

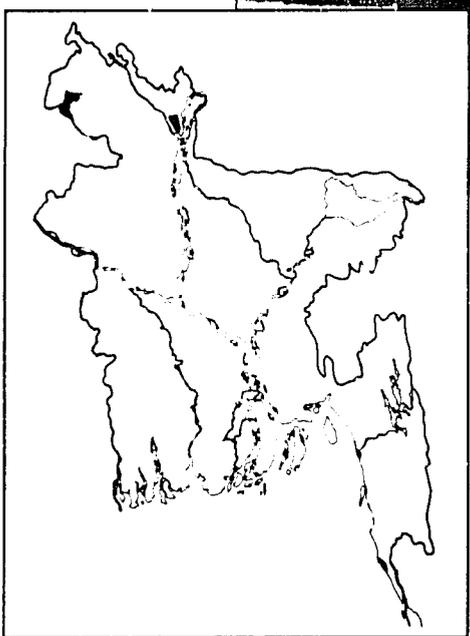
Nutritional Surveillance Project

Helen Keller International, Bangladesh

Nutritional and Socioeconomic Implications of Low Rainfall in the Northwest Region: Pirganj and Chilmari



Photo - M. Main Uddin



Part II Socioeconomic Analysis

Nutritional Surveillance Project

NUTRITIONAL AND SOCIOECONOMIC FINDINGS - December 1994

Special Report on the Status of Low Rainfall in Northern Areas

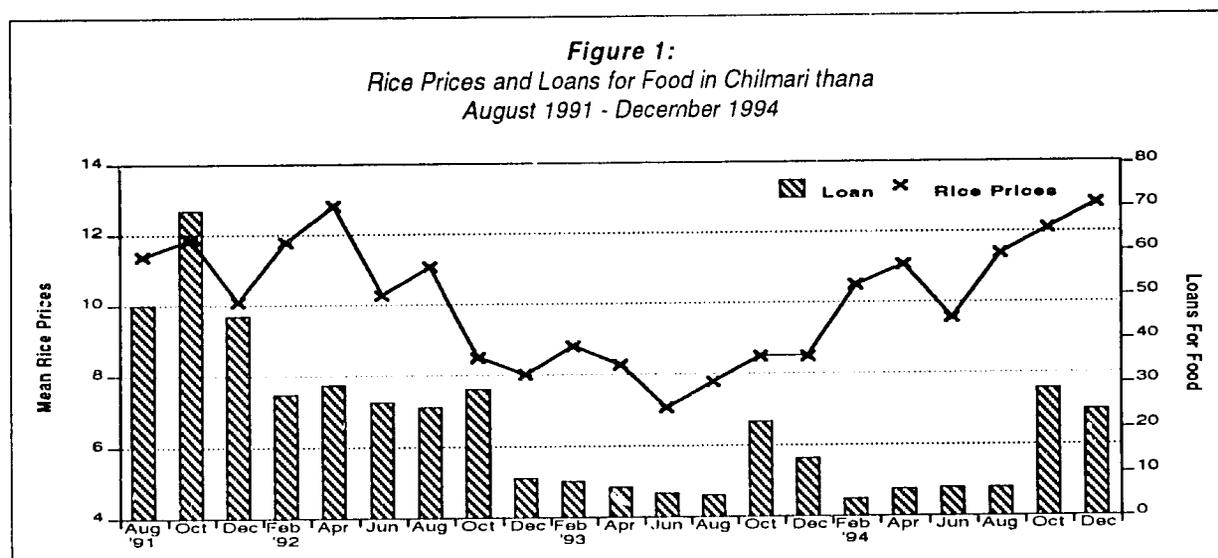
SUMMARY

Increased attention has been focused on the northwest region of Bangladesh because of a low level of rainfall during 1994. Meteorological stations in Rangpur and Dinajpur report 60% and 53% reduction in rainfall from the previous year. This report follows an earlier special report titled 'Nutritional and Socioeconomic Implications of Low Rainfall in the Northwest Region' which looked at the nutritional and socioeconomic status of two northwest thanas, Chilmari and Pirganj, using NSP data collected since June 1990. The NSP December round showed expected seasonal levels of nutritional status as measured by the prevalences of MUAC <125mm, wasting and underweight. Distress sales and loans for food consumption dropped from high levels in October to lower levels in December. However, there was a significant difference between the thanas. Pirganj showed some of the lowest figures for these indicators in any December recorded by the NSP. In contrast, Chilmari showed relative improvement of these indicators from the October round. This second special report assesses these differences by first, identifying vulnerable groups' coping strategies. Secondly, the report studies thana specific socioeconomic responses to the low rainfall, in particular, low production of food grains and the continued rise in market prices of essentials. Finally, the report assesses the impact of relief programs conducted by the government and Rangpur Dinajpur Rural Service (RDRS).

