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Life in the Chars in Bangladesh Improving nutrition and supporting livelihoods through homestead food production

The riverine sand and silt landmasses known as char in Bengali are home to over 5 million people in Bangladesh.¹ These areas are highly vulnerable to sudden and forceful flooding as well as erosion and loss of land, which makes living in the chars both hazardous and insecure. Many char dwellers struggle to produce or buy enough food to eat, and malnutrition and micronutrient deficiencies are more common than elsewhere in the country. Solutions to these problems require approaches that help poor households make best use of their available resources and cope better with the difficult environment. This bulletin describes how Helen Keller International's homestead food production program provides support to fragile livelihoods in the chars and improves the well-being of the entire household by promoting specially adapted low cost technologies for gardening and livestock-raising, improving food security and dietary practices, providing employment for women and a source of income for the household.

The chars - some midstream islands and others attached to the mainland - are created from river sediment and are in a constant state of formation and erosion. Emerging chars create new areas for settlement and cultivation, an important resource in a land scarce country such as Bangladesh. However, a constant threat of riverbank erosion and flooding, combined with a lack of physical infrastructure, government services and employment opportunities in the chars, makes for a vulnerable, difficult and fragile way of life.

Char dwellers are considered poorer than the mainland population and are increasingly becoming the targets of efforts to reduce poverty.¹ Nevertheless there is still very little quantitative information on the health, nutrition and food security of these vulnerable people, partly because they are highly mobile and access to the chars is physically difficult. However, the HKI/IPHN Nutritional Surveillance Project

(NSP) extended its national surveillance system into char communities in Kazipur, Nagesawari and Rajibpur sub-districts between December 2001 and September 2002. These data provide a useful profile of health, nutrition and livelihood conditions in the chars that can be compared with the rest of rural Bangladesh because the NSP also collects nationally representative rural data².

Disasters, health and nutrition in the chars

This bulletin focuses on data collected during the Monsoon months of August and September, a particularly difficult period for most char dwellers when the incidence of floods and erosion usually peaks^b. Data collected by the NSP during these months show that char households are about 13 times more likely to have been affected by these disasters than households in rural Bangladesh (see Table).

Floods and erosion disrupt the lives of char dwellers. Floods damage or destroy crops.

^a Chars vary considerably in many characteristics, including ecological and living conditions, and so these chars may be different from other chars in the country.

^b Many of the differences between char dwellers and the mainland population that are described in this bulletin were also observed at other times of the year. All data collected in Nagesawari and Rajibpur and about 70% of data collected in Kazipur were from char households.

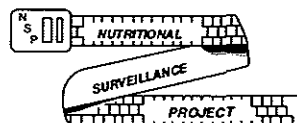


Table 1. Percentage of households in the chars and rural Bangladesh who were affected by crises during the two months preceding data collection in Aug/Sep 2002.

| Crises | Char (n=792) | Rural Bangladesh (n=8999) |
|-------------------|--------------|---------------------------|
| Natural disaster: | | |
| Flood | 52 | 4 |
| Riverbank erosion | 13 | <1 |
| Household lost: | | |
| Crops | 44 | 1 |
| Livestock | 16 | 3 |
| Land | 10 | 1 |
| House | 5 | 1 |
| Employment | 4 | 2 |

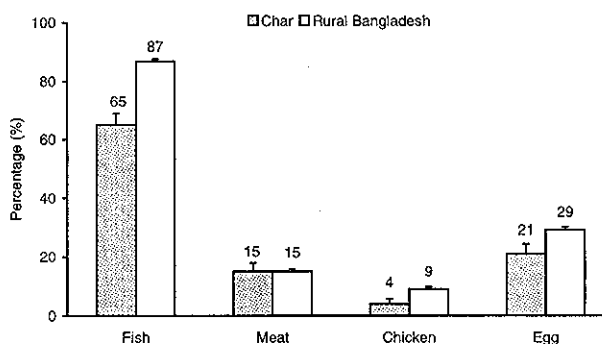
homes, water and sanitation facilities and other assets, and hinder access to food, medical care, schools and work. The victims of erosion loose their settlements, agricultural land and employment, and are forced to move elsewhere, sometimes on a yearly basis. About one half (44%) of char households lost livestock, 16% lost livestock and 10% lost land during the Monsoon months, compared with only 1-3% in rural Bangladesh (see Table). Loss of employment and a house were also much more common in the chars.

