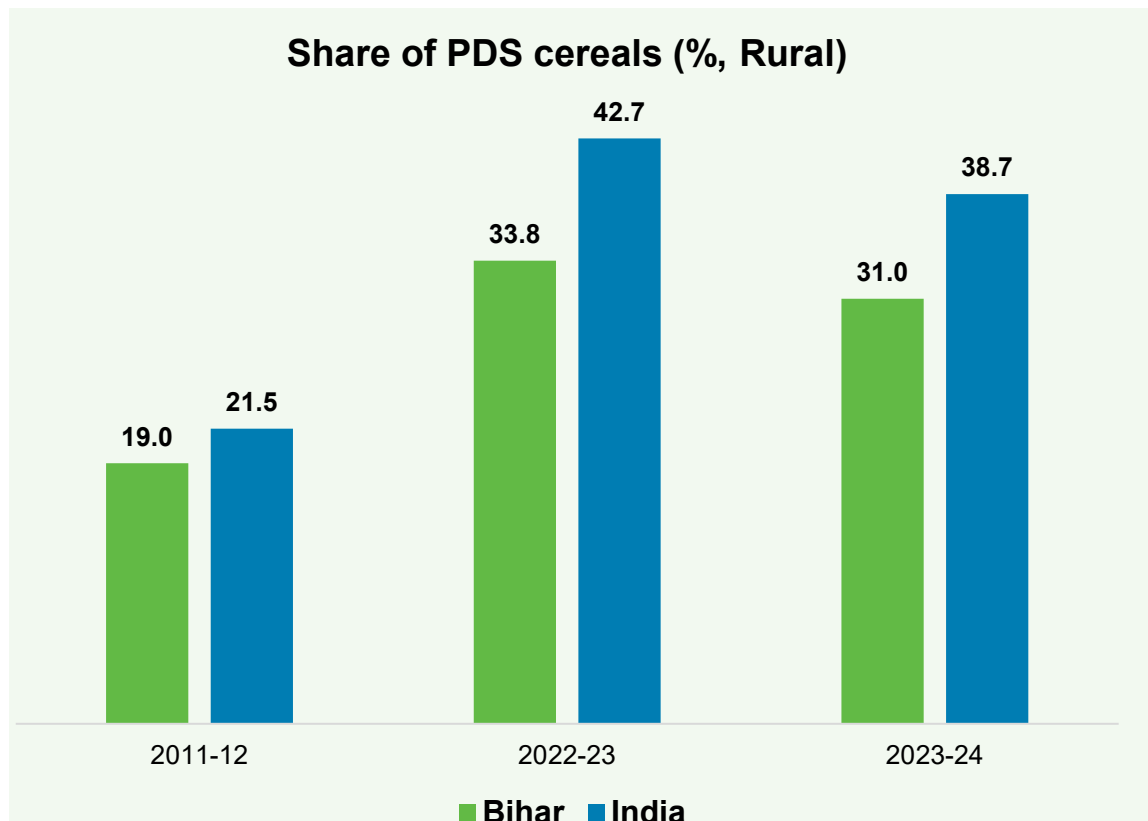
■ Bihar ■ India

Source: Authors' estimates based on unit level data from NSSO surveys



Bihar's slower decline in food share of MPCE indicates a higher food expenditure burden than the national average.