Seasonal variation in food intake is indicated by changes in wasting rates only (Hassan 1992). The NSP has shown wasting rates to be higher in the agriculturally lean seasons than in peak ones throughout the thanas covered. Wasting appears to be most prevalent in June-October, corresponding to the time of the year after the floods and before the largest of the three rice harvest (Aman). Wasting is lowest in December-February coinciding with the highest level of food intake in the post-Aman harvest. This trend occurs in both Pirganj and Chilmari. However, in December 1994, Pirganj showed significant improvement in this area; whereas Chilmari showed only relative improvement from October indicators.

By December, nutritional indicators of both the thanas returned to seasonally expected levels. For Chilmari, wasting at 9% and underweight at 65.4% represented levels typical of this season. Other indicators of distress were high in October but dropped in December. Chilmari showing distress sales at 26.9% and 24.2% loans for food, represents this trend (Figure 1). However, Pirganj showed some of the lowest figures for nutritional and socioeconomic distress for any December yet recorded by NSP, with wasting at 6.3% and underweight at 52.7% and distress sales and loans for food consumption at 2.4% and 1.4% respectively (Figure 2).

These different levels of distress between the thanas was also captured in the Emergency Nutrition Survey RDRS conducted in late January/early February 1995. The survey covered two zones (East and West) both in the extreme Northwest region of the country. By all the nutritional and socioeconomic indicators used in this survey the East zone, which corresponds to Chilmari thana, displayed overall higher levels of distress than found in the West Zone, which corresponds to Pirganj thana in the NSP data.



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implementation in October and most of the components were completed by December 1994 in all six RDRS working districts in northern Bangladesh. The Drought Response Project contained five components: cash for survival education, cash for work, survival credit, home gardening, and fish pond excavation. In the selection process, vulnerable groups such as female heads of household, women with disabled male family members, the elderly, and families affected by river erosion were given priority (RDRS/ODA 1994).

The cash for survival education component targeted mainly landless women. Participants attended a standardized survival education session which contained information on disease prevention, gardening, livestock maintenance and related disaster preparedness information. At the completion of the session, each participant received Tk 200. In Chilmari and Pirganj, the program had 800 and 930 participants respectively. The cash for work component of the project included work in ground raising, road repair, and ditch filling. Once again, the larger portion of the participants were women. Tk 30 was paid for a day of work and a limit of Tk 240 was set for each participant. In Chilmari, 3,668 people participated in the program whereas Pirganj had 1,445 participants. The survival credit component involved disbursement of Tk 2,000 for the purchase (by groups) of shallow tubewells, for agriculture inputs such as seeds and fertilizer and for livestock.

The participants included RDRS members and non-members. In Chilmari, 1,500 participated in the program and in Pirganj 342 took part. In the home gardening component of the project, 80% of the participants were women. This component involved provision of support in the form of Tk 1,900 (as part-grant and part-loan) per selected family in Chilmari and Tk 1,750 in Pirganj. This amount is for seed and irrigation. The final component of the project, fish pond excavation, was initiated in late December and thus is not relevant for the period of this report.

Conclusion

A number of factors played a role in the different nutritional and socioeconomic status of the two thanas. The overall condition of the thanas as measured by the Distress Factor System of the World Food Program (WFP) shows that Pirganj was in a better condition to benefit from relief. Further, the socioeconomic characteristics of Chilmari thana, that is the higher concentration of landless, further attributed to the difference in status.

As wheat is the cheapest source of calories and protein among the foods consumed in the rural areas, the government wheat distribution program is an effective measure to alleviate nutritional deficiencies and provide short term relief.

