Part I: RELEVANT DEVELOPMENT ISSUES

Communicating with Householder

A core issue of this project has been in considering the communication of building ideas to those who need them; the householders themselves. Some of the technical ideas looked at in this project came from the study carried out by Chisholm (1979) nearly 20 years ago and from the more recent publication by Cobum et al. (1995), other technical ideas came from the shared knowledge and experience of the villagers. There was no significant element of novel technical input to this project. The purpose of this project was to bring *existing* outside knowledge into the community and develop the *existing* internal knowledge within the community with a view to implementation.

The *Building/or Safety Initiative* of the Overseas Development Administration UK (renamed the Department for International Development) has explored the problems of communicating building knowledge in detail and suggests strategies to tackle these problems. Community participation is seen as a foundation for effective communication and appropriate teaching strategies must be developed which
encourage active learning in particular answering the question "Why should I do this?" not just "What should I do?".

Rural Bangladesh, in common with many poor areas of the world, suffers from low literacy rates. In 1991 the adult literacy rate for the country as a whole was 35% (BBS 1996). Pictorial communication is an alternative which lends itself well to building ideas. Dudley & Haaland (1993) however have shown that there are many pitfalls with illustrated communication. Stylistic conventions which are not known, problems of perspective, misunderstanding of sequential drawings, abstract symbols and problems of scale can all mystify those who are unused to interpreting illustrated messages.

Aysan et al. (1995) have evaluated different types of group and audio-visual teaching methods with respect to different target audiences. Formal classroom training and reference books are particularly inappropriate for artisan builders and occupiers. They cite appropriate alternatives as informal "on the job" training, observation of building failure damage patterns, models of buildings, full size demonstration buildings, posters, booklets, comic books, films, videos and drama / puppet theatre. Also the degree to which the learning is active correlates with the degree to which the messages will be retained. Some of these teaching methods can tackle problems of illiteracy, especially if any illustrations used are done appropriately, detailed line drawing being suggested by Dudley & Haaland to be often the best and most economic choice.

A further problem in Bangladesh lies in the extremely dispersed nature of the target population. The structure of the village building practice means that it is not enough just to teach local builders, dissemination must reach the householders and there are roughly 20 million rural households in Bangladesh. Not only is the target population very large but it is scattered in dispersed rural settlements. Villages are not clustered round a nucleus but are spread out. People congregate for markets and the market place is the traditional venue for social communication and advertising. This does not include the whole population, specifically neglecting women.

Despite this problem of a large and dispersed target population it is by no means necessary for development organisations to communicate building ideas to every individual in the country. There is already a well developed practice of learning from each other through demonstration that can be seen in the pattern of building in rural and suburban communities. Small pockets of a particular housing can often be seen, indicating that the householders are copying ideas off their immediate neighbours. Sometimes this is just a particular style of traditional housing but sometimes it is a more obvious case of innovation. For example in a para just north ofDinajpur town the dominant building type was bamboo framed houses with unplastered woven bamboo mat walls. Over half of the houses had the bottom foot of the mat wall painted with old motor oil to protect it from rot and insect attack. Photograph 3 (Appendix B) shows one of these houses. When asked the householders clearly explained the benefits of the system; comparing painted bamboo mats with unpainted bamboo mats and showing how they had lasted better. The respondents said that they did not know where the idea had originally come from, they just knew what to do and why. Despite the practice being common in this para in surrounding paras it was not seen at all. It would be interesting to trace the origins of the idea but we can nevertheless see from the pattern of "bubble development" in this and other areas of Bangladesh that people are learning from their neighbours. It would be unusual if this were not the case since Bangladeshis are a very sociable people but perhaps this is particularly true with learning building ideas because most innovations are clearly visible and would draw comment from visiting neighbours.

For the purposes of development this suggests that we should disperse our communication efforts. If a few people scattered over a wide area change the building decisions they make then, at least in some of their localities, there would likely be replication by neighbours. If the same number of people in a concentrated area changed their building decisions whilst their would almost certainly be replication it would most likely be limited to the immediate vicinity. In the first instance the replication would be taking place in a number of different locations and would ultimately have more effect.

