



## Kashmir Earthquake 2005

# Learning from the Shelter Response and Rural Housing Recovery

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**In October 2005 the Kashmir earthquake left over 75,000 people dead and 3.5 million homeless, just before winter on the foot of the Himalayas from low to high altitude. The shelter response ensured no further loss of life, no large scale displacement and maximum assistance at origin. The rural housing reconstruction programme results include 611,000 houses repaired and reconstructed within 4 years and over 90% compliant with safer standards.**

**Key to this success were:**

**Leadership and coordination in a single programme:** Vision and leadership by Government, coordination between all assistance actors, consensus on complementary roles and clear objectives, and in a spirit of collaboration and common purpose. Instead of a multitude of projects, all agencies implemented the same programme using resources efficiently to cover the entire affected area.

**A longer plan early:** Although Pakistan was not prepared for such a large disaster, steps were taken very early to establish institutional mechanisms, to develop and communicate policies for reconstruction. This ensured both the affected communities and the assistance agencies focused on the longer term and could plan accordingly.

**An enabling approach:** The key principle of the shelter response and rural housing recovery was to support people to organise their own solutions according to their capacities, needs, resources and priorities. While policies and objectives were set out early and adhered to, the details of programmes responded and adjusted to people's reality, resolving challenges and taking new opportunities as they arose.



Rangla, Kashmir, October 2005.

Some of us were directly affected by the earthquake losing family members and our homes, some of us arrived in the days afterwards. We worked together from 2005-2010 through the emergency and in the remarkable ERRA<sup>1</sup> rural housing programme. From this perspective, unlike most shelter response people who rarely get a chance to revisit the areas where they work, we were able to see the impact of the emergency response activities, to watch the shelter to housing process, and to understand how the decisions and actions taken or not taken in the first months affected individual households and the wider scale.

This document was prepared following the recent Nepal earthquake, reflecting on lessons learned in Pakistan which may be of use to those involved in the early stages of response and recovery in Nepal, and as an exchange of experience in solidarity with earthquake affected communities across the Himalayas. While we recognise that context is everything, and no two crises are the same, there are many similarities in terms of topography, settlement and building traditions between Pakistan and Nepal, and there are both principles and practical points to learn from, in the same way that Pakistan learned from the tsunami and Gujarat. The Kashmir earthquake shelter and rural housing recovery is a good news story for all affected by crisis, showing that even in such difficult conditions, people have managed to not only rebuild their lives, but have built safer homes and futures and a good news story that assistance can be harnessed and optimised.

From the first weeks after the Kashmir earthquake and throughout the recovery, we were guided by the invaluable experience, support and encouragement of our Nepalese friends and colleagues from NSET<sup>2</sup>, without whom the successes of the Pakistan programme would not have been possible.

1. Earthquake Rehabilitation and Reconstruction Authority  
2. National Society of Earthquake Technology Nepal



NSET and Habib assessing the performance of local buildings, 2006.

**In summary our lessons are:**

**Let people choose for themselves**, be flexible, trust people to do their best for their families.

**Help people think and work towards long term**, even if your contribution is limited in time and scope.

**Don't think you can fully plan or control shelter or housing**, you have to continuously respond to the momentum people drive themselves. At best, you can inform, incentivise, guide, assist.

**Observe what people are doing, listen to what they are saying**, understand the process from affected people's point of view, understand how they are planning their own recovery, only then can you determine how to support.

**Skills for partnership:** from field engineers to managers, working with households, communities, and as agencies working with government in a wide partnership, required skills for collaboration as much as technical skills.



Programme engineer advising on reconstruction with owner.