The RDRS/ODA targeted intervention program provides

short term relief for the vulnerable groups in terms of cash for education and cash for work components. The program will also provide long term benefits through its survival credit, home gardening and fish pond excavation components.

The vast improvement of Pirganj and relative improvement of Chilmari from October to December are the result of a number of factors. Most importantly, the timely intervention by the government and RDRS played a key role in bringing about general nutritional and socioeconomic improvement in these two thanas.

Wasting : The percentage of children 6-59 months with weight-for-height < -2 Z scores, acute malnutrition.

Underweight : The percentage of children 6-59 months with weight-for-age < -2 Z scores.

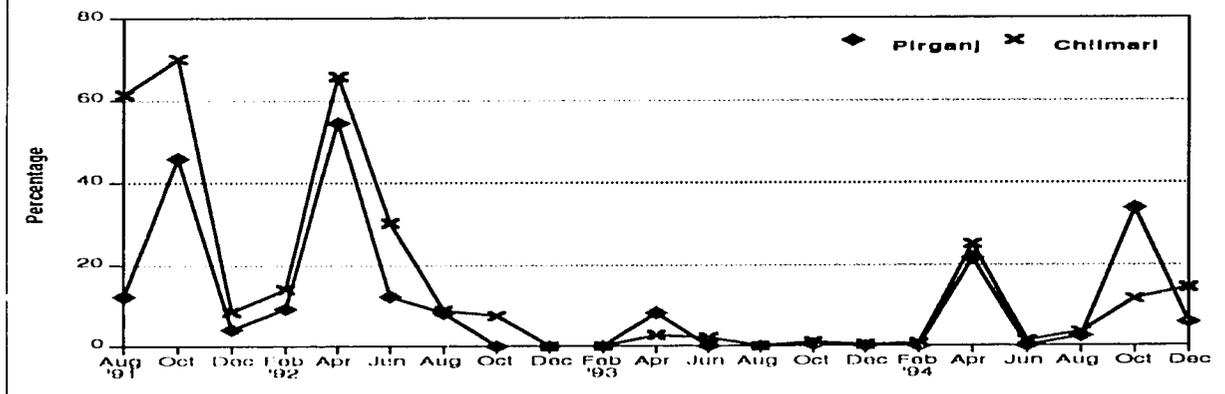
Mid-upper Arm Circumference : A child 12-59 months with a MUAC < 125 mm is considered malnourished.

Standard deviation scores: Measure how far a child's nutritional status deviates from the internationally accepted reference population (NCHS). Malnutrition is defined as less than -2 standard deviations from the mean (< -2 Z scores).

References

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Figure 4:
Percentage of Wheat Consumption by Landless Households in Pirganj and Chilmari thanas
August 1991 - December 1994



for the rural landless increase with the harvest of Aman rice and the planting of Boro rice, wheat and other winter crops. However, in 1994, rice prices have continued to rise since June. For instance, rice prices in Chilmari and Pirganj have risen from Tk 12.10 and Tk 11.60 per kg in October, to Tk 12.75 and Tk 12.00 per kg in December. This is corroborated by district level rice prices monitored by the Food Planning and Monitoring Unit (FPMU), Ministry of Food. The implication of higher rice prices for households is reduced consumption.

Rice is the preferred cereal among the rural poor (Ahmed 1994). With rising rice prices, the rural poor reduce rice consumption and shift to wheat. Studies of food consumption patterns across different income groups in rural areas show that consumption of wheat declines as income rises, suggesting wheat is perceived as an inferior commodity (Ahmed 1994). Analysis of NSP data shows that wheat consumption, measured by purchase of wheat in the market in the last seven days, was the highest in October for Pirganj. In this particular thana, 33.9% of the landless purchased wheat in October compared to 6.1% in December. In Chilmari, 11.4% of the landless purchased wheat in October, 14.5% in December; an indirect measure of relative improvement in income levels in Pirganj. (Figure 4)

Geographical Location and Distress Levels

The World Food Program (WFP) in 1986 classified all 460 thanas of the country by distress levels as determined by factors such as food grain surplus or deficit, agriculture density, landless households, employment opportunities, incidence of natural disasters, agriculture technology, infrastructure development, disease, sanitation and food prices. According to these criteria, Chilmari thana is one of the most distressed areas in Bangladesh. Severe land erosion caused by the Tista river is the primary cause of distress in the thana (Karim 1994). As a result, Chilmari thana has a very high concentration of landless households (Ahmed 1994). Cultivated land in this thana is mostly

unirrigated. The soil is of sandy and silky texture, has low organic matter content and low to medium fertility (Karim 1994).

