

THE HOUSING AND HAZARDS PROCESS IN BANGLADESH - WHERE NEXT?

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Introduction

The objective of Housing and Hazards is to make stronger housing available to the most vulnerable people in the world to help protect them against natural hazards. This simple objective includes many elements which often intermingle to create complex interactions and obscure the basic technical aspects of building better homes.

For the past three years, the Higher Education Link between BUET and Exeter has sought to clarify what is involved in that aim in the case of Bangladesh. Activities of the link have included researching grass-roots opinions from village communities, studying the properties of non-engineered structures raising awareness of the issues among the nation's decision-makers. The link has deliberately sought to take a holistic view of shelter issues because previous experience has shown that technical improvements cannot or will not be taken up unless all socio-economic impediments to development can be satisfied.

There remains much to be done but this is an opportune moment to review the promising initial outputs of the BUET-Exeter link programme and to draw appropriate conclusions regarding the best way to take them forward. Educating the next generation would be a valuable contribution of the link (see Fig. 1).

A broad summary of Housing & Hazards and link activities, 1996-2000

Descriptions of many of the BUET-Exeter link activities have been published in the proceedings of the first two International Seminars, held in December 1996 (*Implementing Hazard Resistant Housing, 1999*) and in February 1999 (*Affordable Village Building Technologies, 2000*). Those activities may conveniently be considered in three categories:

(a) Grass-roots research and practical implementation, (b) Academic research into properties of materials and improved methods of working, and (c) Dissemination of the findings among opinion-formers and decision-makers.

Grass-roots research:

Before the establishment of the link, initial studies were made in the village of Sundarban, about 20km east of Dinajpur. This work, undertaken in collaboration with a local NGO, Chetonar Dak, has been described by Hodgson

& Carter (1999a and 2000). The nine-month study started with a survey of housing forms in the village and of housing procurement which showed (as expected) that the most vulnerable families build their own homes, usually with the help of experts who make the roofs. Specialist mud-wall builders may be employed by the slightly more affluent households. The second phase of the study was funded by Grameen Trust and DFID and included a series of action-research workshops which pooled ideas and experiences among a range of householders and traditional builders. The aim was to agree on best practice; a demonstration house was built which incorporated eight technical improvements, adding a marginal 8% to the unimproved cost of the building.



Figure 1 : Educating the next generation should be part of the Housing & Hazards remit

A six-month study of the impacts of the first study was made two years later (Magne, 1999). This concluded strongly that even the small marginal costs of the proposed technical improvements may often be unaffordable when a household is stretched financially (this study was made shortly after the disastrous 1998 floods). With the best will in the world, people will only include improved technologies when money is available; for those living from day to day, it is not always so. There were other important sociological findings which will be discussed later.

Using the experiences from Dinajpur District, a further series of village studies is being undertaken in Manikganj and Gopalganj districts to explore regional variations in approach to housing. Initial findings from these studies are described elsewhere in this volume by Ahmed.

Academic studies

Staff and students in both BUET and Exeter have undertaken a range of laboratory studies to investigate the properties of common building materials (and appropriate modifications to those materials) and the behaviour of structures under hazard loading (especially wind). Since analysis of non-engineered structures is time-consuming and prone to error due to component variations, there has been considerable emphasis on the physical testing of whole structures both at life-size in BUET and at smaller scales in Exeter's wind-tunnel. Descriptions of this work are included in Section 1 of *Affordable Village Building Technologies* and elsewhere in this volume.

The Housing and Hazards activities have linked to studies of the wider aspects of disaster relief and management (see, for example, the papers by Alam and Hussaini et al. in *Affordable Village Building Technologies*), which have helped to give a broad background to the link programme.

Raising awareness of housing issues

It is important that law-makers and opinion-formers are aware of the socio-economic aspects of housing for marginalised groups. Otherwise, ignorance of the issues can easily result in new policies that adversely affect the poor. Experts who could be helping may at the same time remain inaccessible to those who need their help.

The two international seminars have helped to bring housing for the rural poor more into focus. Both produced important sets of recommendations, based on lengthy discussions, which have helped to shape the link programme. These have been supplemented by a series of annual Workshops for UK-based workers held in Exeter and summarised by Hodgson (2000). The Exeter Workshop discussions have been important in bringing a wider view of development issues and in providing some directions for the link programme in Dhaka.

