Chapter 15

Rice Value Chain Transformation in India and Bangladesh: Survey Findings with Implications for Food Security

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I. Introduction

1. The Asian rice crisis of 2007–2008 led to a revival of interest in the structure, conduct, and performance of domestic rice value chains in the region. Spurred by that interest, the Asian Development Bank (ADB) commissioned the International Food Policy Research Institute (IFPRI) in 2009 to conduct a study, with surveys, of rice and potato value chains in Bangladesh, the People’s Republic of China, India, and Viet Nam. The findings for rice, and for Bangladesh and India are reported here.

2. This paper focuses on understanding: (1) the structure of the rice value chains in 2009, in terms of the degree of consolidation and heterogeneity per segment of the chain, and the formation of costs and value added over the segments of the chain, from the farm segment, to wholesale, processing, and retail, and an indication of how this structure has changed in the last 10 years; (2) the conduct or behavior of the segments, in terms of technologies used, buying and selling practices, and credit given and received, and how this differs over the scale of actors; (3) the performance of the value chain, in terms of margins of the segments, retail prices, and quality differentiation.

3. The study used a unique “stacked survey” method, with 1,577 interviews in the two countries, comprising 490 rice farmers, 45 millers, 180 paddy and rice traders, 770 traditional rice retailers, and 92 supermarkets. We selected the Noagoan district, about 200 km from Dhaka, and the Shahjahanpur District in Uttar Pradesh, about 300 km from New Delhi, because they are important to the rice supply of these mega cities and are among the closest major rice areas to the cities. Our focus was on the representativeness of “city supplying rural areas.” We found these areas tend to be more commercial (though still small farmer dominated) than the average area—but still representative of what we think is roughly half the rural areas in the study countries that are in an 8-hour radius from the major cities.

II. Key Findings

1. Retail Segment

   a. Supermarkets have emerged only recently in Bangladesh, mainly in Dhaka: 80% of them opened in only the past 3–4 years. They have so far only a tiny presence in rice retail.

   b. In India, the modern private food retail sector has nearly $3 billion (USD) of sales (and with modern state and cooperative retail that reach about $5 billion). The sector registered most of its growth in only the past 4–5 years. Sales of the sector

1 The authors are from the International Food Policy Research Institute.
are growing at 49% per year, among the fastest in the world. Supermarkets have already captured 7% of the rice market in New Delhi, an appreciable rate given its recent start.

c. Importantly, rice prices charged by supermarkets in New Delhi are lower than those in traditional shops, and with added quality control.
d. The quality of rice that is retailed in Dhaka significantly increased over the past 10 years, with a more moderate but similar trend in New Delhi. A noticeable increase was seen in the sale of branded/labeled rice in traditional stores: in New Delhi, 31% of the rice is already sold this way.

2. Trader Segment

a. The conventional view is that traditional rice value chains are “long” (with many segments), and that the village trader has a major role. By contrast, the study showed significant “dis-intermediation” occurring in the traditional system. Mills and wholesale market brokers often buy directly from farmers, cutting out the village traders, and mills sell directly to urban wholesale markets. It appears that roads and cell phones have been important factors in changing the market structure.
b. It is widely held that traders usually give credit advances to “tie” output delivery from farmers. By contrast, the study noted that in Bangladesh, only 11% of the traders provided credit; in India, the share of traders was 0%.
c. Marketing costs are relatively low but profit rates of traders are somewhat high, especially in India. Investment for entry is quite high compared to traditional retail or trading.

