

Agricultural transformation in Bangladesh

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Introduction

Bangladesh's agriculture is rapidly transforming due to social and economic development. These transformations have implications on resource use, food production, and technology development. This paper presents key long-term transformation in Bangladesh's agriculture.

Data and Methodology

We used longitudinal survey data from rural households located in 12 villages across 11 districts of Bangladesh. Data were collected in five rounds: 1988, 2000, 2004, 2008, and 2009–2014. Previous rounds of data were collected at certain year intervals while the latest rounds of data were collected several times per year under the Village Dynamics in South Asia (VDSA) Project. The sample size, that ranges from 240 to 510 households depending on the survey round, increased over time. We analyzed the data using descriptive statistics.

Results

A. Farm size and tenancy

- The average landholding has been decreasing (Figure 1). Small farms limit food self-sufficiency, land-based income generation, and the exploitation of economies of scale through mechanization.

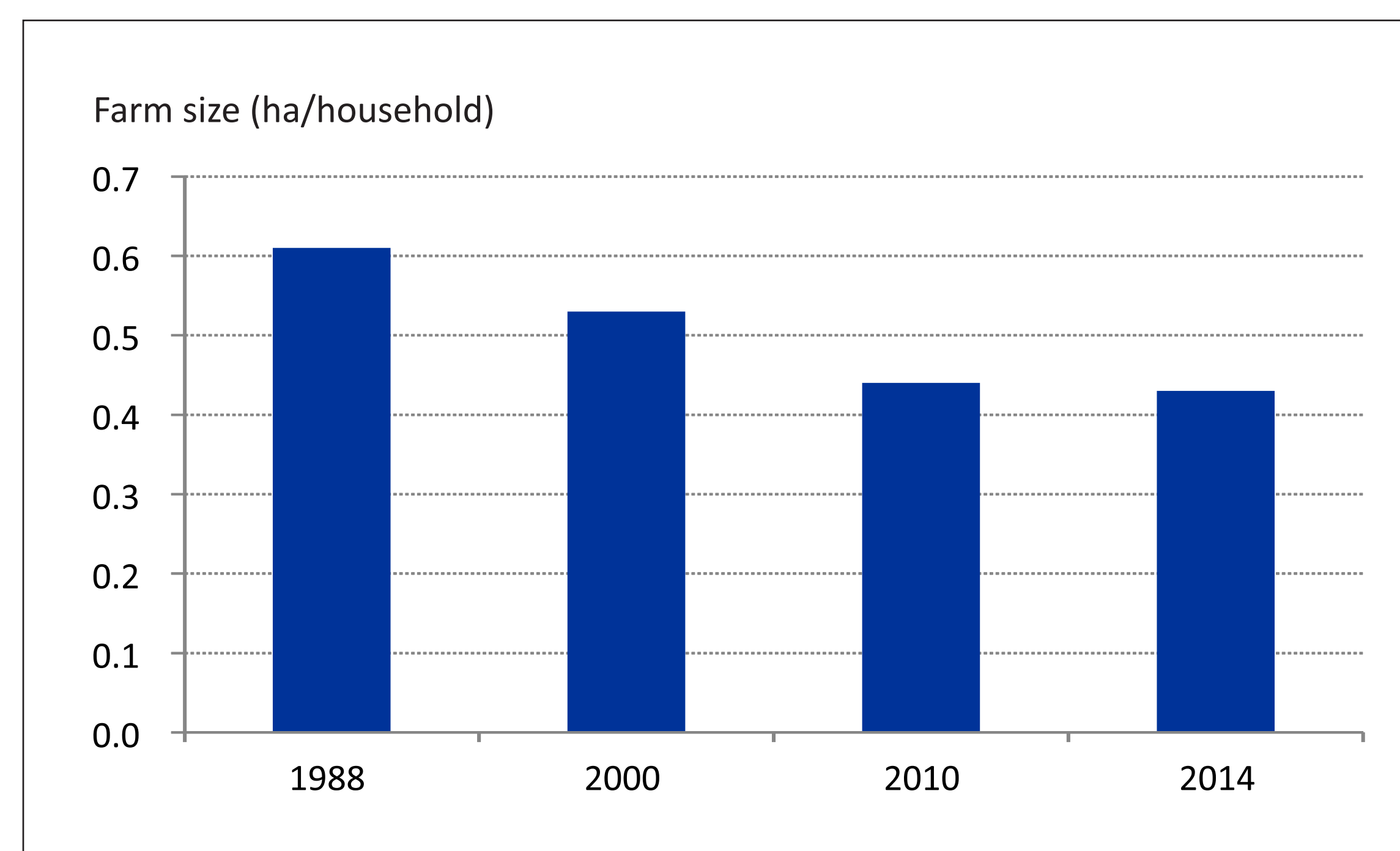


Figure 1. Trend in farm size.