## Get shelter materials out, but don't prescribe how they are used.

**CGI sheets:** The materials prioritised for distribution in Pakistan 2005 were tents, shelter grade plastic sheeting, blankets and cgi sheets, to supplement local supplies and mitigate price rises. 3 million cgi sheets were distributed. cgi was used for shelter, and reused for reconstruction. The initial massive distribution of cgi made this commodity, previously only used by better off families, more accessible to everybody and contributed to the shift from hazardous heavy flat roofs to light pitched roofs. However, many families did not use the cgi distributed in winter 2005 for shelter, they stayed in tents, damaged buildings or makeshift shelter and stored the cgi instead for later reconstruction.

**Shelter standards:** While there was advice available, there was no imposition of shelter standards or conditions attached to the materials, households could choose how they wanted to use the materials received. They set their own shelter standards and priorities for the short-term temporary stage. The emphasis instead was on setting and achieving housing standards in the permanent reconstruction.

**Household NFIs:** As 80% of families remained at origin and had access to their damaged homes, they were able to retrieve household items. Personal and household items were quickly available in the market, even for remote communities. Distributed NFI packages were not as useful as cash or voucher options, which were used for items like children's shoes, and storage boxes, which are not easy to standardise or bulky and expensive to distribute. The constraint was not availability, it was access to cash. Enabling families to choose what they needed ensured more effective use of resources.

**Storage boxes:** Where families had damaged buildings, they were used for storage and cooking, even if families slept outside. But in areas of total destruction, storage boxes were priority investment for tents and shelters, to keep documents, jewellery (savings), clothing and other items secure and protected from the weather. Fabricating storage boxes generated early local employment, which would not have happened if they had been supplied through international procurement.

**Shelter support not shelter provision:** The shelter response and the subsequent rural housing programme did not provide shelter or housing, but supported people's sheltering and housing. Assistance was a contribution or partnership, an open ended process, with timing and other factors determined by people themselves, with risks and unpredictable outcomes. In record time, shelter and housing objectives were fully met, justifying the approach taken and the trust invested in families and communities to drive the process.

## Shelter and transition. What people need or what agencies need?

**Models for whom:** The official shelter strategy was to provide materials and only to provide full shelters or assistance to extremely vulnerable households. Like other shelter people, we were part of teams that developed temporary shelter prototypes, which were earthquake resistant, used salvage materials and the newly distributed materials, they were well insulated for the winter and all in all seemed like appropriate and useful technical advice. The expectation was that as everyone had the same materials at their disposal they would copy the models or any of the NGO shelter solutions. Almost no one did. People used tents, and made very basic makeshift shelters, minimising the use of any materials that could be saved instead for reconstruction. We could have saved all the technical effort involved in designing and demonstrating shelter and invested the time and energy into other activities. We did not realise we were wasting our time, and we hadn't asked what they actually needed us or could use us for.

**Transition to what:** Some families received fully constructed temporary shelters which represented a considerable financial and material asset (often in visible accessible locations). While this caused no problem in shelter terms, it led to complications in the longer term. Unlike the majority who started reconstruction from a position of clearly prioritising the new permanent construction, those with good shelters were often caught in quandary and instead of starting new invested in upgrading their shelter. The result however was additional unreinforced masonry, without foundations or structural integrity. In a context where permanent seismic standards are critical to future safety, the critical path of shelter and housing should be anticipated, avoiding trapping people in vulnerability.

**Rebuilding straight away:** Some families started repairing or rebuilding in the first weeks after the earthquake, especially at high altitude. They risked being non-compliant with building standards and not eligible for assistance. To avoid penalising people who had taken initiative and started early, ERRA and partners provided technical advice so substandard new construction could be upgraded to acceptable safety and allow families to access financial assistance in full.

**End of emergency:** The Government of Pakistan declared an end to the humanitarian or emergency phase at the end of March 2006, to channel resources and attention into reconstruction in the spring building season and to mitigate the risk of creating dependency. The move was criticised at the time by NGOs who were concerned about vulnerable families. The concerted start had hugely positive psychological impact and importance, and was supported with timely policy decisions and communication to enable people to make informed decisions.

