PCR TOOL 9

Communicating Better Building

Introduction

When a disaster has damaged or destroyed many houses and buildings, there is a general desire to build back better than before to reduce future risks. Affected populations, now more aware of disaster risks, are eager to address them. Humanitarian agencies and their supporters want to build back better to minimise the impact of future disasters. However, simply providing cash grants may not achieve safer building, as people may not have the know-how to improve their existing technologies, or to use alternative more modern technologies well. Most of the time, people need support to achieve better reconstruction. This comes in various forms such as: training, regular supervision and information. This tool focuses on support through providing information on building back better, more specifically, how to ensure this information is well communicated to residents and local builders in disaster areas.

Why do we need to communicate better?

In the early 1990s a team of researchers from Cambridge Architectural Research Ltd undertook a study in northern Pakistan to assess how people understood disaster risks and safe building practice from information presented to them in the form of posters, pictures, pictorial stories, drawings, diagrams, slides and films. It highlighted that: many misunderstood the information materials; overlooked important elements of the information presented or were confused or even offended by some of the materials. Much of the information presented was thus useless or even harmful. The main limitation was that many of the materials utilised Western visual literacy and notation. Many of the people interviewed, especially in rural areas, had very little experience of this. Therefore, it is essential to ensure a local context in information materials in order to successfully communicate the intended messages. An account of this research is given by Dudley and Haaland (1993) in the *Resources section*. Its findings are not unique but confirmed by others in different sectors of development. Fortunately, our means of communication have advanced and diversified since this research was done, enabling us to better address these issues now.

photo © Practical Action Southern Africa

A girl is using the Second Voice communication equipment which enables her community to share information with other communities in rural Zimbabwe

We need to communicate effectively about safer building because failing to do so can have serious consequences. Firstly, people may build back incorporating many of the faults and problems that contributed to the vulnerability of their houses and buildings in the first place. If inspection of the construction site is thorough, faults may be corrected before rebuild, but this is sometimes at a high cost, limiting the amount of financial support remaining for the actual build. Where inspection is non-existent, lax or corrupted, however, people may rebuild houses that are vulnerable to disasters. Secondly, people may attempt to build in new ways – assumed to be safer – without fully understanding the performance standards.

photo © Practical Action Bangladesh

There are information centres now, such as this one used by a girl in Bangladesh; they are increasingly used to access information and share it between communities

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What do we need to communicate?

The key message in a communication strategy on reconstruction is that we need to reduce the risks of disasters re-occurring in the future. Therefore, the safety aspects of designs and technologies are very important.

People, however, generally do not accept new ideas as soon as they are presented to them. Instead, through a process of assimilation of the idea, people become ready to accept it and use it in a practical way. The main steps in this process are:

1. Raising awareness
2. Promoting interest
3. Testing the idea
4. Evaluation
5. Adoption.

To get people to use an idea or method for building back better, the **why-to** questions (steps 1 and 2) are as important as the **how-to** questions (steps 3 to 5). An effective communication process addresses both sets of questions, but not necessarily all at the same time or using the same method.

It is easier to convince people to improve their building methods immediately following a disaster, than to do so in the absence of a disaster with preventative intentions. The personal experience of poor disaster-resistance is a very important factor in raising awareness (step 1), but people also need to understand why particular building types behaved so badly and therefore should be avoided or improved. By this time in the re-building process, people may have undertaken vulnerability or structural damage assessments (treated in more detail in PCR **Tool 3, Learning from Disasters**), which will have helped to explore this further. The same assessments can help to increase their interest (step 2) in certain types of building that performed better. This may solve many of the why-to questions for those who participate in these assessments. However, communication needs to extend to others in the affected settlements.

There are two distinct approaches to building back better after a disaster:

1. To improve on those traditional or vernacular designs and technologies that have shown to resist the disaster well, or:
2. To introduce innovative or modern designs and building technologies.

Preference for either approach may be influenced by many factors in addition to the desire for risk reduction. Residents may opt for the modern solutions for reasons of status, the financial value of the house, reduced maintenance, or a wish to leave the past behind. Professionals may also prefer modern approaches because they have studied and gained professional experience in them and thus are less familiar with indigenous technologies and their performance in disasters. However, it is easier to *communicate* ways of improving designs and technologies that people are already familiar with, rather than introducing and explaining alternatives that are entirely new. Thus, from a communication perspective using and improving existing technologies is preferable. Similarly, less support would be needed during construction using existing technologies.