The task then is to communicate to these few people who will influence others. They must be given enough of an understanding of the issues such that they are able to articulate the information they have leamt and to pass it on.

Local Media

TV/video

TV and video are strong audio visual media which can communicate an enormous amount of information. Although a passive learning tool this media tackles problems of illiteracy and difficulties of illustrated communication. Because TV is still relatively rare in Sundarban village it is immensely popular so people would be highly motivated to watch educational programmes.

National television advertising or even broadcast educational programmes would most probably reach a very large audience but would be very expensive. Family planning, for example, is advertised on Bangladesh TV but to discuss the possibilities for broadcasting building advice is beyond the scope of this report.

A more local use of this media is through video. Televisions & video players can be easily hired, if not in villages themselves then certainly in reachable small towns. This would cost roughly 250Tk

(£3.50) per day for TV & video together. In areas without electricity it is common practice to run televisions from lorry batteries. It is therefore easy and not prohibitively expensive for organisations to use prerecorded videos as a rural teaching aid.

It is also possible in some areas to hire video cameras with an operator. In Dinajpur town a price of 1200Tk (£17) was quoted for a days recording. In some cases this could be very useful for local organisations to make immediately relevant videos. For example in the aftermath of a cyclone a video could be made of what destruction had been caused to buildings including interviews with the owners. This video, showing people and places that the villagers know, could be an invaluable tool for householders to assess the vulnerability of their homes and consider ways of making improvements.

Radio

In the villages ofBangladesh radio reaches a wider audience than television. Many more villagers own or have access to radios and they are the prime media for following national and international news. Broadcasting on local or national radio would be much cheaper than on television but the media is widespread so it does not have the novelty of television. If villagers found a programme boring then they would turn off or retune the radio. Advertising would probably be more effective than complete educational programmes.

Film strip

Some NGOs, for example Christian Life Bangladesh (CLB), have used film strip projection for a number of years to great effect. Although a film projection is a very similar media to a pre-recorded video it can attract much larger audiences than a video. This has the advantage of reaching a lot of people at one time but the disadvantage of making it a very passive media.

Newspaper

Reading a newspaper is not a common activity in the villages ofBangladesh, the most obvious reason being that of illiteracy. Having said that both national and local newspapers are sold in the larger market places and on buses. The *Ajkar Desk Bata* is a Dinajpur weekly paper costing 2Tk which has a circulation of roughly 1000 copies about half of which is in Dinajpur town, half in the surrounding rural areas. A medium sized box advert in this paper costs 400Tk (£5.70) to run for four weeks. Beyond the immediate circulation of the paper information would be passed on to others thus also reaching the illiterate population to a limited extent. Newspaper advertising may be of value when trying to reach a district wide or larger area but when trying to target individual or small groups of villages there are far more effective and better value media.

Posters

Posters are a relatively cheap way of getting published adverts to a target population. Local artists can produce fairly high quality poster art for little cost which can then be photocopied or printed depending on the amount needed. Distribution of posters is time consuming but can be targeted specifically to the area of interest unlike newspapers. Big colour posters are widely used in the villages for advertising films at the cinemas in town. Other local events use this media for advertising. The illiterate often ask friends to interpret posters for them particularly if there is illustration in the poster which attracts their attention.

Loudspeakers

Loudspeakers run from a lorry battery are a piece of equipment available for hire in Bangladeshi villages. Known locally as "mikeing" this is a very common way of advertising. At the markets standing on a soapbox and advertising a product or event is usually assisted by a loudspeaker. To advertise events the equipment is also often loaded on to a rickshaw and driven around the village. At 150Tk (£2) for a day (rickshaw and equipment plus driver and microphone operator) a fairly large area can be covered. A simple verbal message like this often requires repetition if it is to be remembered so only fairly simple information can be communicated by a traveling loudspeaker which is why it lends itself to advertising forthcoming events. In the context of the market place where the message can be linked to a demonstration and also people may be listening for a longer period of time there is more opportunity to convey a complex message.