Bihar v/s India: trends in the contribution of PDS in cereal consumption

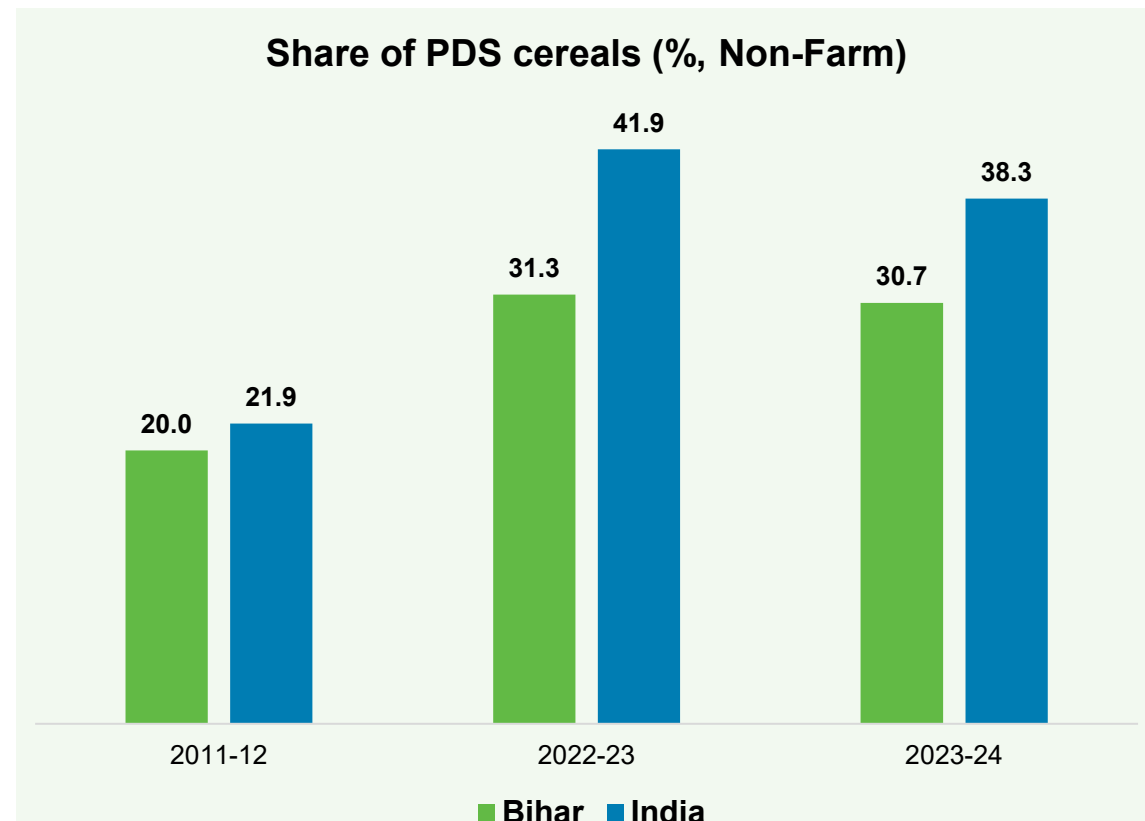
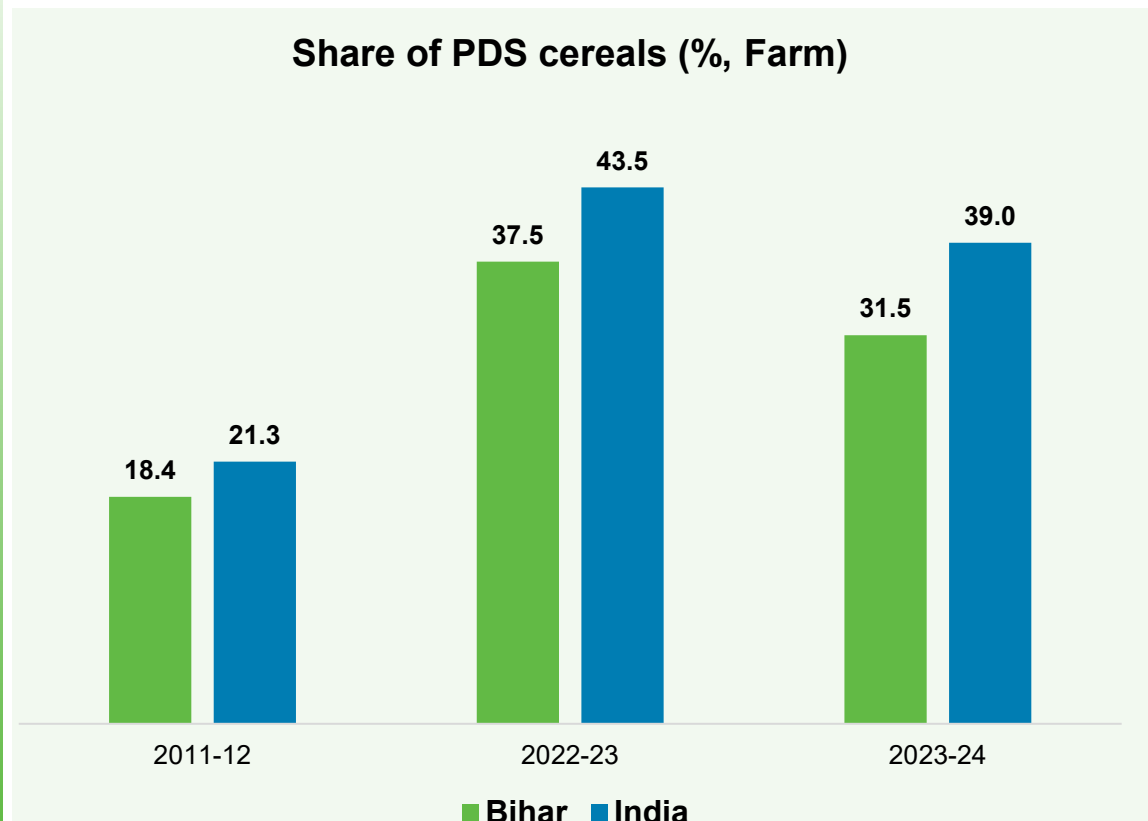


Source: Authors' estimates based on unit level data from NSSO surveys



Share of PDS in total cereal consumption in Bihar has risen over time in but remains below the national average, primarily driven by rice from PDS

Bihar v/s India: trends in the contribution of PDS in cereal consumption by occupation



Source: Authors' estimates based on unit level data from NSSO surveys

PDS share in total cereal consumption has risen, driven mainly by rice, but remains below the national average for both farm and non-farm households.

Note: The analysis covers rural sector only as it primarily engages in farm activities. Farm occupations include self-employed and casual labour in agriculture and Non-Farm occupations include self-employed and casual labour in non-agriculture, regular wage/ salary earning, and others

Bihar v/s India: Poverty estimates (Himanshu et al.)

- **Himanshu et al. (2025)** estimate national and state poverty lines, as well as poverty estimates for 2022–23, based on the last official poverty lines established by the Tendulkar Committee (2009).
- The estimated **poverty headcount ratios (HCR)**, calculated using Fisher Price Indices (FPI) for Bihar and India, are as follows:

Year	Bihar			India		
	Rural	Urban	Total	Rural	Urban	Total
2011-12	34.06	31.23	33.47	25.7	13.7	22.24
2022-23	11.1	6.8	10.8	12.1	4.5	9.9

Source: Himanshu et al. (2025)

- HCR in Bihar fell sharply from 2011–12 to 2022–23, but the state still **ranks 5th in overall poverty at 10.8%**, above the national average of **9.9%**.
- Rural poverty is a key concern, with Bihar **ranking 4th highest in rural HCR (11.1%)**.