## Get money into the local economy, it will help relieve shelter needs and accelerate reconstruction.

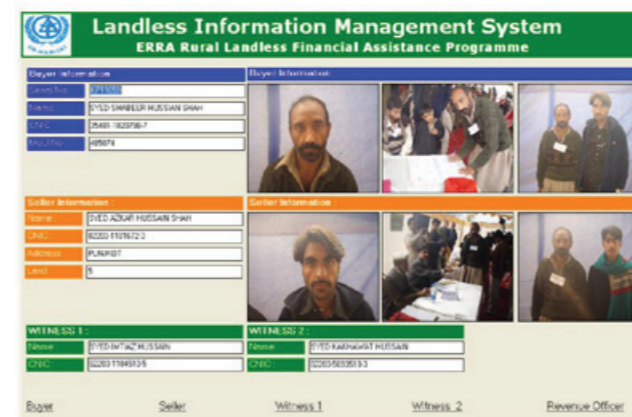
**Cash grants:** The Government of Pakistan injected US\$200 million in the affected area through initial shelter and housing grants between mid-November and the end of December 2005. This enabled people to invest in replacing household goods, purchasing shelter materials, paying for labour to assist in shelter construction, or starting repairs and reconstruction. The economic boost at household and community level helped local market rehabilitation, restocking shops and employment.

**Livelihood grants:** Additional livelihood grants were provided to vulnerable households on a monthly basis. This subsidy was not conditional or sector specific, but recognised that an efficiently distributed income supplement or substitution would enable recipients to mitigate the impact of the crisis according to a range of circumstances.

**Hubs:** The reconstruction and rehabilitation policy foresaw the need to increase and improve the supply of key building materials, including sand, steel and cement. Existing local retailers and wholesalers were invited to work in partnership with the government in a business strategy to stabilise prices, guarantee quality and expand supply, including to more remote areas.

**Remittances:** Many households in the affected area had family members away working seasonally or long term, in cities or out of the country. Depending on family circumstances, some had to forego this income to be present for reconstruction, others left the area for the first time to go earn additional money for rebuilding, leaving older people and women or extended families.

**Housing grant:** Conditional cash grants were provided by government for housing reconstruction with support of International Financial Institutions. The system was very simple avoiding high transaction cost and favouring the poorer. Grants were delivered in tranches directly into the personal bank accounts of affected people, based on compliance to promote adoption of safer construction techniques.



All households were covered by the central information management system including financial assistance tracking.

## Technical capacity should be adding value.

**Optimise engineering availability:** Most NGO international and national engineers present in the first months after the earthquake were busy designing or constructing shelters. It was less than optimal to have such valuable technical expertise supervising simple construction tasks or logistics when they might have been of greater use helping people to understand why their buildings collapsed and how to build safer next time.

**Engineers and earthquakes:** Many international engineers were coming from areas where they don't have earthquakes, and Pakistan engineers had not had seismic engineering in their curricula either. There are excellent resources available like the NICEE earthquake tips, EERI web tutorials and others where technical people can access basic or more complex information to upskill themselves. If engineers are going to come into an area badly affected by an earthquake, they should take responsibility to read their way into the topic.

**Good masonry and reinforced concrete:** Many buildings collapsed because of poor design or execution of modern techniques. Even engineers who knew nothing about earthquakes could have used their early presence to train on basic masonry skills and quality assurance measures for the globalised vernacular of reinforced concrete.

**Diagnosis:** Apart from the official damage assessment teams, having engineering capacity available in the emergency phase could have contributed to documentation and diagnosis of shortcomings in local construction practices while the evidence is still there before demolition, identification of local techniques which had performed well, analysis of the supply chain in terms of material quality, skill levels, owner perceptions and intentions. This could have been carried out in collaboration with local construction actors, facilitating increased understanding of issues in reconstruction.

**Check before demolishing:** Buildings were demolished from fear or expectations of funds for reconstruction. Some could have been feasibly retrofitted for re-use if technical advice had been available early enough. Many demolished public and other buildings have not yet been reconstructed.

