



# Discussion Paper BRIEFS

Food Consumption and Nutrition Division of the International Food Policy Research Institute

*Discussion Paper 156*

## **Public Policy, Food Markets, and Household Coping Strategies in Bangladesh: Lessons from the 1998 Floods**

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**F**looding is a normal part of the ecology of Bangladesh. The 1998 flood was especially serious because of its depth and duration. At its peak, the flood covered two-thirds of the country, causing severe damage to the rice crop and threatening the food security of millions of households. Total rice production losses exceeded 2 million tons—about 10 percent of annual consumption.

In sharp contrast to earlier flood disasters, particularly that of 1974, no major food crisis occurred. Instead, large-scale, private-sector imports, made possible by trade liberalization in the early 1990s, stabilized rice markets. Government food transfers to poor households also limited the impact of the flood on household access to food.

### ***Purpose of This Paper***

This paper sheds light on the contribution of price stabilization to household food security following a major natural shock through estimates of the impact of rice prices and other factors on calorie consumption in 1998 and 1999. More broadly, the paper examines the components of the public and private response that prevented a major food crisis.

### ***The Contribution of Government Policy Interventions***

Since earlier floods in the early 1970s and late 1980s, Bangladesh has dramatically expanded its markets, opening them to more participants, investing in infrastructure, and easing restrictions on private-sector trade. These policies have resulted in a well-functioning private market. Because of these reforms, only five to six months after the failure of the rice crop due to the flooding, a record winter-season rice crop was harvested, thus shortening the period of uncertainty regarding domestic supply, increasing food availability, raising farmer incomes, and reducing prices.

Other factors contributed to this relatively quick recovery as well. Private-sector imports added to domestic supplies and quickly stabilized prices at import parity levels following the initial shortfalls in 1997/98 and 1998/99. Also, rice markets

in Bangladesh are much better developed than in previous crises, so shortages between regions within the country are more easily met by domestic grain flows. Third, foreign exchange constraints, which so severely hampered government efforts to procure rice in 1974, have been greatly eased through increased export earnings and availability of commercial and official credit. And finally, international markets for rice and other grains have grown deeper and more stable, so the risk of facing high international prices was lessened.

### ***Flood Impacts and Coping Strategies***

The data for this study came from a panel of 757 rural households. The first round was collected in November/December 1998 (about three months after the flood), the second in April/May 1999 (eight months after the flood), and the third in November/December 1999 (15 months after the flood). Based on this data, the authors summarize impacts on household employment and income, food consumption, and health and nutrition; they also review the effects of the government's response to the crisis with food and cash transfers.

The data showed that households adjusted to the shock of the flood in several ways: reducing expenditures, selling assets, and borrowing. Borrowing to purchase food and fund other expenses has been the most important coping strategy employed by households in Bangladesh after the flood, both in terms of the value of the resources and the number of households that borrowed. The percentage of households with outstanding debt one year after the flood, however, and the amount of that debt, remained large, leaving those households vulnerable to another shock.

Finally, the authors estimate the contribution of government policies to maintaining household caloric consumption using price and income elasticities of demand from econometric analysis of household consumption data.

***The need is to combine policies that help stabilize availability of food with targeted public safety net programs that ensure access to food.***

### ***Conclusions and Policy Implications***

Following the 1998 flood in Bangladesh, private-sector

imports of rice from India supplemented domestic food supplies, stabilizing rice prices and preventing a further deterioration in households' purchasing power and calorie consumption. Without this private cross-border trade, rice prices would likely have been at least 19 percent higher and total calorie consumption of the poor would have fallen by an additional 44–109 kcal/person/day.

Nonetheless, government policy did play a major role in avoiding a major food crisis after the flood. Government long-term agricultural and investment policies enabled a long-term expansion in the winter season rice crop that has reduced the country's dependence on the flood-susceptible monsoon season rice crop. Investments in infrastructure and promotion of private-sector trade, including liberalizing rice and wheat import trade in the early 1990s, have helped develop efficient and competitive foodgrain markets that quickly responded to the impending production shortfall.

Short-term government policy focused on public foodgrain distribution targeted to flood-exposed or poor households. Government transfers through the Gratuitous Relief and Vulnerable Group Feeding programs added to household food security and helped children maintain or improve their nutritional status. Nonetheless, these programs were small relative to the needs of households, and only a small fraction of the size of household borrowing.

Borrowing from private-sector sources was the major household coping strategy in the initial three months after the flood. However, the reliance of poor and flood-exposed households on private-sector borrowing had adverse implications for food security and economic growth in the medium term. Fifteen months after the flood, household debts still averaged

146 percent of one month's average consumption for the 64.2 percent of flood-exposed households in the bottom two quintiles of the expenditure distribution who were in debt. For the poorest two quintiles of total households (flood-exposed and nonflood-exposed), debts averaged 150 percent of monthly expenditures.

The flood had a long-term negative impact on the nutritional status of preschool children, whose nutritional status was already very low. Thus, medium-term policies that reduce malnutrition among children would also be effective in softening the negative impact of natural shocks such as the flood. In the absence of effective policies to address chronic malnutrition, more children will remain vulnerable and have a lower probability of recovering in the event of a natural disaster, with long-term consequences on the level of human capital.

In summary, the Bangladesh flood experience illustrates the crucial role that private markets and appropriate government investments and policies can play in maintaining food availability, limiting price increases, and supplementing household access to food, thereby helping to avoid a major food crisis. Nonetheless, the poor did suffer, both in the short term through reduced consumption and increased illness, and in the medium term through increases in household debt and lingering nutritional consequences. These adverse effects underscore the need to combine policies that help stabilize availability of food with targeted public distribution, credit, or other safety net programs that ensure access to food by food-insecure households at the time of disasters.

**Keywords: safety net programs, Bangladesh, food markets, household coping**

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