One particular problem with information that exists on modern construction is that it is predominantly technical in language thus difficult to understand for self-builders or even building artisans who may not have a high level of literacy or education. For example, official codes, regulations, standards and other legal instruments are used to specify the quality of construction. For this information to be communicated effectively it needs to be presented in an alternative, more appropriate format for the target audience. Conversely, vernacular construction suffers from a lack of documentation in many regions and there is often little information on how it behaves or can be further improved. Thus, the problem here is not with the content of the information, but with its availability. Case studies from building elsewhere often do exist, but they need to be compiled for use.

Whereas safety is a key factor in reconstruction, it should be remembered that safety can be compromised by other factors such as poor quality construction, poor resistance to climate or insects, poor maintenance, etc. To prevent this occurring, the safety guidelines need to be thoroughly researched and tested before dissemination to people rebuilding or repairing their houses. Information available from other regions may help in this research, but local research through collaboration with universities or research institutions is helpful. Communication should cover both new construction as well as repair of damaged buildings or retrofitting of others that are considered to be not sufficiently resistant. Another important aspect of risk reduction is location. PCR **Tool 3: Learning from Disasters** explains how various assessments can help to determine risks associated with location. For example, the risks of building in flood plains or on unstable slopes need to be communicated clearly to people intending to rebuild their houses.

Disasters may come in the form of floods, strong winds, earthquakes, landslides, volcanic eruptions, fires and conflicts. Each of these risks may demand a different approach to reconstruction, particularly in terms of safety. When planning for reconstruction and the process of information dissemination and communication, it is important to consider that some areas may be at risk of several types of disasters.

The main messages that *Communicating Better Building* seeks to put forward to communities include:

- The causes and characteristics of the disaster event that occurred;
- The probability that a similar event might reoccur;
- An insight into vulnerability and why the disaster had the impact that it did;
- An assessment of what makes buildings safe or vulnerable to particular types of disaster;
- The likelihood of other types of disasters occurring in the area and an awareness of safe/ unsafe locations;
- The particular design features or technologies that reduce the risk of damage or collapse of buildings;
- How to implement and maintain these features in ways that are cost-effective;
- How living in safer housing and safer settlements can help people recover their livelihoods quicker in case of another disaster;
- How communities that are well organised and prepared for disasters are affected less and can recover quicker.
- Where communities can find important information on their reconstruction options, administrative procedures, selection criteria, land certification and other housing related matters.

How to communicate?

Rather than spreading information in a prescriptive way, it is preferable to opt for **participatory communication**. This involves a two-way process that encourages feedback from the audience, stimulating them to learn from each other as well as the presenters. Furthermore, in participatory learning, anyone can question ideas, which helps to cross-check and create stronger solutions, as well as increasing their understanding and acceptance. Participatory communication may take longer than prescriptive communication which may be problematic within tight reconstruction timeframes, but in the long run it is more worthwhile.

Finding out how people communicate and through what media is important too. Do they obtain information almost completely by word-of-mouth, or are other media such as the radio, mobile telephones or community notice boards important as well? Who are the informants that people trust and go to for information? Who are the informants from organisations and outside the community and in what form do they make their information available? Getting a clear picture of information flows can help later to develop appropriate information resources and channels to improve the process of building back better.

The assistance of community leaders, artisan builders, CBOs and other key informants can be very useful to disseminate messages on safer building to the wider community. On-site visits, demonstration sessions, manuals, films and DVDs, and discussions with technical specialists can help these informants to get the necessary knowledge about the causes and consequences of disasters and how to mitigate them. They can then disseminate key messages to the wider community and also be involved in the production or use of information and communication materials used in dissemination. In several development projects, Practical Action has worked with groups producing participatory video. Here, representatives use video to describe problems in their communities and how they could be solved providing powerful media for convincing peer groups. In recent disasters, the use of SMSs and telephone enquiry services has also been extremely far-reaching and effective.

Appropriate communication methods

The production of effective information and communication materials is not always straightforward as people from different cultural backgrounds may interpret visual and verbal expressions differently. This can be addressed by

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Oral forms of communication such as street drama (left) or song (right), in this case as part of an early warning campaign for floods in Nepal often work better for people with low literacy or education levels.

photo © Practical Action / Shrada Giri Bohora

Women in Nepal making a participatory video as part of an early flood warning campaign

pre-testing any visual materials or verbal messages with a selection of the target audience to ensure that they are well understood. In pre-testing the fieldworker uses draft information materials. The purpose of the pre-testing is explained to a selection of local people, who are then asked what they understand of the materials. If misunderstand or confused, the messages are then explained and their opinions sought on how to improve the presentations. However, even if a particular message works in one place, there is no guarantee it will work in another. Cross-checking is always useful to ensure that people have understood messages in the manner intended by the informant.