These disasters and crises have substantial economic costs which mean that households often face difficulties in paying for basic essentials, including food and health care. Households are sometimes forced to take a loan to buy food, a clear sign that they are food insecure. This strategy was used in the previous two months by 17% of char households, compared with only 11% of households in rural Bangladesh.

Poor households tend to spend most of their meager food budget on cheap staples such as rice. Animal products such as eggs, fish, chicken and meat are better sources of micronutrients than these staples but are also much more expensive. Figure 1 shows that young children consumed animal foods less frequently in the chars than in rural Bangladesh, which suggests that the quality of their diet was lower.

Sanitation in the chars is also poor. Only 11% of households had a closed latrine compared with 29% in rural Bangladesh. This may explain why the prevalence of diarrhea in both children (12.2%) and mothers (1.8%) was higher in the chars than in rural Bangladesh (7.0% and 0.6%, respectively).

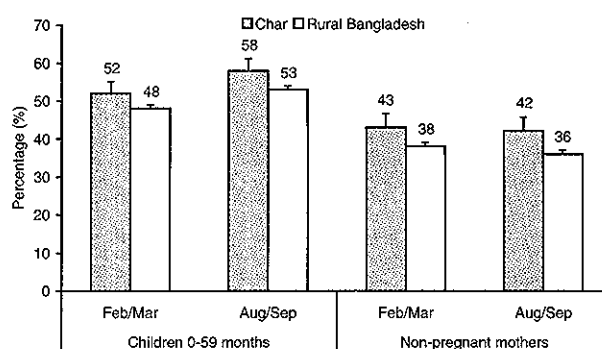
Figure 1. Percentage of children aged 24-59 months who consumed animal foods at least twice in the previous week in the chars (n=563) and in rural Bangladesh (n=6,225) in Dec 2001-Jan 2002. Bars indicate 95% confidence intervals.



As dietary intake and diseases such as diarrhea directly cause malnutrition, it is not surprising that underweight in children and chronic energy deficiency in mothers was more common in the chars than in rural Bangladesh (Figure 2). Micronutrient malnutrition is also a serious problem: the prevalence of maternal night blindness, an early sign of vitamin A deficiency, in the chars was more than double the prevalence in rural Bangladesh (Figure 3).

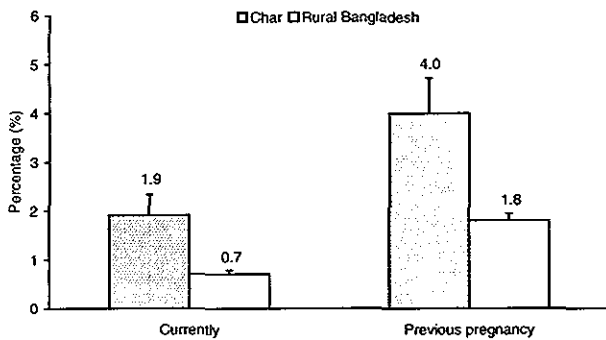
The chars are in principle covered by normal government services, but in practice they are not well served. For example, the low coverage of the measles immunization^c (45% in the chars vs 84% in rural Bangladesh) and outreach activities of Family Welfare Assistants (only 42% of char households were visited during the previous 6 months vs 70% in rural Bangladesh) indicates that the performance of immunization and health extension services in the chars is poorer than on the mainland. This is partly because government programs suited to the unique

Figure 2. Percentage of underweight children aged 0-59 months (WAZ <-2 SD, n=23,293) and non-pregnant mothers with chronic energy deficiency (BMI <18.5 kg/m², n=17,896) in the chars and in rural Bangladesh in Feb/Mar and Aug/Sep 2002. Bars indicate 95% confidence intervals.



^cMothers of children aged 12-23 months were asked whether their child received the measles immunization at age 9-11 months.

Figure 3. Percentage of night blindness in mothers currently and during their previous pregnancy in the last 3 years in the chars (n=3,974) and in rural Bangladesh (n=45,000), Dec 2001 to Sep 2002. Bars indicate 95% confidence intervals.



needs of people in the chars are yet to be devised and implemented. An increasing number of NGOs are addressing development needs in some chars, but they too are not reaching many needy households. For example, only 19% of char households were members of NGO microcredit or savings groups, compared with 32% in rural Bangladesh.