How Far is India Away from the Goal of DFI?

- Farmers Net Income increased but still not adequate;
- Significant change in the composition of farmers income
- Cannot rely solely on crop production for DFI – increased focus on providing investment and institutional support to high-value horticulture crops, and allied sectors such as livestock and fishery.
- Non-farm sector has performed better in comparison to the farm sector in many states
- Large inter-state disparities in total farm income, both as per farm size and social groups.
 - Punjab & Haryana farmers earn almost five-times more than Bihar & WB farmers*
 - Bihar Chhattisgarh MP gearing up*
 - Marginal income 1/4rth of large; upper caste and OBC earn 1.5 times more that of SC and STs)

The Way Forward to Raise Farmers Income

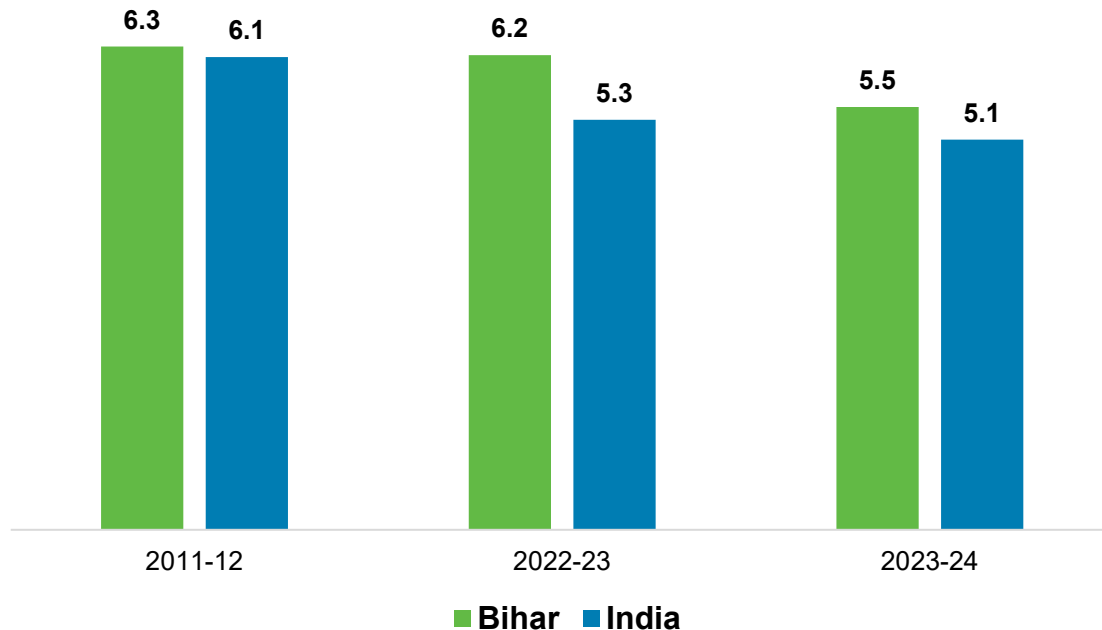
- Continuation of investments in irrigation & other rural infrastructure, R&D, marketing, to improve the productivity, input use efficiency and economic viability of small farms
- Provision of adequate credit at lower interest rates & subsidized veterinary services, feed, and fodder
- Estimation of investment requirements for technological innovations, climate resilient crop varieties, digitalization of agriculture (e-platforms, integrating the value chain); **Public, Private or PPP model?**
- Measures to accelerate investment and growth in rural non-farm business?
- **Targeted and location specific support measures** to actual cultivators rather than only the landholders by issuing *farmer cards* to tenants, labour and women farmers
- **Rationalization** of input and output subsidy regimes for higher efficiency

Thank you!

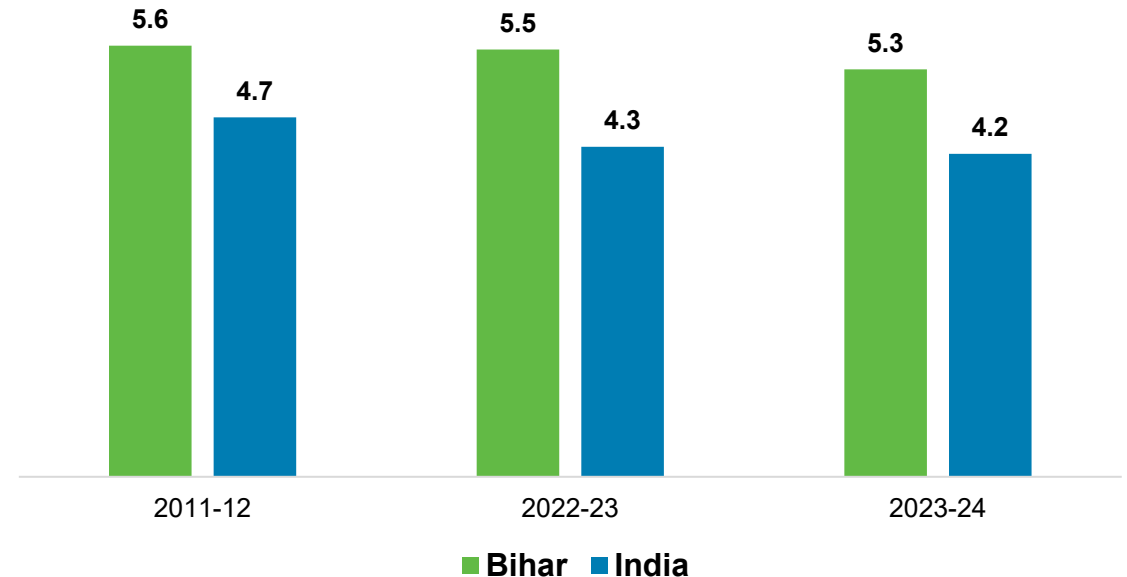


Bihar v/s India: trends in monthly per capita cereal consumption (1/2)