**Centralised and pooled resources:** A technical group of government, national professional and assistance agency personnel were able to share knowledge, to arrive at agreed standards and curricula and provide quality assured and agreed guidance for all agencies. This was front loaded to be timely, but continued throughout the recovery responding to new problems as they arose. This pooled resource model helped with consistency of information and meant not every agency had to invest separately in expertise, but could access expertise. Housing reconstruction standards including vernacular techniques are now included in the national building code.

**Recognise the value of culture:** Local building traditions represent rich sources of knowledge including hazard resistance. Understanding how people live, their cultural and social values and preferences, is critical to understanding how they will build their homes. Analysing housing is not only an engineering exercise.

## Reconstruction is not only return to what was there before. Expect changes; in construction, in the construction sector, in settlement, in communities and in families.

**Carpenters:** Some agencies supported local carpenters to rehabilitate workshops, replace tools and access new and better equipment. This increased capacity for salvage, shelter construction and new roofing. A condition of the provision of assistance was that the carpenters assisted an agreed number of vulnerable families in their shelter.

**Decline in stone:** We expected most people to rebuild in stone and provided technical assistance for same, but all skilled labour including stone masonry rates went up and the new standards required sand cement mortar which represented a new expense. People were also worried about stone after the experience of collapse. We expected people to rebuild the same type of construction and vulnerabilities.

**Concrete block business:** Instead there was a wide scale shift to construction in hollow concrete blocks, using aggregate which was available in traditionally stone areas. We did not anticipate this change early enough, although the signs were clear from the first months after the earthquake. People with land close to rivers or roads were investing in small block machines and curing areas. There was an opportunity to engage with them to support or leverage quality assurance or production capacity. Being late we were catching up with specifications, training and control systems.

**Pay attention:** We could have learned a great deal to inform the technical advice needed or to guide financial assistance and investment if we had better observed what people were doing themselves and asked about their intentions and plans for reconstruction. Early rapid surveys had identified intentions to build in block, but we were not systematic enough in analysing and acting on such information.

**Investment:** The investment by families themselves in their shelter and housing was far more than they received in assistance, but can take time for people to organise. They may have more urgent bills, or intermediate plans to earn funds for reconstruction, but they will mobilise resources, these capacity and processes need to be factored into planning by agencies as they are by families themselves.

**Extended families:** Before the earthquake a high proportion of the population lived in joint family arrangements in large houses, sharing kitchens and other facilities and tasks. Reconstruction saw a major shift to nuclear families and individual houses, with impacts on intergenerational relationships, household tasks, the management of household budgets and the settlement pattern.

**Women:** Women played a major role managing shelter and reconstruction, including supervision of construction work on site as they were more likely to be at home and men were frequently away for work. Ensuring women had access to information was vital in achieving good results. At the end of the programme, communities reported that the greatest socio economic change post earthquake had been the increased roles of women.

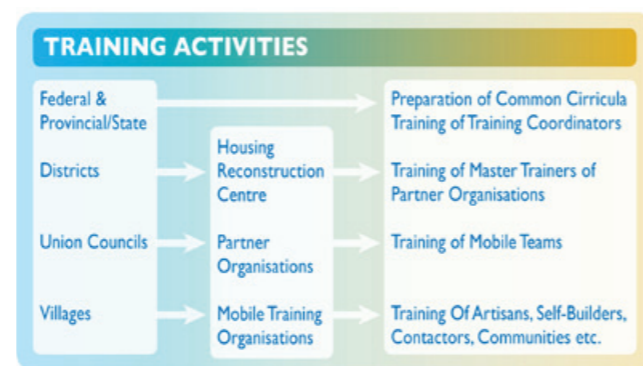
## Training: the skills to implement safer housing.

**Technical assistance:** The point of all technical assistance was to add value to, or improve, the quality and safety of reconstruction. It was a strategic investment to optimise and safeguard the financial investment by government, donors and by people themselves.