Staff from local agencies such as NGOs can often be helpful in advising what communication media or combination of media to use in order to reach local communities. They may also have the required skills to draft presentations and visual materials to disseminate safer building. Media can include:

- Pictures and posters
- Slide shows
- Videos, Films and DVDs presented through social networks (global ones such as YouTube, or local ones such as community resources centres)
- Drama and stage shows
- Puppetry
- Song and dance
- Radio and television
- Brochures, manuals, guidelines and newsletters
- Community notice-boards
- Loudspeaker announcements
- Websites, web forums, 'Google-groups' and social networks
- Meetings and discussions
- Peer exchanges
- Presentations using visual aids and flip charts
- Models
- Demonstration buildings
- Construction training
- SMSs and telephone enquiry services

It is not possible to state with certainty what media will work better to get information across. That is because post-disaster contexts and target groups vary greatly, and what works for one group may be less effective with another. But there are some lessons from past experience:

1. Often, a **combination of media and messages** is needed to raise awareness and highlight specific design or construction details; this requires having a clear idea of the 'outreach strategy' and dissemination.
2. Information materials need to provide **simple straightforward messages**. Information materials need to be **culturally sensitive**. Drawings of builders as characters need to show generic features of **the country or area**, but without too much detail.
3. The **quality** of the presentation materials is important too. Photographs, for instance, should not show too much of the image in shade or over-exposed. Details need to be clearly seen thus photos should be taken from a suitable distance. Drawings should be prepared by a competent artist or draughtsperson. The plans, sections and views of buildings that architects and engineers tend to use may be difficult for home owners and local builders to understand; a three-dimensional representation or model that realistically shows perspective often works better.
4. It can be useful to **compare good and bad** practice, or true and false assumptions, but care needs to be taken how that is done (tick boxes, emoticons etc may be understood differently). Images should preferably **represent reality**. Cartoons and photo-novelas, thought and speech bubbles, and abstractions need to be used according to the target audience (urban/rural, literate/illiterate, younger/older, men/woman/children etc).
5. The more frequently **messages are repeated** the more likely it is that they will be widely comprehended. Different media can be used to reinforce messages and to encourage discussion amongst people and with facilitators as this can help to reach a better understanding. The use of visual or **written messages needs to reflect literacy levels**. Care should be taken that disadvantaged people in the target audience are not further marginalised by using messages that are inappropriate for their level of comprehension. With audiences of mixed literacy abilities it is best to read out any text that accompanies pictures before going on to

explain the messages and discuss them with the audience.

6. **Reaching the young** is important to guarantee that disaster mitigation in communities is long-term. Several agencies have been successful in this by using the reconstruction, repairs or retrofitting of school buildings as an opportunity to raise awareness of and train both teachers and pupils; see, e.g. case 1 in the section *Applications*. In other cases, children have actually helped with reconstruction, and thus learned in practice.
7. **Good facilitation** of sessions is vital regardless of the size of the audience. The quality of facilitation is probably more important than the quality of the information materials for people to gain sound knowledge of safer construction. A good facilitator can work with information materials that are not of the highest quality, or even improvise using e.g. a marker pen and flipchart, role plays and sketches.
8. **Information dissemination and communication needs to be coordinated** among the different agencies assisting people to recover. All agencies have to be consistent in their messages and avoid providing conflicting information. Joint public information campaigns are encouraged to promote consistency, impact and share costs.
9. **Regular monitoring** of how the dissemination and uptake of better building is progressing can help improve the efficiency of communication. It may, for instance, be useful to organise two-monthly review meetings with community leaders, local builders and key informants to assess progress. Are people accepting the need to incorporate special features in the housing design for improved safety? Are people making other suggestions on how safety could be improved? Are these suggestions valid and should they be incorporated in future designs? Are there any aspects of safer building that people are finding difficult to comprehend? What can be done to get the messages on difficult aspects across better?

Applications

See case studies below and over leaf

A number of additional case studies can be found in the *Resources*.

Case 1: Making housing in Vietnam resistant to typhoons

The international NGO Development Workshop has been working with families in Thua Tien Hué province in central Vietnam since 1999 to strengthen their houses against the typhoons that regularly strike the country. It emerged that families were losing homes and livelihood assets and having to carry out expensive repairs from typhoons that were classified only as moderate, and would normally be expected to produce only light damage. People had started to rebuild their houses with concrete, steel, fired clay bricks and fired clay or concrete roofing, replacing traditional bamboo-based houses. However, they did not know how to make these new homes safe against typhoons, had only partially completed them, and in some cases were not able to repair the damage to their houses caused by typhoons. Development Workshop works with the people of those communities through:

- Awareness raising events, including work with schools, plays and concerts with disaster mitigation messages, displays, handing out of leaflets and house to house visits, radio and television broadcasts, sports competitions and a touring exhibition;
- Formation of Commune Damage Prevention Committees that will aim to disseminate safer construction and undertake pilot projects;
- Preparation of commune damage prevention plans with local communities;
- Encouraging family to family information exchanges so that families who have improved their houses can inform others;
- Practical training of builders and community representatives;
- Consistently and repeatedly disseminating ten principles of safe construction;
- Demonstration projects of housing strengthening in which families have part of the improvement paid for but in return are expected to show and inform about their house to other people in the community;
- Strengthening of small public buildings including schools, applying the ten principles of safe construction; training of teachers and children about disaster prevention;
- Setting up a savings and loans project so that people can save and borrow money to strengthen their homes.