- The growing tenant farming (Figure 2) can increase poor's access to land and also help consolidate fields into larger operational units for mechanization. A well-functioning tenancy market can increase agricultural productivity and benefit tenants.

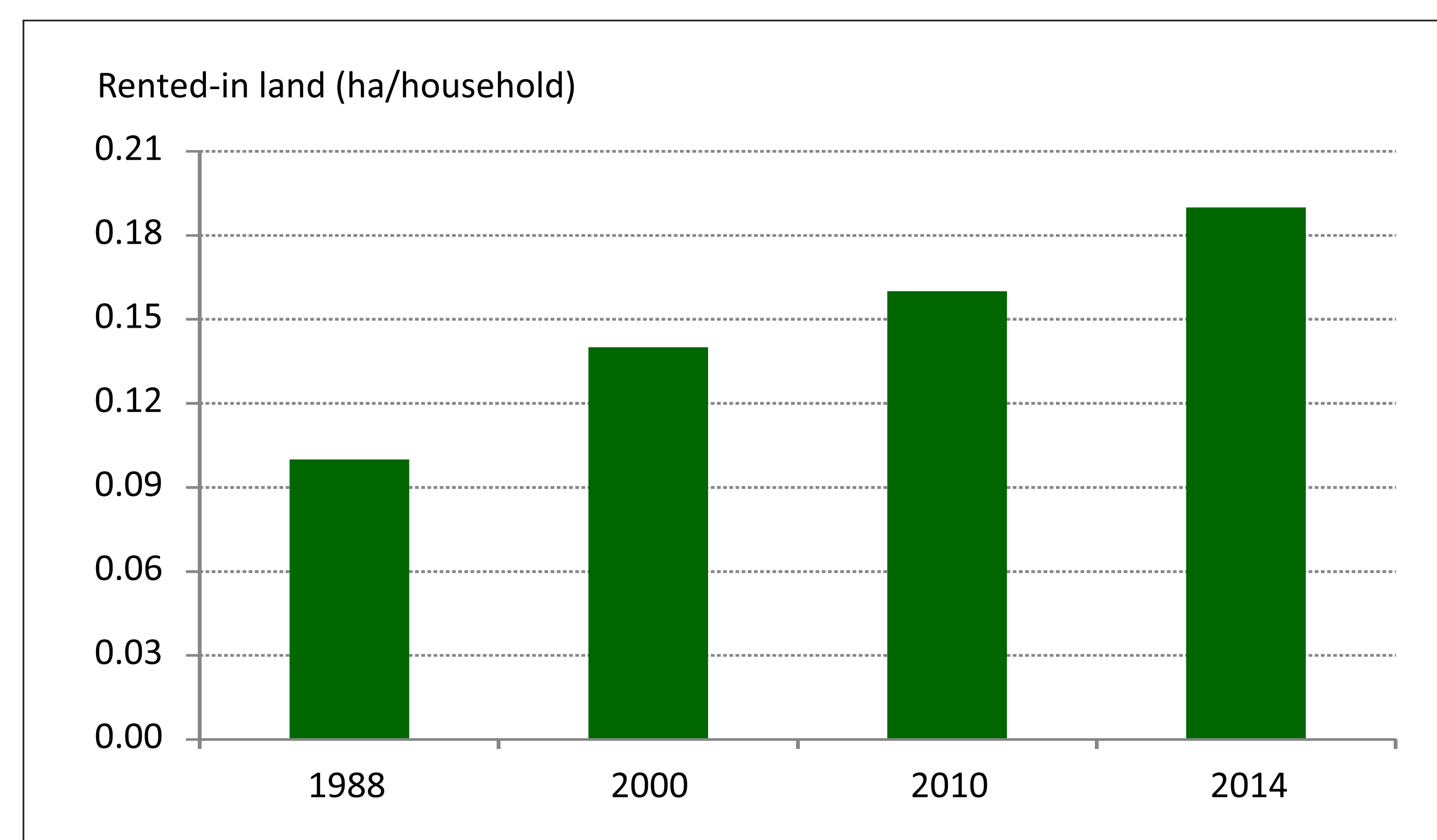


Figure 2. Trend in tenant farming.

B. Cropping pattern

- Although the share has declined, rice still covers over 70% of the gross cropped area (Table 1). In the last 25 years, the share of *aus* rice declined, *aman* rice remained stable, and *boro* rice increased.