**Training and experts:** Engineers, including those of the armed forces, and other professionals were educated in engineered construction, and conventional technologies. They needed a new education in local and traditional materials like stone and timber, and in non-engineered construction in order to be relevant for housing reconstruction. Key to this education was learning from local master artisans, and learning practical skills, developing a partnership and exchange of knowledge. The process therefore was not only about learning earthquake resistance measures, but addressing more fundamental and larger gaps in knowledge and creating new working relationships.

**Timing for training and technical assistance:** The earlier training happens the greater the chance new construction incorporates improvement measures. People start reconstruction as they are ready, they don't wait. Training needs to be as early as possible to be in time to avoid mistakes and to equip people to do better. Masons are also most open to reflect on shortcomings and the importance of changes soon after the disaster.

**A training strategy:** Starting from an agreed set of standards, policies were developed during winter 2005 for how training of trainers, of masons, orientation of households and public awareness could be designed to reach scale, to operate in sequence, to ensure continuous development responding to needs, and to monitor impacts.



**'Earthquake masons':** As the area turned into a massive construction site, many people became masons overnight, they were called 'earthquake masons', meaning they were not masons before. It was difficult for households to discriminate between skilled experienced masons and brand new ones. Training had been designed to add hazard resistance measures to the skill set of existing masons. It adjusted to address the need to redress the skill and experience deficit of new workers, with accelerated basic training.

**Migrant labour:** A high proportion of the labour on all sites was migrant labour from other districts, taking advantage of the income opportunity. They were less likely to participate in training and forego daily wages. Training had to adjust

to be on job, and in other languages to ensure they were captured in the upskilling strategy.

**Demonstration:** We built demonstration versions of the standards for reconstruction in the places including repair and retrofitting measures to test them locally including on costs, to incorporate revisions and recommendations, to get feedback from masons and local people, to train a group of skilled workers, to generate discussion. This was the most effective communication, but donors were reluctant to invest in such model houses, thinking print material and classroom training was sufficient.

**Technical assistance overall was difficult to fund:** While US\$1.6 billion was mobilised for housing grants only about US\$20 millions was mobilised for technical assistance. Although, the quality of reconstruction was very good (over 90% compliance), the shortage and unpredictability of adequate resources forced limited technical assistance personnel to work often in difficult conditions

## Communication: listening and exchanging information.

**Mobile phones:** The number of mobile phones in the earthquake affected area increased by 400,000. The rehabilitation of the masts was done within days of the earthquake, and the coverage was expanded. Many people used cash grants for recovery to buy mobile phones. Mobile phones helped them to communicate with dispersed family members, many undergoing medical treatment, to contact relatives organising remittances, to get better prices and organise transport for materials, to be contacted for damage and stage inspections, to get information on training, government decisions and know about meetings, invaluable in remote areas and in cities alike.

**Cars:** Private car and small truck ownership also increased as more people and goods needed transportation.

**Movement:** Individuals and extended families took several paths to recovery, including members moving for work, for education, or for family reasons. Households may need to clear debts, or borrow, or work in sequence with some of the family completing a stage helped by others, before returning the help themselves.

**Avoid information vacuums:** Using radio and other media in various local languages was vital to communicate decisions as soon as they were taken and at scale. This mitigated expectations, speculation, misinformation and misinterpretation.

**Two way communication:** An equal effort was made from the first few weeks to identify and answer the frequently asked questions, establishing two way communication between decision makers and the affected population. Communication was not based on one way 'messaging', but also on listening, discussion and responsiveness.

**Communities:** To complement and reinforce the media based communication activities, over 3000 village committees were mobilised to facilitate sharing information, promote training, and for people to directly access officials to take and answer questions.

**Timing:** There was a wide range of information and advice to communicate to people, on policies and eligibility, on hazard resistance, insulation, water management. But we couldn't overload people with all the information at once, or communicate a message only once, the timing and sequencing was important for absorption, and sustaining information was important because not everyone is on the same speed.