The BUET-Exeter link is collaborating with Gramscen Trust for Poverty Alleviation and has pioneered an informal forum for organisations working in housing programmes (Ahmed, 2000) to facilitate sharing of experiences. To support this, a range of materials, including a video and instruction materials, has been produced (Hodgson, 2000a, Seraj, 2000, Seraj & Hodgson, 2000). Papers contributed to the International Decade for Natural Disaster Reduction publications (eg. Hodgson & Carter, 1999b) have helped to publicise the work internationally.

Relevant learning experiences from the field

A full understanding of the whole process of home procurement and

ownership is an essential prerequisite to any discussion of the way forward. This section summarises what has been learned so far from the community-based fieldwork by Carter (1997), Magne (1999) and Ahmed (1999).

Vulnerability issues

Magne (1999) says that 'poverty is a persistent bar to progress'. She points out that poverty is not merely lack of money; the concept also encompasses uncertainty of income. Most poor rural families have few financial reserves and have irregular incomes which may be highly seasonal, easily overstretched by medical or other emergencies and susceptible to adverse weather conditions. Against this background, few people can afford to take the long-term view needed for planning home improvements. Indeed, Carter's workshops included an exercise designed to illustrate the long-term financial savings which can result from higher initial investment in stronger materials. The exercise was well received at the time but had been forgotten by all participants within two years. Provision of credit has been suggested as an economic mechanism having great potential for funding long-term housing activities. *Implementing Hazard-Resistant Housing* recommended that 'The link between loans for poor families to enable them to secure safer dwellings is of the utmost importance as has been demonstrated by the Grameen Bank experience and should be promoted with a strong emphasis on hazard-resistant design and construction'. However, it was the view of most of the Housing and Hazards village workshop participants that taking credit was a bad thing to do. They saw borrowing money as useful for setting up small businesses but they had all seen the consequences of taking out too many loans and subsequently defaulting, either because there was insufficient income or because of some economic stress, usually due to illness. Ahmed (1999) reports that housing loans commonly do not reach the poorest 10% of the population for such reasons.

There is also a risk to the loan giver, particularly if loans are offset against physical collateral (including houses). In the aftermath of a major disaster that affects many savings and loan customers, such as flooding, the savers will need to withdraw money and the borrowers may have lost much of their collateral and be unable to maintain payments. The consequence is financial stress for the lending institution. Clearly, credit needs to be considered carefully as just part of a basket of financial supports for homeowners. Savings and insurance may be equally important to credit, according to the Housing and Hazards fieldwork and the second Dhaka seminar added these as financial tools to be investigated.

The role of technical research

Not everyone in a village has knowledge of all the technologies which are

available in local markets. However, most basic techniques had been tried in the Dinajpur study area and the workshop approach provided an opportunity for villagers to share experiences. This pooling of ideas is a vital first step in promoting awareness of shelter issues.

It is hoped that the process of questioning will, in time, lead to a raising of questions to which there are no immediate answers. This process will then need to incorporate feed-back from academic research from institutions such as BUET.

Constraints on the autonomous spread of knowledge

One aim of the Housing and Hazards rural workshops was to promote natural or autonomous spread of the improved technologies through word of mouth around the Dinajpur district. Although the workshops created interest in neighbouring villages and the song-team messages were heard outside the study village, the ideas do not seem to have been taken up outside of the original group of workshop participants.

One reason, according to the second study, is that the poorest members of the community, who could benefit the most, are not sufficiently self-confident to pass on their experiences and knowledge. *'I am only a little person - people don't listen to me'*, they told Samantha Magne (1999). There is also, Magne found (as Maskrey (1999) had noted) a general aspiration among all people to use 'modern' materials such as concrete or brick. People who cannot afford such materials may think it not worth bothering with less. This aspiration to modernity also extended to the local NGO which largely ignored the workshop messages even in its own construction work.

These observations point to a need for integrating the messages more widely into community education programmes in such a way that they link with the workshops.

Size is important

There was a clear message from the initial studies that demonstration projects must bear close resemblance to the onlookers expectations and circumstances. This was typified by the realisation that most of the poorest villagers could not relate to the demonstration house built in 1997. This house is identical in structure to about 50% of the local dwellings. However, because it was to be used as a training centre by the local NGO, it was built about twice the size of a typical home and this means that many people do not recognise it as relevant to them. *"This is a rich man's house. I could not afford anything like that"* was a response commonly heard by the impact study.