Traditional song team

Bangladesh has a strong cultural tradition of song and dance which is still thriving today. Most public and religious events have a significant musical component. Village song teams are very popular, a group of four or five musicians led by a singer as shown in Photograph 8 (Appendix B), they play at weddings, festivals and the like. Song teams are already used very effectively in villages for advertising tooth powder and medicines. They hold their audience for a much longer period of time than simple talking with a loudspeaker so can be considered to be viable as an educational tool as well as simply advertising. Aysan et al. (1995) suggested the use of drama and puppet theatre as an appropriate way of teaching artisan builders and householders and in the Bangladeshi context the song team is a similar appropriate method. In fact, song teams often incorporate an element of simple drama by acting out the song.

Word of mouth

As has already been discussed, word of mouth is the most commonplace and, therefore, the most effective means of information transfer within the villages. In a sense this is a secondary media since another media would be used to get people talking about a particular issue in the first place. It is worth noting here that certain members of the community will enjoy particular respect on account of their skills, education or religious leadership. What these people say has a lot of influence over others and their support will lend a lot of credibility to any initiative.

The Role of the NGO Community

Bangladesh has an extensive NGO community operating at a number of levels in the country. Fig. 1 shows how a Building for Safety NGO could use the existing infrastructure to reach the householders and local builders. Several NGOs operate resource material libraries which could hold building for safety material for access by grass roots NGOs. NGO staff development centres work on the national and regional level and could be used to run training programmes for grass roots NGO staff. The Building for Safety NGO could also work directly in partnership with grass roots NGOs.
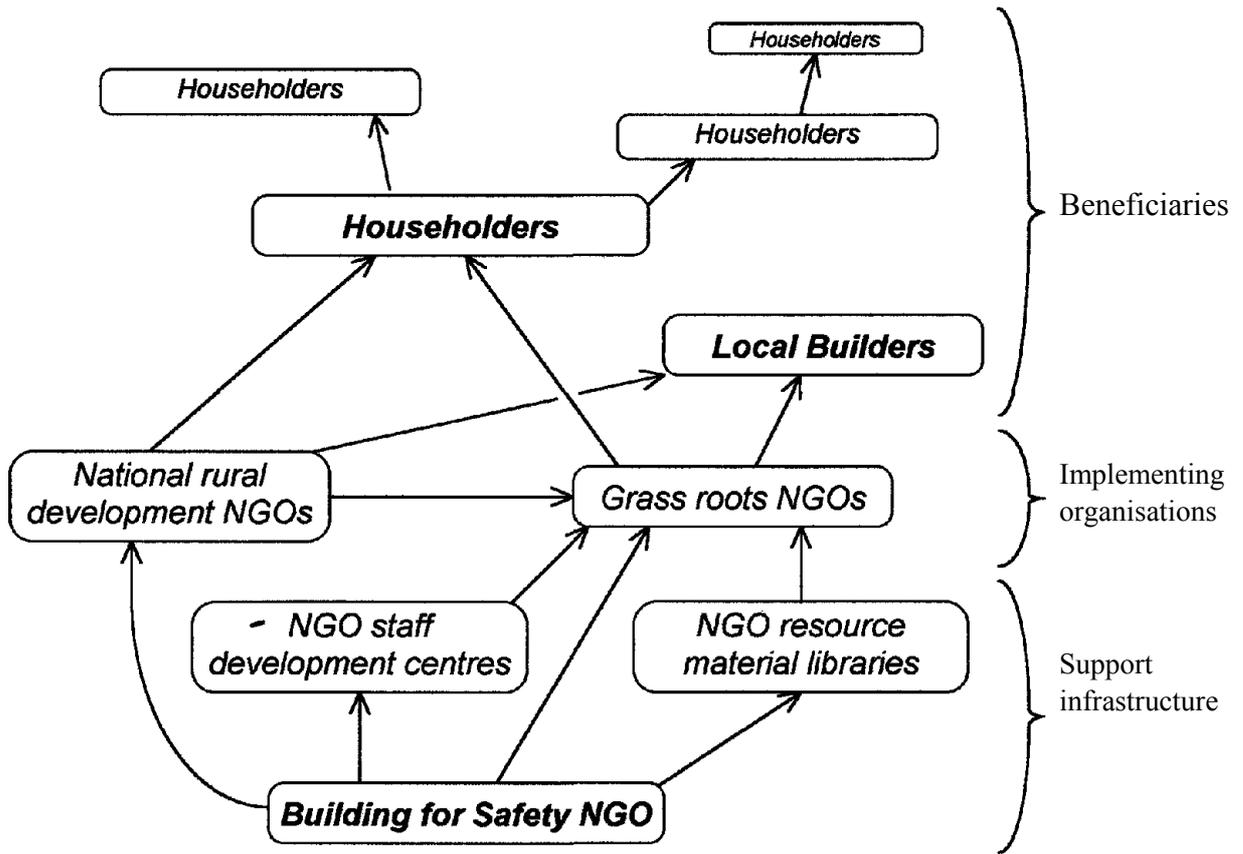
Fig. 1: Dissemination paths