**Don't confuse people:** Some agencies took initiative early to provide technical advice in print materials. This advice was superseded by later government validated standards, but the initial posters remained in circulation causing confusion, and leading to problems for people who followed who had followed early advice.

**Clarity during uncertainty:** The timing and prevalence of information and the clarity and consistency in the programme provided direction and reliability for the community in a time of trauma and uncertainty.



Shaheen discussing steel reinforcement with women.



Engineer (left), learning practical concreting from mason (right).



Ahsan explaining reinforcement details with masons.

## Timber is contentious.

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**Valuing timber:** Many families did not want to cut down their large structural timber for use in T-shelter. They understood its value and the challenges for procuring good quality affordable timber for reconstruction. Their choice was almost always to plan and invest for the longer term and live with minimal conditions in the shorter term. They were also conscious of the local political economy around timber.

**Calculating timber:** Timber became a contentious topic nationally and internationally, with strong lobbies advocating against the validation of masonry filled timber frames, or timber reinforced masonry typologies for reconstruction, warning of environmental disaster. The opponents of timber standards did not do their homework. The validated techniques were more efficient in terms of timber than the destroyed houses and were constructed in remote areas using largely salvage timber. On the other hand large quantities of timber were consumed in new roofs over masonry houses, and a greater volume of timber was used annually as fuel by a household than was needed for the construction of average timber frame house.

**Fuel:** Fuel and energy was correctly identified early as an issue as people left the mass of stone houses for lightweight tents and shelters. Large numbers of unfamiliar and inappropriate fuel efficient stoves were distributed and rejected unused. The move to hollow concrete block houses made fuel efficiency and insulation a new long term problem. Initiatives to adapt the local mud stove resulted in a solution which was affordable, halved the consumption of wood (and therefore the time spent to fetch wood) and cooking time and was widely and successfully adopted and replicated.

**Natural resource management:** Timber extraction was supposed to be controlled for local reconstruction needs with controls on export out of the area. Pre-earthquake environmental degradation was identified as contributing to vulnerability and risk as well as deteriorating soil quality. Opportunities to prioritise natural resource management and proactively invest in environmental and economic sustainability needed high level policies and implementation and greater consideration in all programming.

## Housing issues include land issues, and require policies and expertise.

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**Land is scarce:** Land is extremely scarce and valuable, not only in urban areas but also in remote rural areas. Subdivision means holdings may be very small and barely subsistence. If a house has collapsed or is damaged and additional space is taken up by salvage, by tents and shelter or new materials, the total has significantly increased the housing requirements and decreased the land available for livelihoods. If a multi storey extended family house has to be unpacked into single storey, or nuclear family accommodation, housing consumes more land.

**Topography affects construction :** Steep hillsides mean that terraces are narrow. Houses are built against the retaining

or breast wall, there is not space for the engineering standard distances recommended between buildings and retained slopes. Many earthquake prone areas have steep hills and the same issue, usually with stone walls. Households should not have to be non-compliant with standards due to such site constraints. The engineering community needs to determine feasible technical advice for this common situation instead of avoiding it.

**Abandoning land:** Just after the initial disaster there were many rumours of further earthquakes. Landsliding had dammed a river to form a large lake. In panic, people started selling their valuable land. The Government took timely notice of this trend and stopped the transfer of land until the situation stabilised.

**Minimising donor villages:** At very early stages philanthropists, NGO and donor agencies wanted to address housing needs by creating new or model villages. The Government did not promote this trend of donor driven agendas, instead they channelled resources directly to families to decide for themselves where they wanted to live, and to build the choice of house they preferred.

**Landless:** Some families lost their land completely in major landslides or inundation, or no longer had viable holdings, or could not return to highly unsafe sites. This issue was not addressed until the end of 2006, when a supplementary policy or voluntary resettlement was developed based on empowering people (funds and administrative support) to acquire a piece of land..