- Crop diversification, which has been low, is gradually increasing. Non-rice crop's share increased from 25 to 29% during 1988–2013. The cropped area of wheat, maize, and vegetables is expanding (Table 1).

Table 1. Area under different crops (% of gross cropped area).

Crops	Area (% of GCA)	
	1988	2013
<i>Aus</i> rice (pre-wet season)	22	6
<i>Aman</i> rice (wet season)	40	39
<i>Boro</i> rice (dry season)	13	26
Wheat	3	4
Maize	0	4
Pulses	10	9
Oilseeds	3	3
Jute	3	3
Vegetables	1	3
Others	5	3

C. Adoption of high yielding varieties (HYV) rice

- The adoption of HYV rice increased significantly in the *aus* and *aman* seasons in the last 25 years. Yet, traditional low yielding varieties still covers 30% of *aman*'s rice area (Figure 3).
- The adoption of HYV and improved crop management practices increased rice yield significantly (Figure 4).

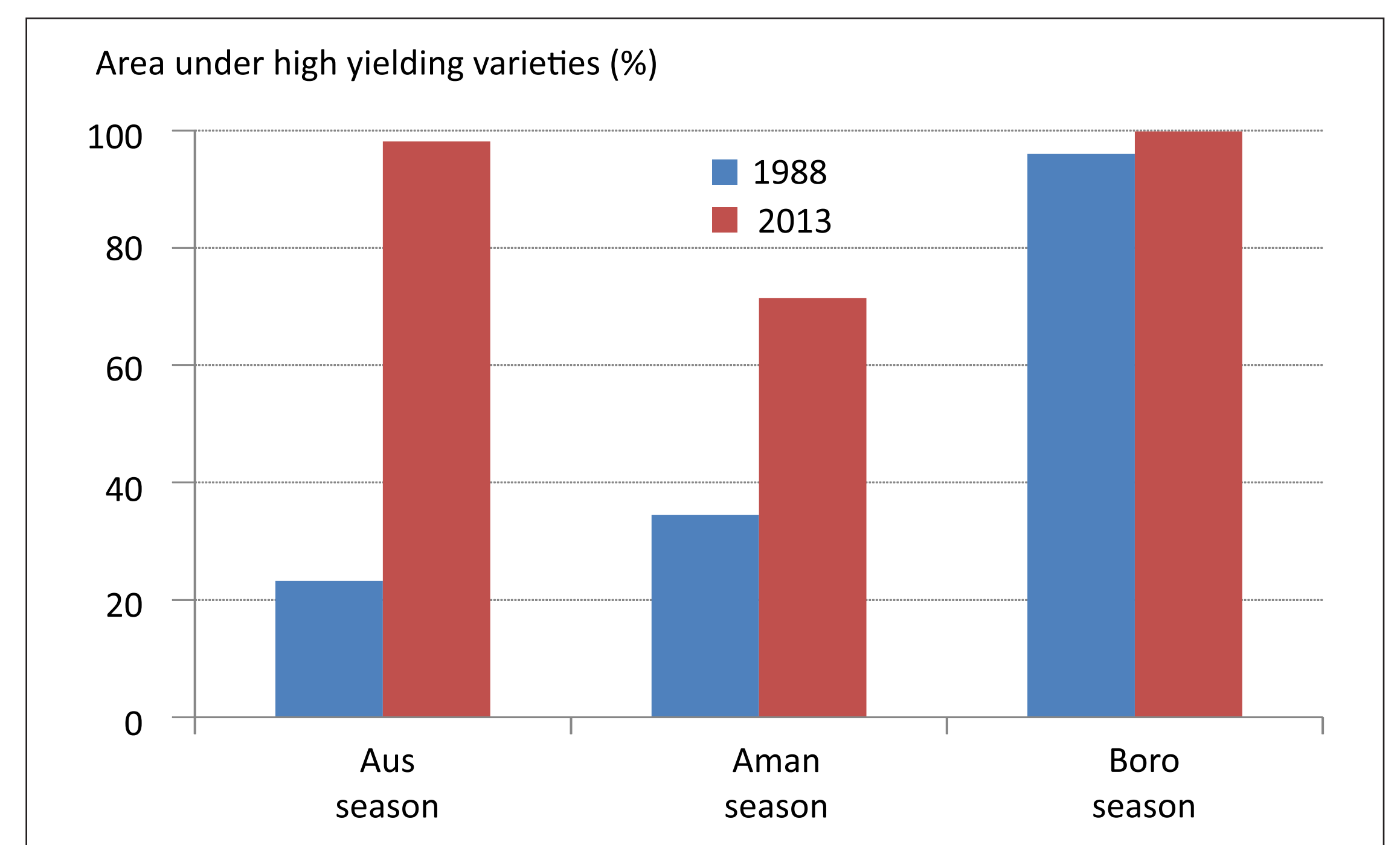


Figure 3. Adoption of high yielding varieties of rice.

