T4SL
Technology for sustainable livelihoods

ITDG
Intermediate Technology Development Group

Technology, Post-Disaster Housing Reconstruction And Livelihood Security
Case Studies

case studies | disaster reduction | housing reconstruction
http://livelihoodtechnology.org/home.asp?id=csHousingReconstruction

Print
Close Window

Case Study 1: Floods, housing reconstruction and gender vulnerability

In the aftermath of severe flooding in Pakistan in 1992, a local NGO called PATTAN introduced a linked package of measures to reduce women's vulnerability of which housing was part.

First, it hired female relief workers to assess the needs of women during the floods and to involve them in planning and implementing relief and rehabilitation initiatives. To recruit the women, the organisation had to pay good salaries and offer decent transport, accommodation and security.

Second, local women were registered as heads of their households and put in charge of the distribution of relief food: this ensured that the distribution was fair and efficient. Third, village women's organisations were set up (in parallel to men's groups) to articulate women's needs and take responsibility for community development.

Fourth, in the villages of Bharat and Shamsabad, which had been completely destroyed by the flood and where housing was a high priority, PATTAN involved women in reconstruction. The women's groups were a forum for discussing women's views on the design and layout of new houses. Some women actually took part in construction (traditionally a male activity). Women were given the responsibility for collecting money to repay the loan instalments on the houses. Perhaps most significantly in livelihoods terms, PATTAN also introduced the concept of joint ownership of houses by married couples. Many meetings were held with both men and women before the concept was accepted. Then, a few couples drew up legal contracts of ownership that state that, in the case of divorce or separation, whoever wants to retain ownership of the house must pay the other half its value. Joint ownership made women feel more secure and proud, and it appeared to reduce the incidence of marital conflict and domestic violence as well as improving relationships between mothers-in-law and daughters-in-law.

Case study 2: Linking reconstruction to development

An earthquake in February 1976 was felt over nearly half of Guatemala. It killed 23,000 people and destroyed more than 250,000 houses. In the municipality of Joyabaj, in the northwest of the country, 600 people died, another 5,500 were injured and over 95% of the predominantly adobe buildings were wrecked.

A local NGO, ALIANZA, hitherto involved in public health work, became heavily involved in relief and subsequently in co-ordinating reconstruction efforts that promoted earthquake-resistant housing. The work followed a standard pattern of training builders, building demonstration houses, distributing materials and generally raising awareness, but projects were developed within the community. Local people were recruited as promoters. Local workers' teams provided design suggestions as well as labour. There was constant discussion of design issues which led to confidence in the project and a feeling of community ownership of the final results.

The initiative had a five-year timetable in which reconstruction was not seen as an end in itself: rather, emphasis was to be gradually shifted towards a more comprehensive development programme with projects to improve health and nutrition, education, productivity and infrastructure, and to support the development of local organisational capacity. The five-year planning framework was a crucial element in long-term success.

Case study 3: participatory technology development

In May 1990 an earthquake destroyed over 3,000 houses in north-east Peru. Most damage was done to buildings of rammed earth. The earthquake highlighted the vulnerability of such houses, particularly those of poor-quality construction and maintenance.

ITDG was already working in the district and so was well placed to assist in the reconstruction efforts. Participation in technology development was central to its approach. During the initial six months after the earthquake, ITDG undertook a process of consultation with the 5,000 inhabitants of the town of Soritor. This led to the decision to focus on a technology known as 'improved quincha'.

Quincha has been used in Peru for many centuries. Traditional quincha houses have round pole frames set into the ground, infilled with smaller wooden poles and interwoven to form a matrix which is then plastered with one or more layers of earth. The improved quincha developed in this project incorporated concrete foundations and wall bases, stronger connections between different elements of the structure, and cement rendering of the walls. These improvements strengthened the

structural links while retaining the inherent flexibility of the traditional method, thereby making the technology more earthquake-resistant. The local availability of timber poles, bamboo and earth also meant that improved quincha was suited to a self-help building programme.

A community building and several houses were constructed to demonstrate the technology and train local artisans and residents. A core housing design was agreed which could be adapted to specific household requirements, reflecting income, available building materials, land features and so forth. Individual designs were then drawn up in consultation with beneficiary families and construction was begun, with groups of 20-25 people working in turn on each other's plots, normally at weekends.

The project targeted the poorest victims of the earthquake. ITDG relied heavily on a local community-based organisation and a church organisation to undertake the selection of project beneficiaries, in order to ensure that this process was considered both objective and fair.

When a second earthquake hit the region almost a year later, 70 quincha houses had been constructed. Each of these withstood the earthquake although 17,000 other local homes were damaged. This dramatically demonstrated the benefits of improved quincha, significantly improving its popularity and acceptance.

ITDG was directly involved in the reconstruction of 700-800 improved quincha houses but some 4,000 additional ones, or variations thereof, were also built in the project area. An independent evaluation undertaken in 1996, two years after the project's completion, concluded that the technology was filling an important gap in the local housing production system, providing cheap, secure and durable buildings.

Case study 4: Replication versus pragmatism

In the aftermath of floods in November 1998 that destroyed over 11,000 houses, the Vietnamese Red Cross and the International Federation of Red Cross and Red Crescent Societies developed a new design for flood- and typhoon-resistant homes that included concrete bases, galvanised steel frames and other safety features.

The new design is intended to achieve three results: saving lives (roofs as refuge), saving the family's greatest material possession (the house itself), and protecting livelihoods (a first floor platform to store seeds, tools and other assets). Villagers called the houses 'little mountains'. When floods struck again in 1999, only one of the 2,450 that had been built was destroyed. By August 2000, the programme had built 7,400 houses.

The beneficiaries are selected on the grounds of vulnerability, with priority given to the elderly, the handicapped and women-headed households. But, at a cost of roughly $500 per unit, the houses are much too expensive for poor people to afford. They are therefore given away, in effect. The Red Cross pays for the main frame and although the beneficiaries are expected to build the walls out of light materials such as rice straw, even this is beyond the means of the poorest, and in practice local authorities and Red Cross branches often finance it.

This approach goes against the grain of current thinking about good practice in helping the poor and vulnerable obtain shelter, which favours approaches based on local skills, material and financial limitations, that can be replicated. The Red Cross accepts that this is an important issue. Its choice of technology is based on two aims. First, it feels that relief funds should be used to make a prompt and significant difference to families that have suffered. Second, it wants to demonstrate to local and national authorities - which should play a major role in housing provision - what can be achieved. And there are some signs that this approach is having an impact: by mid-2001 the Red Cross and the Vietnamese government had built over 20,000 flood-resistant houses in 16 provinces between them, and the visibility of the 'little mountains' has ignited public debate about safe housing.

---

supported by DFID **infrastructure and urban development department**