Rice consumption (kg, Rural)



Rice consumption (kg, Urban)

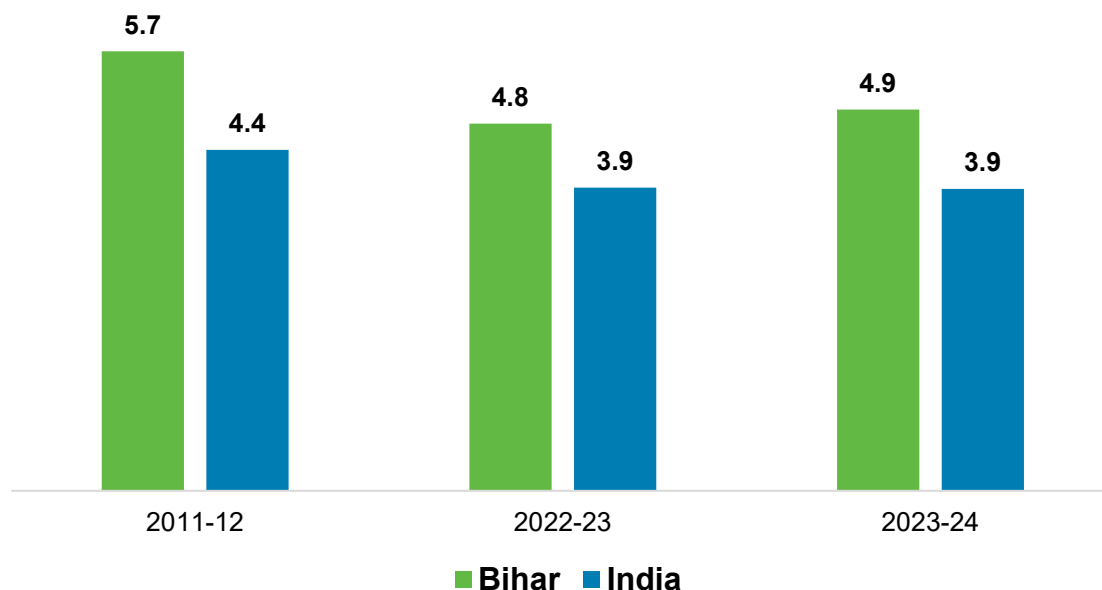


Source: Authors' estimates based on unit level data from NSSO surveys

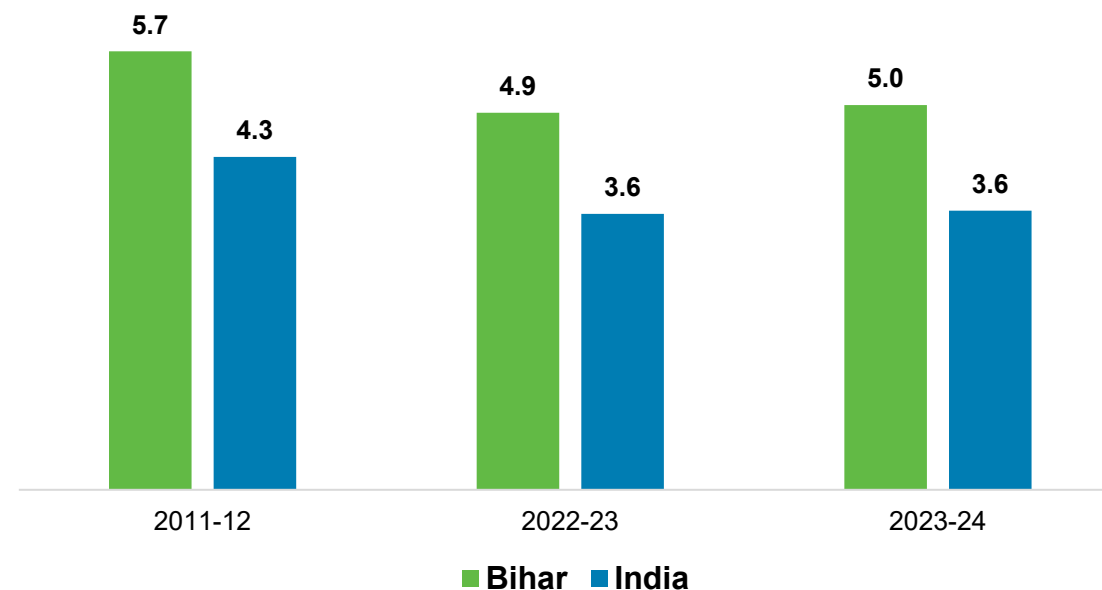
Rice consumption has gradually declined in both rural and urban areas, with Bihar's rice consumption being consistently higher than the national average.

