

# **Rural Housing & Affordable Innovation**

**Implementing Building for Safety in Dinajpur District, Northern Bangladesh**

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*A report on*

***Housing & Hazard's pilot project with ChetonarDak in two volumes :***

***Volume 1 : PARTICIPATORY IMPLEMENTATION STRATEGIES Project***

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The main objective of the Housing & Hazards Group is to make safer houses available to vulnerable people in regions of the world affected by natural hazards.

The Group's fast pilot project was designed to explore appropriate methods for communicating building for safety information within a rural low-income community where the written word is not always understood.

This report may be quoted freely but please acknowledge its origin as the Earth Resources Centre Report ERC/97/115.

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## **SUMMARY**

***"The only form of building improvement programme which has the potential to result in widespread improvements is one which changes the building decisions made by the poor in their own construction projects, designed and paid for by themselves" - Dudley and Haaland (1993)***

With this in mind a building improvement programme was embarked upon in Sundarban village, Dinajpur district, northern Bangladesh. The programme aimed to provide an alternative to the current trend in Bangladesh to design and promote prototype "affordable" houses. This report charts the progress to date of that ongoing programme.

Sundarban village lies on the edge of the piedmont plains in the north western corner of the country. This relatively raised area is not normally known for flooding and is away from the main cyclone affected areas around the Bay of Bengal. Therefore, it does not have much history of international emergency aid, nor, until recently, any aid at all. However, since 1991 it has been struck by a major flood (September 1991) and two cyclones (September 1995 and April 1996) which have all been as devastating locally as the larger events felt in other places.

The programme has developed a participatory approach which can be used to help villagers explore the range of options open to them when they make their building decisions. The programme was initiated by the Housing & Hazards group, Exeter University. A volunteer from the group spent nine months living in Sundarban village developing the programme with Chetonar Dak, a grass roots community development NGO which has been working in the village since 1991. Chetonar Dak is now continuing the programme in Sundarban village and has plans to adapt it for use in other areas.

After an initial period of research into the state of housing and the ways in which local people exchanged and learnt ideas, a project was developed which was funded by the Grameen Trust. The implementation of this project by Chetonar Dak and evaluation of its effectiveness forms the main part of this report. The project comprised three complementary activities which were:

1. A course of themed workshops for discussion and training
2. The construction of a building to demonstrate improved techniques
3. A traditional song team to promote improved building messages

This approach, when implemented by a grass roots organisation, was successful in motivating villagers to reassess the way in which they currently build and to consider innovative adaptations to reduce the vulnerability of their housing. The innovations considered represented an extension to the existing building technology, not a diversion from it.

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### Cover Photographs

Volume 1: A homestead in Hari Para, Sundarban village Volume 2:  
Workshop participants evaluating bamboo joints

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## **Introduction**

Despite rapid urbanisation, the majority of the world's population still lives in rural areas. Amongst the many pressing needs of rural people in the poor countries of the world is the need for secure, affordable and lasting housing. This need is often not met. Increasing population puts ever more pressure on the already scarce supply of natural building materials with which the majority of rural housing is built. Tropical climates and insect attack causes rapid decay of these materials making the housing made from them vulnerable to natural hazards.

Bangladesh is the eighth most populous country in the world and also one of the poorest. 80% of the population lives in rural areas (BBS 1996) in housing constructed from bamboo and mud. Ahmed (1996) has shown how the price of bamboo has almost tripled in the decade 1980-90. Consequently many people cannot afford to maintain their houses properly and allow them to fall into a vulnerable state of disrepair. Flooding, storms and cyclones annually wreak havoc on these houses. In the aftermath of these disasters, organisations often seek to provide improved housing. Hodgson (1995) has, however, identified that the priorities of householders can make this an inappropriate response. A longer term development is necessary.

Government organisations and non-governmental organisations (NGOs) alike recognize the state of rural housing to be a key development issues for Bangladesh. The focus of action to date has been to design an "affordable house"<sup>1</sup> Although there are variations these designs tend to have several key factors in common:

- The assumption that a single design will be universally appropriate.
- The replacement of key structural bamboo members with reinforced concrete cement (RCC) components.
- A high cost which means that a credit scheme is usually arranged for the householder, the repayment of which can cause severe problems. They typically cost 10,000Tk to 20,000Tk compared to typical rural house prices of 2,000Tk to 12,000Tk.<sup>2</sup>

In contrast to this Chisholm (1979) identified various simple and cheap improvements which could be made to Bengali bamboo housing without the need for credit. These improvements were complementary and adaptable so that a householder could choose which were appropriate and could use them on any size or type of house. Although the technology required to implement these improvements already exists at the village level in Bangladesh, little work has been done to this end. This project aimed to tackle the issue of implementation of these and similar improvements to rural housing.

<sup>1</sup> The organisations involved in designing affordable housing include:

Grameen Bank - Housing loan: 6,500Tk - 15,000Tk - Source: Barua (1996) Adarsha Gram - Cluster Village Project: 11,000Tk - Source: Sener Ingenieria y Sistemas SA (1996) Caritas - Low cost housing: approx. 11,000Tk - Source: Sener Ingenieria y Sistemas SA (1996)

Housing & Building Research Institute (HBRI) - Prefabricated housing: 15,000Tk

Source: Interview with HBRI engineer. Sept 1996 (see photograph 4 in Appendix B)

Local Government Engineering Department (LGED) - Low Cost Model House: 18,000Tk - 23,660Tk

Source: LGED (1996)

<sup>2</sup> 1US\$=42Tk(Taka)-1997

## ***Terms of Reference***

### ***Location***

The project took place in Sundarban village, Sadar Thana, Dinajpur district in northern Bangladesh. The project initially worked towards implementation in a single village whilst assessing the degree of variety in the housing practice over the district.

### ***Implementing organisations***

The project was carried out by Chetonar Dak, a grass roots NGO, with the aid of a British resource person from the Housing & Hazards Group (H&H). Chetonar Dak has been working towards community development in Sundarban village since 1991, funded by the Tiverton-Sundarban Support Group, a partner organisation which is a registered UK charity. Chetonar Dak's core programmes are in education, training and savings groups.

### ***Duration***

The H&H resource person worked with Chetonar Dak from September 1996 to June 1997. Chetonar Dak is now continuing to work to achieve the aim of the project in Sundarban village and in other areas.

### ***Aim***

Reduce vulnerability to hazards by improvements to housing

### ***Objectives***

- Describe traditional building practice
- Propose intermediate level improvements
- Implement improvements in Sundarban village
- Build capacity for further projects in northern Bangladesh

### ***Participatory approach***

The project aimed to be participatory in its approach. Chetonar Dak's staff were involved at all stages of project planning and implementation. Villagers were consulted and the objectives and methodology of the project were subject to on the spot review. The implementation project (described below) aimed to be integrated and sustainable and as far as possible villagers were encouraged to feel a sense of ownership and take control.

### ***Project overview***

- Assessment of current government / NGO approach to rural housing
- Survey of houses and mapping of the village
- Interviews with local builders and householders
- Evaluation of local media and teaching / learning strategies
- Development of techniques with a local builder
- Grass roots implementation project comprising:
  1. A course of themed workshops for discussion and training
  2. The construction of a building to demonstrate improved techniques
  3. A traditional song team to promote improved building messages