## Assist at origin where possible, manage displacement, anticipate movement.

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**Assisted at origin:** From the outset of the response, all efforts were made to assist people at origin, with the army assisting the most remote and highest altitude areas in close coordination with NGOs working from lower altitudes. The objective was to enable people to maintain livelihoods, social networks, and prepare for reconstruction. All subsequent assistance was also decentralised to hubs, local centres and to the household level and coordinated to ensure the same provision to all as far as possible, mitigating pull factors.

**Missing at origin:** As assistance was designed to reach people at origin, requiring family representatives at least to be present for damage assessment and other procedures. For those who chose to move or needed to move, temporarily or permanently, there needed to be also a mechanism for them to access information and assistance.

**Camps:** In the first months, 475 tent villages were established as people moved to lower altitude or close to road and cities, 120 were formalised into camps with access to services. At the height, only 275,000 people were displaced in camps, representing less than 10% of the affected population. After a winter with no further loss of life, camps were closed from March to June 2006 with a return support process, to ensure people could restart their lives and be on site at home to avail of the assistance they were eligible for in time for the building season. Most of the

people that were unable to leave the camps were landless people. This triggered the adoption of the landless policy or voluntary resettlement.

**Displaced to outside:** Despite the fact that some buildings were not damaged, and/or were assessed as safe, the impact of the damage and the continuing aftershocks had a massive affect on people’s perceptions of safety. People stayed in tents or shelters in their gardens for several months. Official assessments can help reassure people to reoccupy buildings and reduce displacement, but it is not only a technical issue, fear takes time to subside, and differs for various people.

## Watch the results.

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**Clear objectives:** The objective for the shelter was life saving and ensuring people could choose to stay at origin, that no one would die due to their shelter conditions, and that basic needs could be met and that displacement would be minimised. This was achieved. The objective for the rural housing reconstruction programme was that all households would rebuild safer homes in as short time as possible, and that the culture of construction would be improved for all future building in the area. This was also achieved.

**Rate and quality:** The focus was on the rate of reconstruction and the quality of reconstruction; the total number of households reaching completion and to agreed acceptable standards of safety. This was achieved through ‘carrots’ and ‘sticks’, and through always tracking the progress and results through a single, simple and solid MIS/GIS system. Where the rate of construction was slow, the bottlenecks or reasons for delays were analysed and addressed. Technical assistance was evaluated on the basis of adoption and replication, not by numbers of people trained for example, but by whether trained masons were building to the required standards or not.

**Hazards and housing:** The emphasis in technical support responded to the crisis and focused on earthquake safety. Later stages of programmes took up opportunities like rainwater harvesting capitalising on the new prevalence of pitched roofs. In retrospect, more could have been done to ensure safer housing was better housing, particularly around sanitation, and that safer settlements were more sustainable settlements.

**Vulnerable households:** The expectation that communities would support the sheltering or reconstruction needs of the most vulnerable was too optimistic, as most of the population was preoccupied with their own needs. The most vulnerable needed additional technical support.

**Compliance:** The term underpinning reconstruction and used throughout the programme in Pakistan was compliance, not supervision, not enforcement, recognising the responsibility and effort was by the house owner to comply with safer standards in their own interests ensuring that they have access to information, materials and skilled labour to build a safe house. Our inputs were simply to support them to do so.

## Learning and practice.

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**It can be done, we can learn by doing:** Responsibility for reconstruction was entrusted to households themselves, with financial and technical support committed by ERRA. Families, communities and construction workers had to quickly develop the capacity (awareness, understanding, skills) to implement safer and better reconstruction. This was not only capacity building by training, but capacity building by doing. In the same way, the Government institutions and the majority of the 80 implementing partner organisations did not have previous expertise in hazard resistant construction or owner driven programming, but developed extensive capacity through training and then in implementation.