Bihar v/s India: trends in monthly per capita cereal consumption (2/2)

Wheat consumption (kg, Rural)



Wheat consumption (kg, Urban)

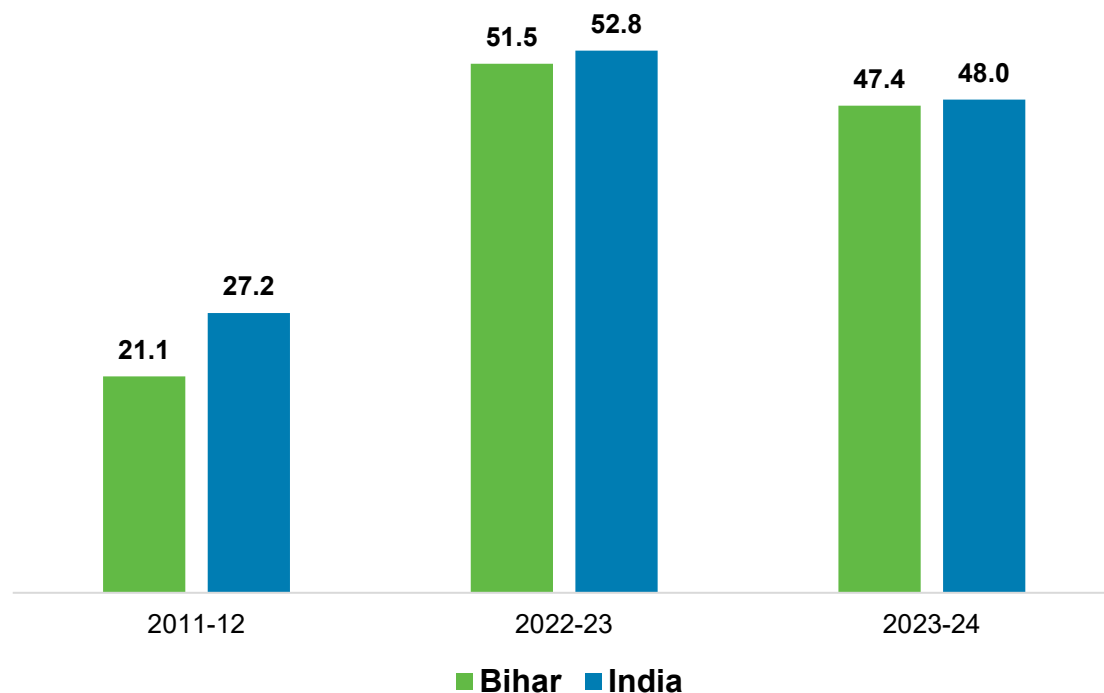


Source: Authors' estimates based on unit level data from NSSO surveys

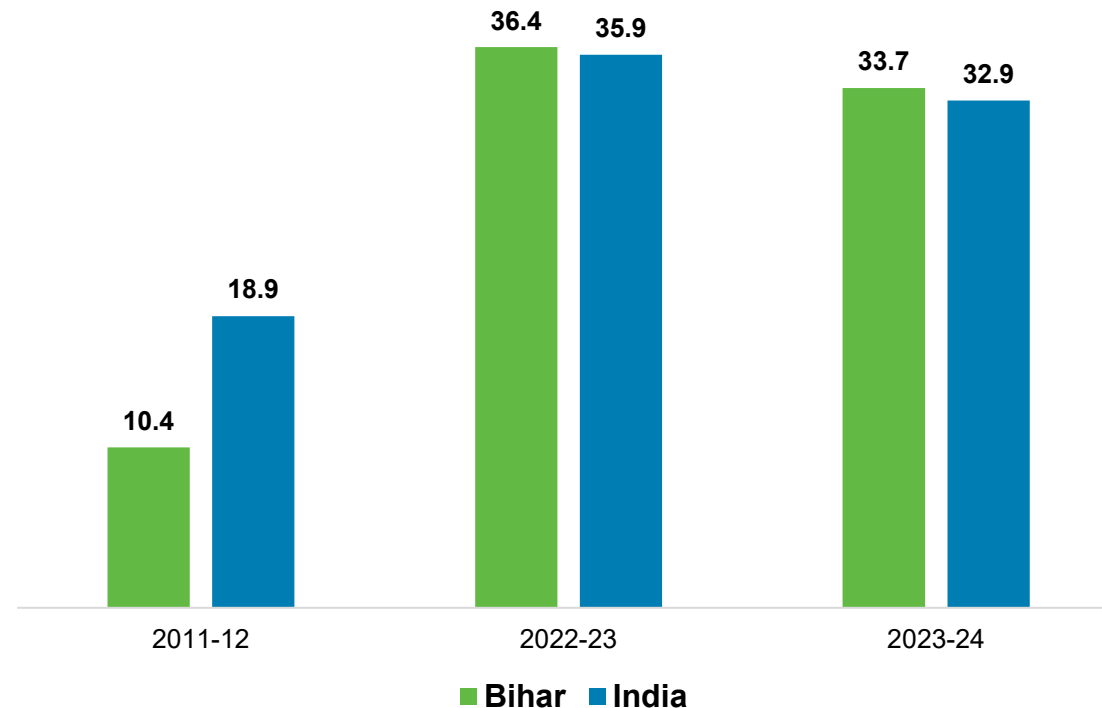
Similarly, wheat consumption has declined across rural and urban areas but has consistently remained significantly higher than the national average.