The demonstration house has the added disadvantage that it is not inhabited and hence no one is responsible for its daily maintenance. Homesteads are traditionally maintained by the womenfolk who regularly replaster surfaces, sweep floors and inspect for insect damage. Although the strengthening technologies have helped the demonstration house to survive, their benefits have been reduced by the lack of maintenance. The conclusion is that demonstration structures should be used as homes in order to mirror the function that they are demonstrating. This is being followed up in H&H projects in Manikganj and Gopalganj (see Fig. 2).



Figure 2 : The Demonstration House in Dinajpur

Programmes must be sustained

Not everyone rebuilds every year. The pressures of every day survival cause building for safety messages to fade quickly from memories. Therefore, programmes such as the Housing and Hazards workshops must be repeated and reinforced each year to have lasting impact and to ensure that the messages are received at the right point in each household's building programme. Essential messages should be transmitted and repeated using a culturally appropriate medium; Initial studies have had some success with the use of a song team. The outputs of the Song Team are now available on video for use in support of community programmes anywhere in the country.

Further research will suggest ways of assisting construction work with supplies of materials for those who cannot afford improvements. The conclusion

from the impact study was that a local coordinator should be trained to undertake follow-up building for safety activities; the designation para-architect, analogous to the village para-medic, has been coined for this function (Chisholm, 2000). Another participant in the Exeter Workshops suggested the term 'bare-foot engineer'; the final choice of title will doubtless be decided by the profession of the first implementing agent!

Focus on end-user

All the fieldwork so far, both in Bangladesh and abroad (Davis 1999, for example) has shown the importance of focusing activities on and through the end-user, the householders in the villages. Their needs and aspirations must be integral to the process of developing the rural housing stock. Key issues which demand end-user involvement include:

Appropriateness: Technologies must be appropriate to current building practices so that they can be readily incorporated into existing buildings or new traditionally-built ones by both unskilled owners and by local artisans.

Availability: Innovative technologies must be available in local markets at the time of building and be understood by the users. They have to be accessible to the low-income groups as well as available. They are no use if no one knows where to find them.

Affordability: Improvements must be affordable within existing budgets or they will not be taken up. Research into appropriate mixes of credit, subsidy, insurance and low cost is still needed. Careful study of the pressures which are driving price increases is also called for.

Clear benefits: Users of the new technologies need to appreciate the benefits that those technologies will bring so that they can evaluate the advantages that their extra work or cost will bring.

The initial Housing and Hazards studies have started to unravel the complexities of the "simple" way of life in rural areas. The holistic, multi-sector approach needed to encompass the technological and socio-economic factors outlined above may be beyond any single organisation to address completely; the objective of the Forum is to bring together a network of complementary bodies which can start to develop national approaches to a national need.

Towards a national agenda

As described by Ahmed (elsewhere in this volume) current research is extending the fieldwork experiences to test their replicability in other parts of Bangladesh. The next step will be to embark on a nation-wide programme designed to provide all rural dwellers with the opportunity to upgrade their

homes. This will be a large undertaking.

The Housing and Hazards Shelter Forum creates a national focus group in Bangladesh in which concerned organisations can get together to share experiences and map out a programme for fine-tuning the initial studies. The Forum should also act as a lobby to national decision-makers to raise awareness of poverty issues and of the role of better housing in alleviating poverty (see Fig. 3).



Figure 3 : H&H Forum Workshop in Dhaka

It has become clear that housing in rural, low-income areas is a very complex subject. As with so many development issues, raising levels of education is the key to progress. Ian Davis (1999) insisted that adult learning must be practical ('Doing by repetition'). At the same time, access to schooling for all children will help them to develop the learning and reasoning skills which all homeowners will need to build more safely in the future. Therefore, Housing and Hazards activities should include materials for use in schools at all levels to support the Government's drive for Universal Primary Education.

Conclusions

The Housing and Hazards link with BUET has made a good start in obtaining valuable social and technical information for use in promoting better home-building in Bangladesh. It has succeeded in raising awareness of the

national benefits to be gained from secure housing for all. This momentum should not be lost; Andrew Maskrey's (1999) maxim 'Perfect is the enemy of good' should serve as a reminder to keep progressing, taking each step in turn.

The next step should be the consolidation of learning points followed by national coordination of appropriate building (and supporting education) programmes. The Forum meetings will play a big part in extending the work and in agreeing a common approach to development of the role of the para-architects (or bare-foot engineers).

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