As well as the grass roots NGOs there are several national rural development NGOs of which the Bangladesh Rural Advancement Committee (BRAC) is one of the best known. Some of these NGOs work directly with their benficiaries, others organise programmes which are run in partnership with grass roots NGOs. Either way they could implement building for safety programmes and reach a large number of beneficiaries.

Through the initial beneficiaries of a building for safety programme there would also be indirect beneficiaries by further dissemination of the information from householder to householder as shown in Fig. 1.

Gender Issues

Women & development

Bangladesh remains a very patriarchal society despite efforts by some development agencies at women's emancipation. It is not the aim of this report to tackle these issues in detail however any discussion of development would be incomplete without touching on the subject.

Rural women tend to have little role outside the sphere of the family and supposedly very little decision making influence within it. Widowed or divorced women have very low status and households headed by a women are typically very poor as she has limited work opportunities. Women do not travel much and never after dark. They do not visit the markets where most of the village social and business life goes on which greatly restricts their access to new ideas. Educating women is often seen as a waste of time which is reflected in their adult literacy rate which is about 60% of the male rate (BBS 1996). Although not as overtly Muslim as many Arabic countries, purdah is still practiced in many families meaning women are forbidden from being seen by, let alone speaking to, men outside of the immediate household.

All of the above seems to put up great barriers to women's development. In fact the low standard of living of women compared to men has led many development agencies to focus on women as beneficiaries. Like many other organisations Chetonar Dak has helped women to set up savings groups, motivating each other to save a set amount of money per week. Other development programmes are often run through these groups and the women tend to be hard working and receptive to new ideas.

Although it is possible for women to leam development ideas through these groups there are still problems that need to be overcome. It is still impossible for some women to take part in these groups or directly in other development initiatives because male members of the household prevent it. For those women who do take part the extent to which they can influence the decision making processes of the household depends upon their overall level of emancipation. Whilst any one development initiative may not change this much, if development activities continue to focus on gender issues then a gradual emancipation is possible.

Women & building

Most men would deny that women take part in household decisions as to what type of house to build. They might or might not be telling the truth. Many women take loans for house building through the Grameen Bank and other loan programmes. Anecdotal evidence suggests that in some cases the loan, although nominally in the women's name, is actually taken and managed by the man.

Women are responsible for the periodic re-rendering of plinths, mud plaster and mud walls which is necessary every month or two. Women also sometimes play a significant role in self build housing. The defining factor in whether building work is acceptably carried out by a women or not appears to be in whether it requires a chopping tool. Thus, building a layered mud wall is a perfectly acceptable job for a woman as it is done with the hands but in building a bamboo house she could only take a supportive role since most work is done with hatchets and knives.

Appropriate Technology

Appropriate technology is a mantra for acceptable development so it is important to look in detail at what the phrase actually means in the context of building. In essence, the key to appropriate technology is that the target group will understand, replicate and develop that technology. In order to be accepted, a building for safety technology must:

- **Be** financially beneficial
- Be affordable
- Satisfy the aspirations of the target group
- Be understandable with knowledge within reach of the community
- **Be** implementable with skills within reach of the community
- Be implementable with materials within reach of the community

"Within reach of the community" does not necessarily mean that the knowledge, skills and materials already exist within the community (although it is ideal if they do), it means that they must be an attainable extension of what is currently available rather than a diversion from it. Looking at each of these in turn we can see how they relate to the building context.