Bihar v/s India: trends in the contribution of PDS in cereal consumption (1/2)

Share of PDS rice (% , Rural)



Share of PDS rice (% , Urban)



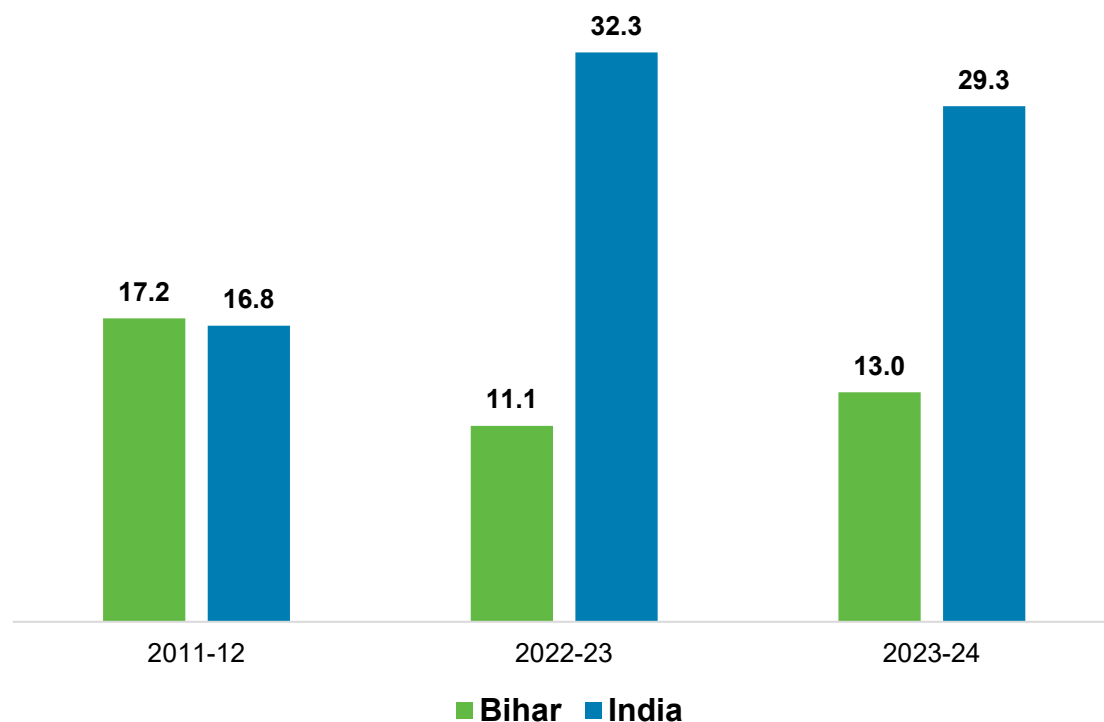
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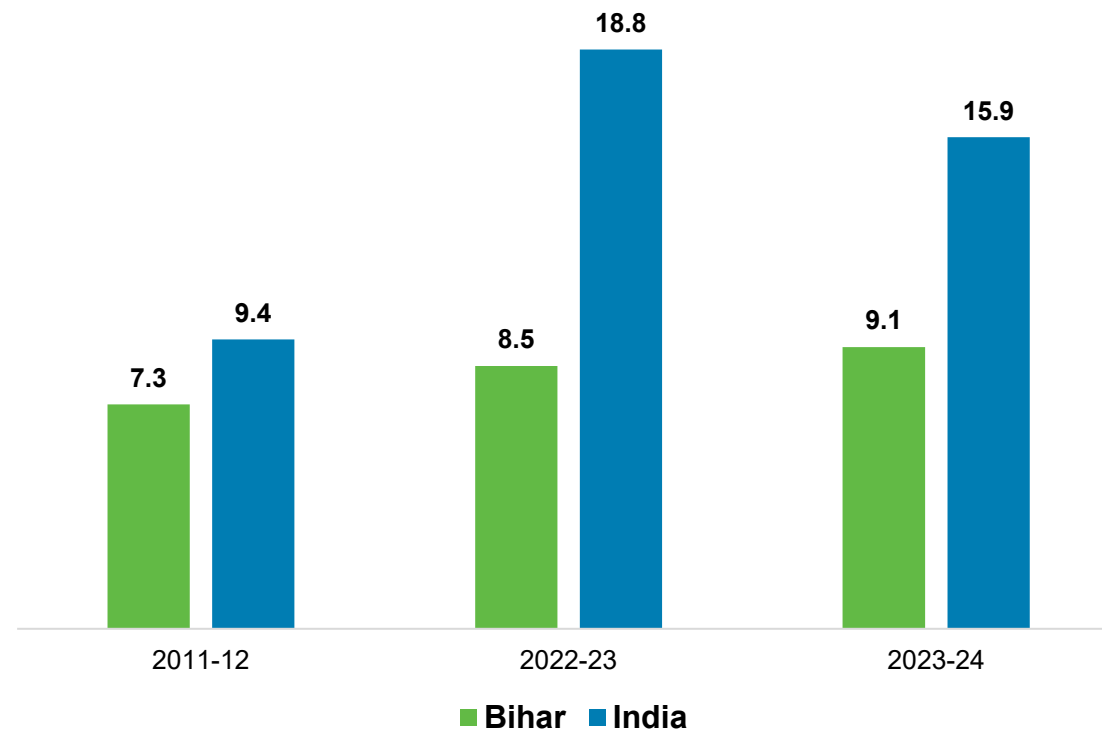
Share of rice from PDS in total rice consumption has more than doubled over time in both rural and urban areas to match the national average in 2023-24.