See: Suresh (undated) and World Habitat Awards (2008)

Case 2: Remaining vigilant to earthquake risk in Kathmandu Valley, Nepal

The Kathmandu Valley in Nepal is in a seismically active zone but there has been no major earthquake there since 1934; very few living people have a memory of this event. The population of the valley has increased greatly since then and so a future quake could be devastating if they are not prepared for it. Under a programme organised by the Nepal National Society for Earthquake Technology (NSET), 400 public schools in the valley have been rebuilt or strengthened to be earthquake resistant. The programme has also been used to increase preparedness and awareness about mitigation for future earthquake risks. The programme was intensified following the 2001 earthquake in Gujarat in India. Since then, learning exchanges have been organised between masons in Nepal and Gujarat. Other activities have included:

- Regular evacuation drills and education about earthquakes for schoolchildren;
- University students undertaking safety assessments of schools as part of their training;
- Communities participated in the design of safer schools, thus learning about safer construction;
- An annual activity week culminating in an Earthquake Safety Day that included exhibitions, radio interviews, rallies and children's art competitions;
- Provision of training for journalists about the programme and disaster mitigation;
- A manual and curriculum for training courses for masons in earthquake-resistant construction;
- Community members working alongside trained masons in retrofitting or rebuilding of schools and community buildings.

More recently homeowners have started to hire trained masons to improve the earthquake resistance of their own houses. And the experience that NSET gained with this programme was subsequently transferred to Pakistan, where they assisted ERRA with reconstruction after the 2005 earthquake.

See: Asian Disaster Preparedness Centre and USAID (2005), pp. 198-199

Case 3: Women take the lead in safer roof construction to protect against hurricanes in Jamaica

Jamaica has been severely affected by hurricanes in past decades, particularly by hurricane Gilbert in 1988, Hugo in 1989 and Mitch in 1998. Most of the population was ill-prepared for these disasters. A lot of the damage to houses was due to roofs that were not securely fixed to walls. A Jamaican NGO, the Construction Resource for Development Centre (CRDC) has been working to remedy this. CRDC took the initiative to:

- Produce and show a video and promote discussion about safer roof construction and particularly about how to strap the roof securely to walls;
- Demonstrate the safe strapping technique on damaged houses of elderly widows to train builders in the use of the technique;
- Produce and distribute booklets about safer building techniques;
- Discuss the roof strapping technique with the Jamaica Bureau of Standards, which approved it and specified it as an industry-wide standard;
- Train women in disaster safe construction. These women would in turn train others and they could then instruct local builders and contractors to use safe construction techniques and monitor their work to ensure that safe construction was being implemented.

More recently, the project has been extended to train women in vulnerability assessment and mapping to get an insight into how people are vulnerable to hurricanes more generally and specifically what makes particular settlements and communities vulnerable and how these vulnerabilities could be addressed. Donor support has also enabled CRDC to extend its roof retrofitting project to hurricane affected areas in four other Caribbean countries and to Honduras and Peru. This is an interesting example of south-to-south technology transfer.

See: UNISDR (2007), pp.27-30.

Case study 4.: Sharing knowledge and information through the Haiti Shelter Cluster

Images of Haiti's 2010 earthquake have brought to the attention of the entire world the vulnerability of the built environment, especially in urban areas. The huge tasks ahead include provision of adequate, affordable and safer building practices, regulated land use, improved technologies and material production, regeneration of entire neighbourhoods with both a short and a long term vision. Communities need to be informed and take part in the choices that involve them, and access timely the required information to make these choices.

The Shelter Cluster, regrouping over one hundred agencies, has jointly started to produce and disseminate information through:

- Widely accessible website and Google-group where all information on reconstruction and updates are posted
- Poster and leaflet campaigns, based on the drawings from Fred Cuny on housing typologies in Haiti and hurricane/earthquake resistant features in the Caribbean
- A DVD with technical guidance for assisted self-help shelter construction used in the Caribbean, adapted and translated into French/Creole to suit Haiti.
- An outreach strategy which uses SMSs, radio and TV broadcasting, and other communication tools to spread information on safe construction.

Source: IFRC

Poster jointly produced by several agencies, showing safe reconstruction in Haiti.

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