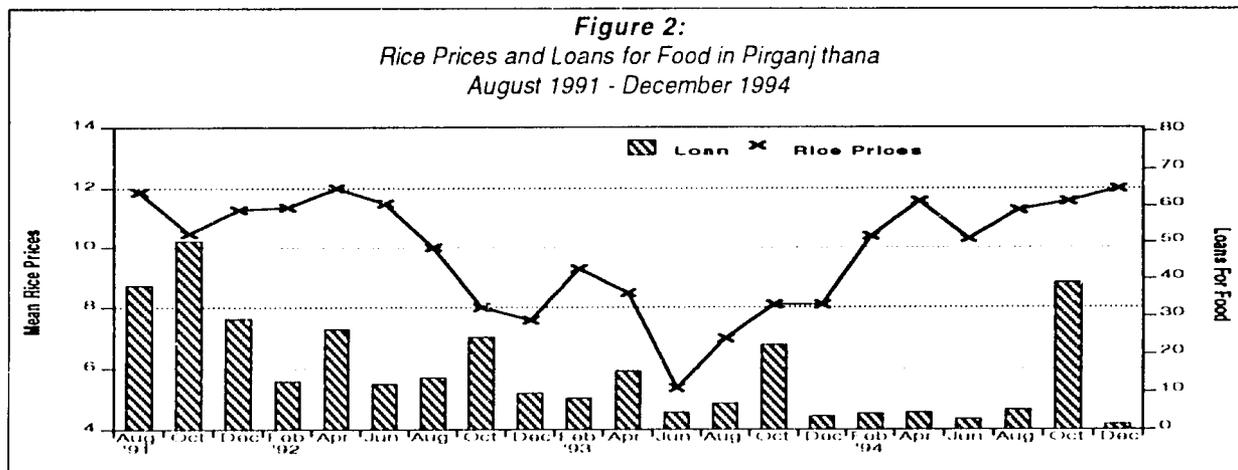
In contrast, WFP classifies Pirganj as normal-an area of no distress (WFP distress map 1986). The infrastructure is superior to that of Chilmari thana and cultivated land is mostly irrigated in the dry season. The soil texture is loamy with strong acidic top soil (Karim 1994). Organic matter content is higher than other flood plains (Karim 1994).

Analysis of NSP data shows that an average of 46% of the households are landless in Chilmari to 37% in Pirganj. This is corroborated by WFP classification. Average land size in Chilmari is 200 decimals and 300 decimals in Pirganj. In Chilmari, 44% of main income earners in the household receive permanent wages. Comparatively, 58% receive permanent wages in Pirganj. In Chilmari, 49% of the households can be classified as "marginal", having no land and only casual wages; whereas in Pirganj, 40% live a marginal existence. In Chilmari 31% of main income earners are farmers. Comparatively 42% are farmers in Pirganj. In Chilmari, 32% of the main income earners are laborers. In Pirganj, 26% are laborers.

TARGETED INTERVENTION - Government/ RDRS

In October 1994, there were a number of Government and NGO led intervention programs in the northwest region of Bangladesh. The government delivered wheat in both Chilmari and Pirganj through its Food For Work Program. Food For Work (FFW) is Bangladesh's dominant targeted income transfer program (IFPRI 1994). FFW distributes wheat as wage payment to workers in labor intensive public works programs. Varying amounts of wheat were delivered through Test Relief, General Relief, and Vulnerable Group Development programs.