Bihar v/s India: trends in the contribution of PDS in cereal consumption (2/2)

Share of PDS wheat (% , Rural)



Share of PDS wheat (% , Urban)

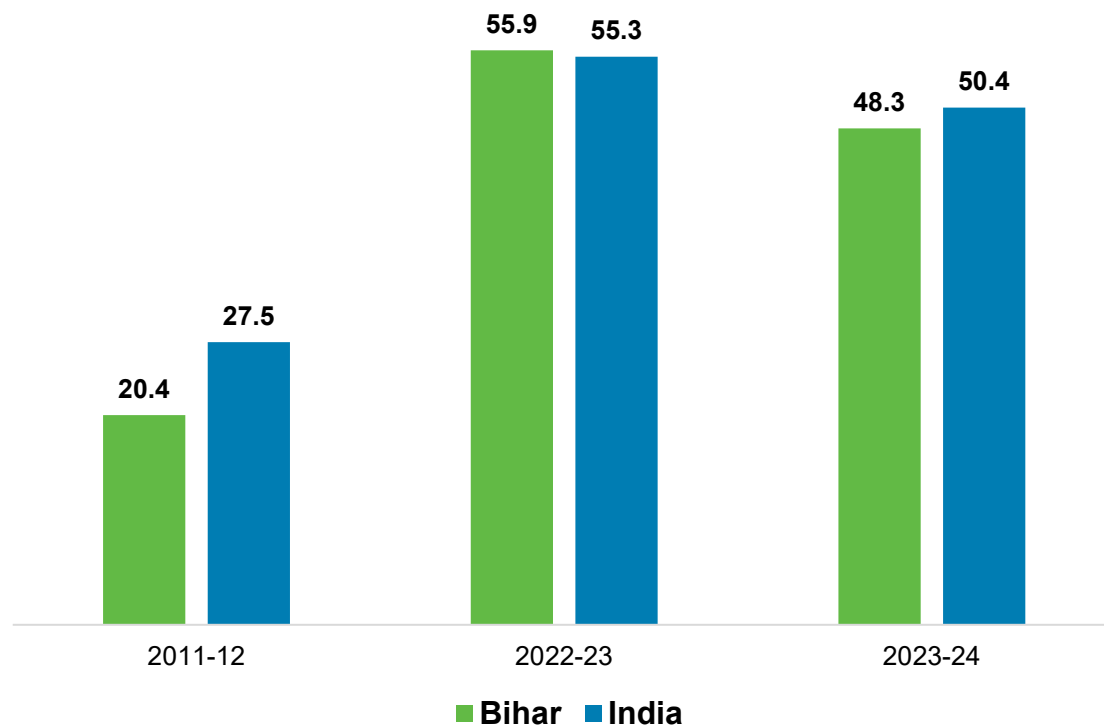


Source: Authors' estimates based on unit level data from NSSO surveys

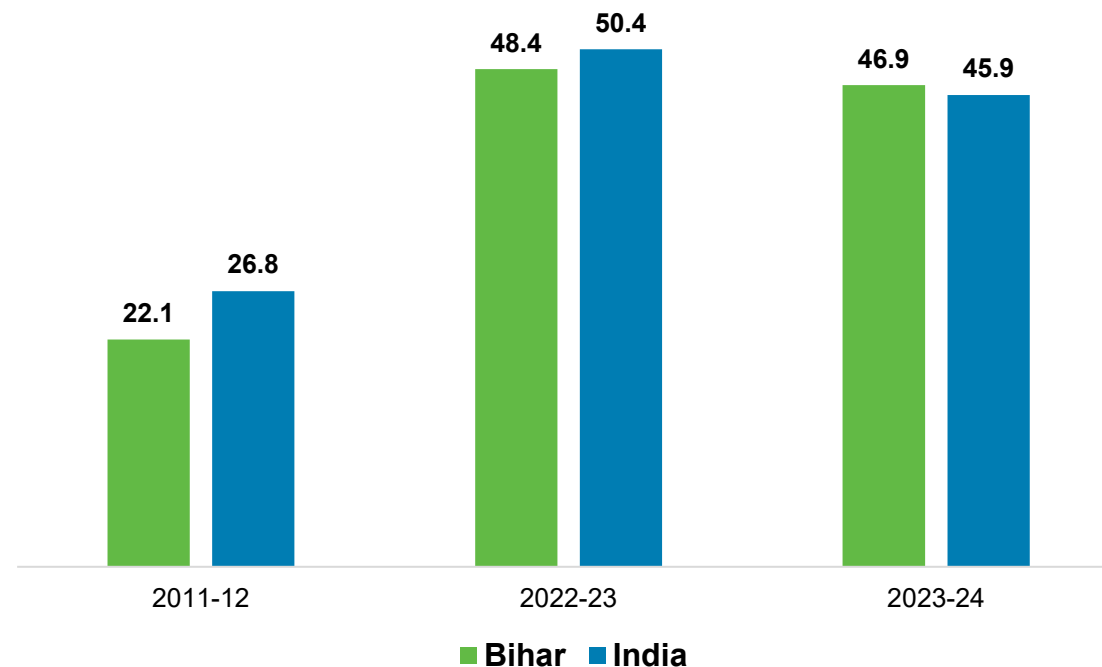
Share of wheat from PDS in total wheat consumption has remained significantly lower than the national average since 2022-23, particularly in rural areas.