Despite poor living conditions, households continue to live in the chars because they simply have no alternative. Moving the char dwellers to safer areas is not feasible because land is so scarce in Bangladesh and is becoming increasingly so with the rising population. And experience has shown that attempts to prevent erosion and flooding through structural measures requires constant and costly maintenance that is often not sustainable.¹ Interventions should therefore aim to support the livelihoods of char people so that they can make best use of their available resources and cope better with the hazardous environment.

Homestead food production in the chars

There are few opportunities for employment in char areas and most people make a living from growing crops, raising cattle and harvesting fish. Land is the most important resource in the chars, but poor households lack the support they need to utilize it fully, including technical advice and training, agricultural supplies and market access.

There is great potential to improve household food security, nutritional status and livelihoods in the chars through household food production. Since 1994, HKI has provided technical assistance and support to char households in the northwest and south of the country to increase the production and consumption of micronutrient rich foods that are not normally within

the economic reach of the poor. In many of these areas, HKI has found that the char people do not grow vegetables but are very interested to do so. Furthermore the participation of women in gardening, combined with the generation of income through the sale of surplus produce, means that mothers of young children are less likely to work outside the home, a common practice in the chars that creates problems for child care.

With support from the Netherlands Organization for International Development Co-operation (NOVIB), HKI has recently expanded its homestead food production program to chars and low-lying flood plains in 10 sub-districts in northern Bangladesh. Over the next 3 years, the program will target 10,000 households with the seeds, seedlings and saplings, training and practical advice they need for gardening. Recently, HKI demonstrated that small scale animal husbandry is simple to integrate into home gardening programs at little extra cost, thereby promoting the homestead production of animal products that are excellent sources of micronutrients, including poultry, eggs, milk and fish.² The char program is therefore providing households with chicks and vaccines to raise chickens for eggs, and is developing opportunities to raise milking cows where there is interest and capacity. HKI is also working to establish links between the char households and agricultural extension services, agricultural suppliers and local vendors of garden and livestock produce so that access to technical support, supplies and markets is sustained after the program ends. All women are given nutrition education to ensure that the foods they produce are consumed by the household and have the greatest possible impact on the nutrition of young children and their mothers.

With almost 10 years of experience in the chars, HKI has developed strategies for homestead food production that are adapted to the special ecological conditions. HKI has identified varieties of vegetables that grow in poor quality soils and that grow quickly and can be harvested before the floods begin. Household food producers are taught how to grow these vegetables on raised beds to limit flood damage and how to grow vines on rooftops and trellises throughout periods of flooding; how to house, protect and feed cattle when flood waters restrict grazing; methods to prevent riverbank erosion and encourage the accrual of silt, such as planting trees and grasses; and ecologically sound techniques to improve the quality of the soil, such as composting.

Conclusions

Households in the chars are more food insecure, the quality of the diet is worse and more children and women are malnourished than elsewhere in the country. This is partly due to the high vulnerability to flooding and riverbank erosion, which attracts only those with no better alternative, but also because there are few opportunities for employment, inadequate infrastructure, a lack of government and NGOs services, and because opportunities for homestead food production that are adapted to the special ecological conditions have yet to be developed in many areas.

Recommendations

Interventions are needed to improve living conditions in the chars and to help the char dwellers make best use of their available resources:

- Homestead food production programs that increase the production and consumption of animal and plant foods, employ women, provide income for the household, improve market access, and reduce the risk of crop and livestock loss to flooding and erosion should be included in strategies to improve household food security, nutrition and livelihoods in the chars.
- Direct nutrition interventions are needed to prevent, control and treat malnutrition and micronutrient deficiencies, particularly among young children and women, including micronutrient supplementation, nutrition education, and nutritional rehabilitation and direct feeding programs for the severely malnourished.
- Households need better sanitation facilities and access to health services throughout the year, especially during the Monsoon.
- Nutrition and health surveillance should be conducted in the chars to provide the data needed to formulate advocacy material, to design, monitor and evaluate policies and programs, and to track progress towards targets for food security, health, nutrition and poverty.

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