3. Mill Segment

a. The survey showed concentration over time in the mill segment—with an increase in mill capacity among the mills sampled, and a loss of market share for smaller mills. The survey also showed technology changes in favor of automatic and semi-automatic mills.
b. There is very sharp seasonality of capacity utilization and storage in both Bangladesh and India, with evidence especially in India of underutilization. This may be one important factor driving the concentration of the mill sector.
c. Rice mills rely directly on farmers for a third to a half of their paddy. But that share is strongly inversely related to the size of the mill: smaller mills buy directly from small farmers, while larger mills rely on traders. In India, the mills buy, mill, and sell from/for/to the government in a major way, but this is not the case in Bangladesh. In Bangladesh and India, the mills just sell mainly to the rural wholesale markets.
d. Rice quality in milling has increased in the past decade, while packaging and branding also increased in both Bangladesh and India.
e. Rice millers give credit (as advances) to few of their suppliers.
f. Rice mill profit rates (gross of capital amortization) and internal rates of return are appreciable but vary strongly over mill scales.

4. Farmer Segment

a. For commodity (not high quality) rice, the shares of farmers in the final retail price are fairly high—and rise roughly with the degree of transformation of the rice value chain. Farmers obtain 45% of the final (traditional) retail price in India and 74% in Bangladesh. For high quality rice, the shares of the farmers in the final retail price are lower—and the share of off-farm segments is higher than for commodity rice.

b. In both countries, although somewhat more so in India, the rice farm population was much more heterogeneous than expected, with much greater than expected land rental, water purchase, herbicide and pesticide use, marketed surplus rates, share of medium-sized farmers in total output, and cell phone use. Farmers surveyed in these countries are really “small/medium commercial rice farmers” feeding the great cities.

III. Food Security Implications

1. Rice value chains are transforming and differentiating—undergoing technological and organizational change, and upgrading quality. The overall picture of rice value chains is one of ferment and dynamism—far from the sleepy, stagnant, traditional image of rice supply chains commonly found in the policy debate. In Bangladesh and India, these value chains are moving from the traditional to what we call the “intermediate/transitional” value chains. They are not yet in the stage of shifting to modern (as observed in the People’s Republic of China), but it is likely that this is their future pathway.

2. The transformational changes in the rice value chains linking the mega cities of Bangladesh and India (Dhaka and New Delhi, respectively) with their respective rural rice producing centers (Noagan and Shahjahanpur District of Uttar Pradesh), have generally been good for food security. The survey results are especially relevant in terms of providing insights to addressing the food security needs of the increasing urban populace with rising incomes, and providing lessons for the poor rural zones to join the ranks of the dynamic and more commercialized rural centers.

3. The investments being made in upgrading—by farmers, millers, traders, retailers—are a source of dynamism on the supply side and essential for meeting the increasing demand for food of urban dwellers. In the most modern form of retailing, mainly the supermarkets of New Delhi, consumers get lower prices for quality rice and quite an array of this. Farmers benefit too from the value chain’s transformation process as they have more choices in terms of buyers of their produce, and because of the dis-intermediation in the various segments of the midstream that capture a good share of the retail price. With generally low entry barriers for any segments of the rice value chain, competition flourishes, thus limiting the extraction of above normal profits among the different players. More jobs are also created at both the rice production and rural midstream activities of the rice value chains.
4. The main conclusion is that policymakers have a big opportunity to promote food security by encouraging and enabling the transformation already underway, and to cause it to accelerate and deepen. In particular, a substantial portion of the costs and value-added of the rice value chains is generated by the midstream, including in wholesale and processing. Mills are key motors of transformation of rice value chains. Policy attention to the midstream of the value chain is highly desirable and needs to be actively debated.

5. Further, the low wastes incurred by actors in the value chain are partly because of the key infrastructure investments of the governments in roads that have made rural producing centers more proximate to the urban consuming centers, and in energy that has encouraged the development of mills. Investments in rice seed variety were also major impetus for higher yields and for more rice varieties produced by farmers.

6. Additionally, a business climate that reduced the entry and exit of rice entrepreneurs that encouraged the rapid use of mobile phones for easy access to market information, and that enabled the private sector to perform the roles of processing and marketing contributed in spurring the transformation process.

7. Finally, the study noted the demise of trader finance. This puts the burden back on the development of credit markets and nonfarm income sources to make sure that investment funds are available to farmers, millers, and traders.

Reference

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