Bihar v/s India: trends in the contribution of PDS in cereal consumption by occupation (1/2)

Share of PDS rice (% , Farm)



Share of PDS rice (% , Non-Farm)



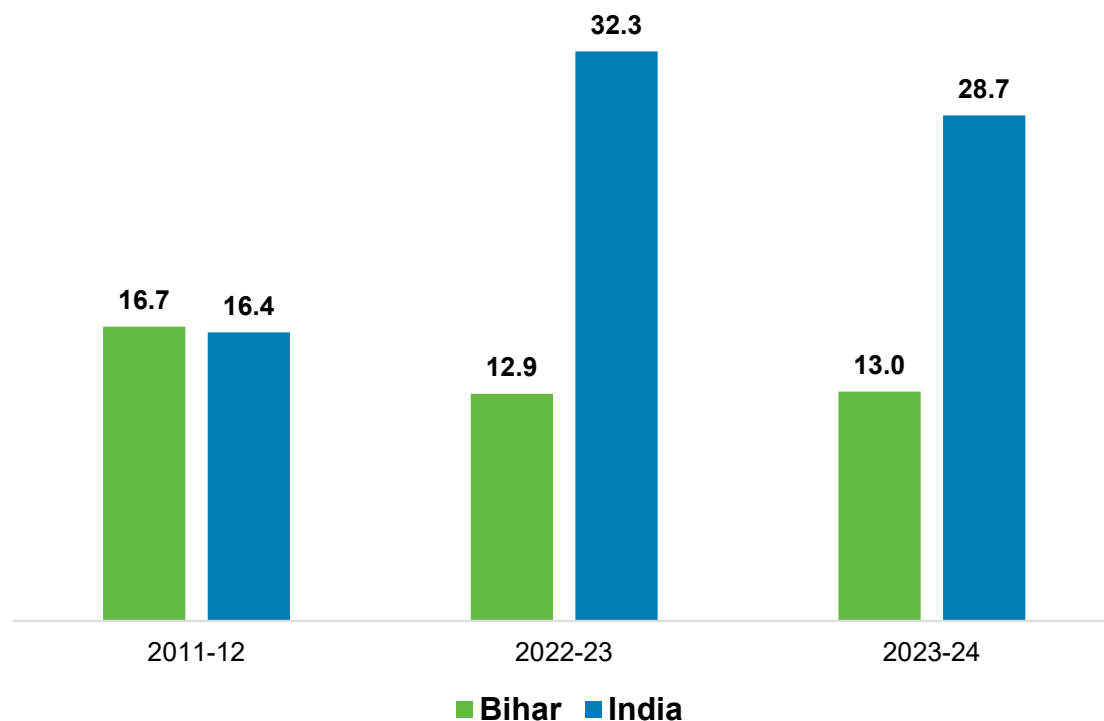
Source: Authors' estimates based on unit level data from NSSO surveys

Share of rice from PDS in total rice consumption has risen sharply across farm and non-farm households, converging closer to the national average in 2022-23.

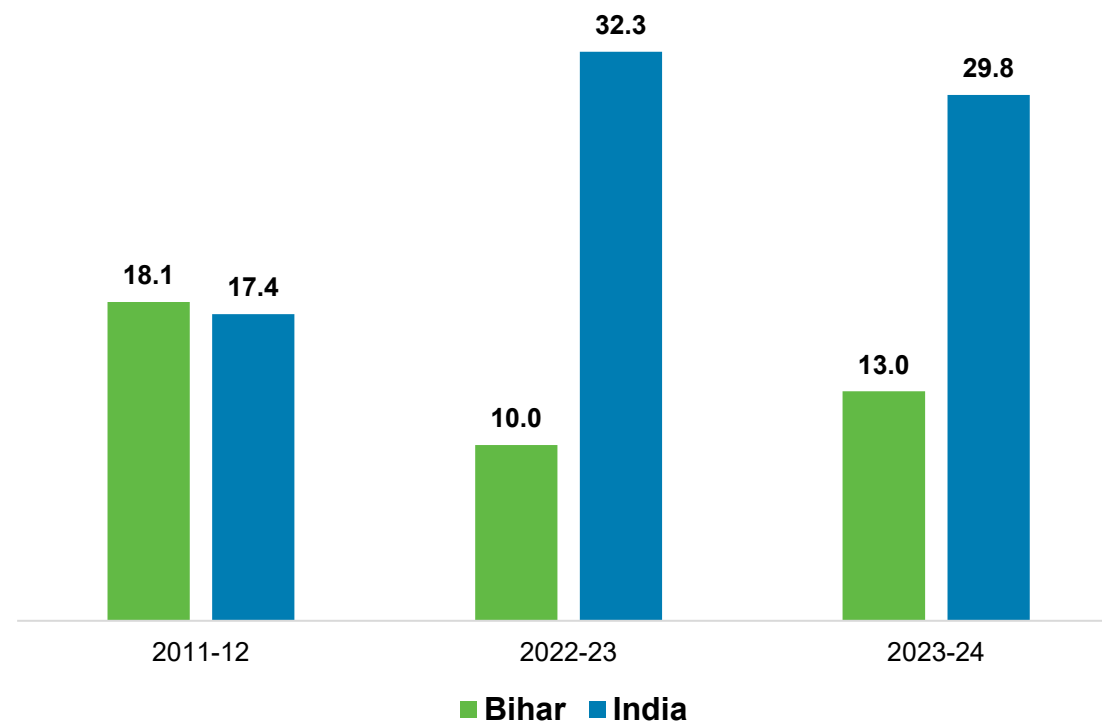
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Bihar v/s India: trends in the contribution of PDS in cereal consumption by occupation (2/2)

Share of PDS wheat (% , Farm)



Share of PDS wheat (% , Non-Farm)



Source: Authors' estimates based on unit level data from NSSO surveys



Share of PDS wheat in total wheat consumption in Bihar has remained well below the national average in both farm and non-farm households since 2022-23.

Note: The analysis covers rural sector only as it primarily engages in farm activities. Farm occupations include self-employed and casual labour in agriculture and Non-Farm occupations include self-employed and casual labour in non-agriculture, regular wage/ salary earning, and others