- Be financially beneficial

    In some cases building innovations save money in the long term. For example a CI sheet roof on a house does not cost as much to maintain as a thatched roof. Over a long period of time this will save money. Innovations can also save money if they protect a house which would otherwise have been damaged or destroyed by a hazard. Saving money is the most limited view of financial benefits. Other innovations may be considered financially beneficial if the additional utility they give is considered worth the additional money they cost. For example having secure shelter in a post disaster situation is utility over and above the money saved by not having to rebuild the house and may be taken into account when weighing up the costs and benefits of two different housing options.

- Be affordable

    Building innovations also need to be affordable in the first place. Building systems with a high initial cost may well save money in the long term but this is of no use to householders

who cannot afford to build them. Credit is now widely available in Bangladesh from the Grameen Bank, BRAC and others. This is making high initial cost housing options affordable but it is controversial since householders sometimes get into difficulties over repayments. It is not uncommon for a debt spiral to develop with householders taking credit from one agency to make loan repayments owed to another agency.

• Satisfy the aspirations of the target group

The three main requirements for building in Sundarban village is that it be cheap, long lasting and secure. There are other housing aspirations which play a secondary but also important role: to have a hipped roof; to have a large house; to have a house with good thermal insulation; to have a house which displays modem materials; to have houses which do not require constant maintenance; to have a house with a plinth and a verandah; to have a house which can be later extended; to be able to resell housing components if they are expensive; to have a house with individuality; etc. The relative importance of these and other aspirations depends very much upon the individual. It is impossible to make a house to suit everyone's aspirations which is precisely why an appropriate building technology should be a range of adaptable options, suited to the rich diversity of existing housing styles, rather than a single prescribed solution.

• Be understandable with knowledge within reach of the community

A housing technology should not be complicated. Although some teaching may be necessary it should be simple to understand what effect the technology is having and why. As an example villagers may not know that scorching bamboo posts protects them from insect attack. If you tell them that it does and they believe you then they will know that it does but will not know why and are likely to ignore any practical application. If they see the bamboo being scorched and see the sap of the bamboo bubbling and steaming out of the bamboo and you tell them that this is the juices of the bamboo that the insect likes to eat then they can understand why the scorching works. They will probably remember the technique and may well put it to practical application. Although this specific knowledge may not be in the community it is easily within reach and once discovered easily understood.

• Be implementable with skills within reach of the community

The householders and local builders have a skill set which they are experienced with. If building innovations can be implemented with that skill set or with simple developments of it then they do not require extensive training and are easily replicable. Innovations which need very new skills would require external training of those people who were going to implement them. This reduces the chance of them being replicated and also may reduce their accessibility to the poor since those craftsmen who have received training may increase the price of their labour since they possess a rare skill. They might be particularly inclined to do this if they had received well publicised "foreign" training.

• Be implementable with materials within reach of the community

> If the innovation can be implemented with materials within reach of the community then it can be implemented and replicated without the need to build a supporting infrastructure which would require entreprenurial investment. The more accessible the materials are the less costly they are to obtain. As an example the availability of bitumen was a key factor in determining the viability of painting posts with bitumen in Sundarban village. Originally most people thought bitumen was only available in Dinajpur town for which return travel would cost 24Tk. Since the amount of bitumen required to paint all the posts on a single house costs only 15 - 20Tk the transport cost is a very large proportion of the total cost. It was discovered that bitumen was also available in Ranir Bandar, a nearby market for which return travel costs just 4Tk. Not only did this mean that the system became viable it also meant that a key part of its implementation was in informing people that bitumen was now available for sale in Ranir Bandar. Had bitumen not been available there, it might well have been an appropriate goal for Chetonar Dak to try and arrange a local supply.

If we assess proposed technologies by these criteria then we can judge whether it will be appropriate to try to teach them. Technologies which fulfill these criteria will represent a progressive development of technology rather than an imposed technological leap.