The RDRS/ODA Drought Response Project began



Vulnerable Groups

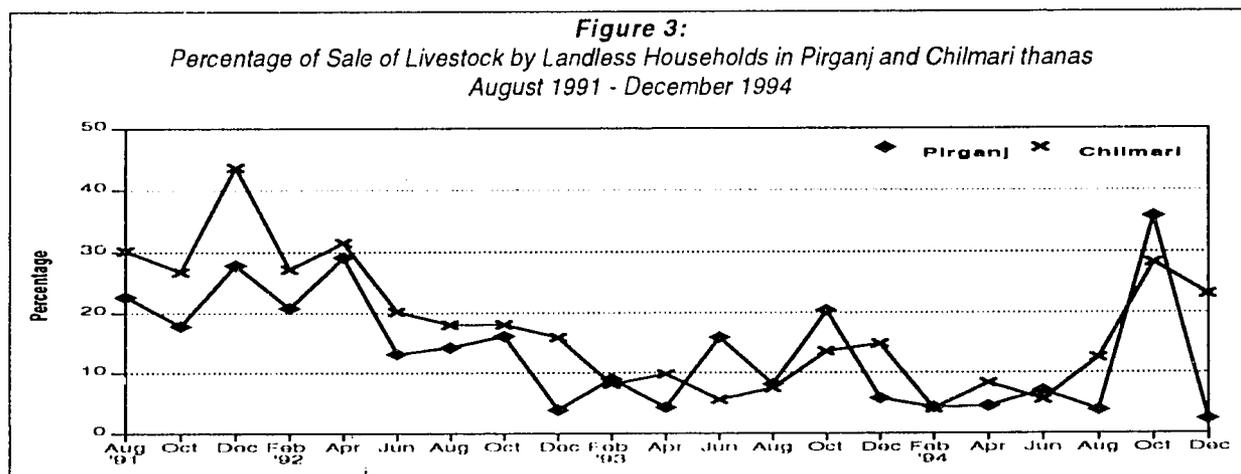
Throughout the NSP longitudinal data, children from (a) families with no agricultural land and (b) families whose principal wage earner is dependent on casual or short term labor are nutritionally more distressed than those with land or permanent wage income. These vulnerable groups returned to seasonally expected levels in the December round for both Chilmari and Pirganj. However, nutritional status of children belonging to vulnerable groups showed greater improvements in Pirganj.

Socioeconomic status of vulnerable groups also moved in similar fashion. For instance, indicators of distress, defined by the percentage of families taking loans for food and the percentage of families who have made a distress sale, measured by the sale of livestock, in the last two months was high in October but dropped in December. Since the low rainfall has coincided with the traditional lean season, the landless have been most affected. Once again, there was a significant level of difference between the two thanas. In Chilmari, loans for food consumption by landless households was 41.3% in October and 32.1% in December. Whereas in Pirganj, it dropped from 60.0% in October to 3.3% in December. In Chilmari, sales of livestock by landless households was 29.3% in October and 22.5% in December. Comparatively, distress sales in

Pirganj dropped from 35.8% in October to 2.4% in December (Figure 3). Further, sales of livestock and loans for food consumption by casual or short term laborers also moved in similar fashion with Pirganj having vastly lower percentages of distress sales (sale of livestock) and loans for food consumption. Pirganj showed remarkable improvement in nutrition and socioeconomic distress levels compared to seasonal norms. Chilmari improved, but still lagged behind Pirganj.

Market Prices and Labor Market

A factor that may partly explain the difference in socioeconomic and nutritional status is the continued rise in rice prices. September through mid-November is the worst season in the year in terms of food security. This condition is further exacerbated for the rural landless, as there is less opportunity for employment before the Aman harvest. In Chilmari, there is a higher concentration of landless households, most of whom lost their land to river erosion (Ahmed 1994). Since the low rainfall in 1994 has coincided with the traditional lean period, (March-April and September-October) employment is even more scarce for the landless (RDRS/ODA 1994). During these periods, food grain prices are typically high. In normal years, the period of December through March represents the peak season where food grain prices usually fall. Employment opportunities



For information and correspondence contact:

Mr. Shawn K. Baker, Country Director
Ms. Mya Kirwan, Project Officer
Mr. Ravi Loganathan, Project Officer
Helen Keller International, Bangladesh
P.O. Box 6066 Gulshan
Dhaka - 1212, Bangladesh

Telephone: 880 - 2 - 814234/816156
Fax: 880 - 2 - 813310

Dr. Martin W. Bloem, Regional Technical Director

Helen Keller International, Indonesia
P. O. Box. 4338
Jakarta, Indonesia

Telephone: 62 - 21 - 526 - 3872
Fax: 62 - 21 - 525 - 0529