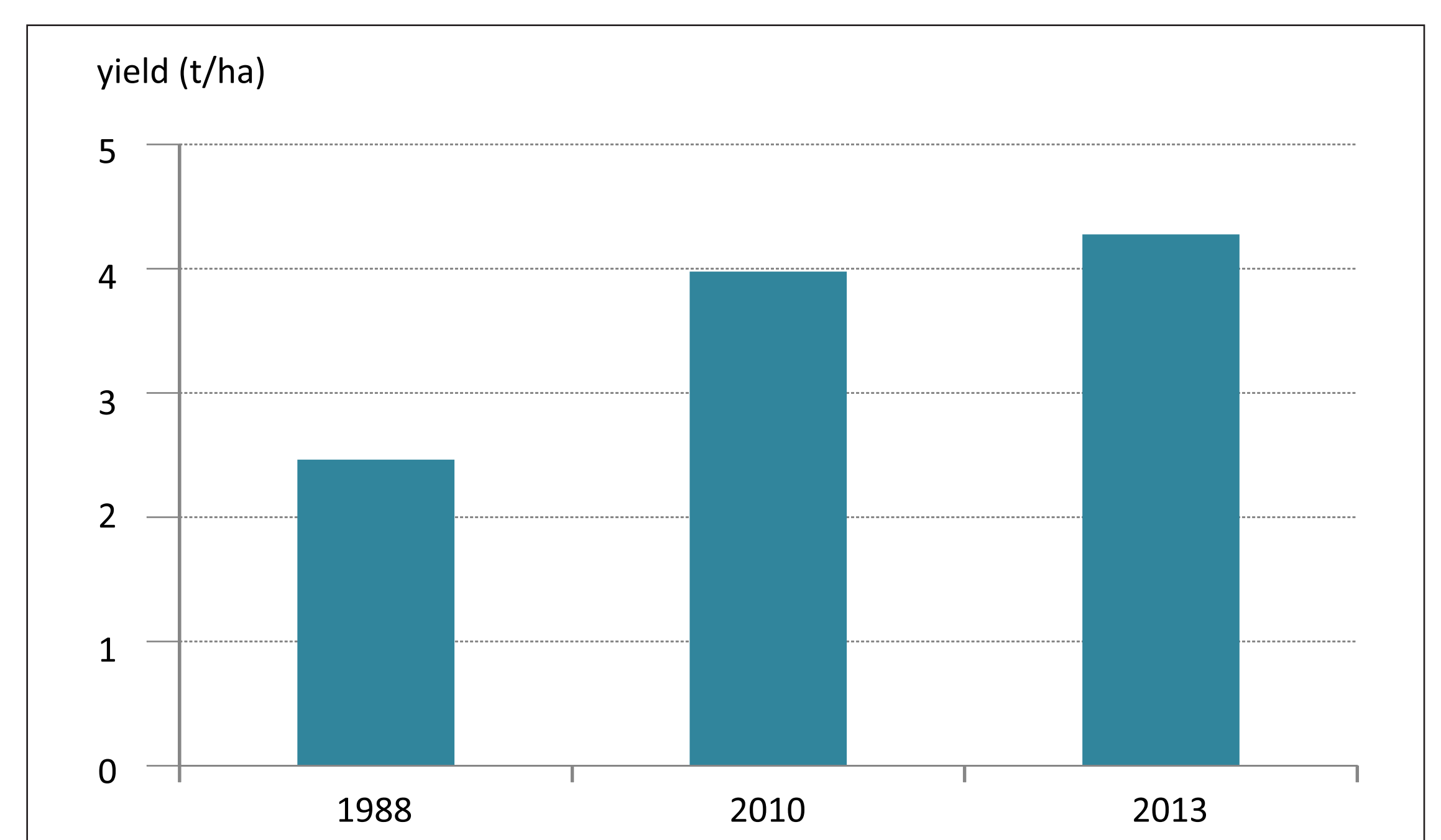


Figure 4. Trend in average rice yield.

Conclusions

Bangladesh's agriculture is transforming rapidly. Farm size is declining, tenant farming is increasing, and due to the adoption of HYV rice yield is increasing. The rice-based cropping system is diversifying, but slowly.

The VDSA Project provides unique evidences about agricultural transformation. This information can serve an entry points for future research and development interventions.