While pre-existing capacity would be ideal, it is not an insurmountable constraint to the delivery even of such a large and complex programme. International and national expertise were used strategically and economically in advisory, training, mentoring and support roles but the lead role in the programme was by local staff, predominantly disaster affectees themselves. The extraordinary achievement by local teams and households themselves to take such care to create a better future for their children in hugely difficult and pressured conditions should show the assistance community and governments the potential of people to affect change for themselves and give great hope to others across the world in an era of increasing hazards and climate change.

**Moving practice forward, our responsibility to learn.** The ERRA programme built on recognized developments in ‘owner driven’ programming in Gujarat and attempted to mitigate risks witnessed in inequitable and poorly coordinated responses. The programme has combined several elements to devise and test an improved model, it has also generated several innovations and advances in partnership, private sector engagement, management of information, financial disbursement, grievance mechanisms, technical and programming solutions. The results of this programme should have redefined roles and skills sets, and moved practice forward. However, we have seen from subsequent disasters in Haiti and elsewhere, an inability to capitalise on learning. A major reason may be that those involved in the shelter response don’t know what happens afterwards, to people’s lives and homes. This document is an attempt to fill in the story in the case of Pakistan.

The ERRA programme needs to be examined and debated by governments, donors, technical professionals and the assistance community. It behoves the technical community in particular to consider lessons in partnership models, pooled expertise and resources and in field based work. It behoves the donor and assistance community to consider lessons in trusting people and government with control of finances and decision making, in effective and efficient assistance investment and in considering the longer term from the outset.

**Kashmir Earthquake 2005**  
Shelter and Housing Recovery



Typical house before the earthquake.



Most local houses pancaked, extensive timber salvaged.



Timber reinforced masonry construction.



Masonry infilled timber frame, local techniques regenerated.



Orphan headed household in damage assessment ID photo.



Constructing demonstration shelter, 2005.



Confined masonry block construction, demonstration house.



New block businesses along the river valleys.



Narrow terraces, many houses include retaining walls.



Waqas Hanif ERRA programme manager on site to discuss progress.



Large scale participation in community meetings, access to information and identification of issues to be resolved.



Print information widely available confirming policies, standards, procedures for grievances, common for all.



New typical housing and settlement pattern in the earthquake affected area. Note change to lighter roofs, and individual houses.

## Kashmir 2005 Urban recovery was more complex and less successful than rural recovery.

**Reconstruction:** In the 2005 earthquake Muzaffarabad, the state capital of Pakistan Administered Kashmir was heavily damaged, losing almost 10% of the population in the city. While public sector reconstruction was implemented quickly reinstating government and critical facilities, housing and private sector recovery suffered from limited access to credit and other challenges. Previously multi storey buildings which housed extended families collapsed, temporary shelters on the same sites reduced the density, driving growth of the city including on marginal lands. In 2015 only limited reconstruction has progressed in the city centre, many owners who lost their homes are still renting.

**T-shelter or nothing:** High cost, pre-fabricated shelters on concrete bases with service connections were provided to urban households, but many would have preferred the option to have the value of the shelter (over US\$6000) instead to invest in permanent reconstruction. Despite government efforts to negotiate flexibility with the donors, there was no scope for people to exercise choice over assistance. Over 50% of the T-shelters are still there.

**Renting and hosting:** In the larger towns people who had lost their homes found options hosted by relatives or in rental accommodation enabling families to choose locations. Vulnerable families who were eligible for temporary shelter were not able to monetise the assistance for rent, which could have been more cost effective.

**Planning:** Risk mapping and associated planning support was provided to Muzaffarabad in the first months after the earthquake, but it was a costly rapid externally driven activity at a time when the city was still profoundly in shock, handling massive emergency needs, political and media attention. City officials expressed concern that they were not able to engage in the planning process more fully, that they were ill equipped to drive it, and that a sustained institutional support and development process was needed including measures to increase community engagement, to communicate risk and to promote safer building as was happening in rural areas. The result of all the inputs were some large infrastructure investments, but limited improvements in local planning capacity, development control or private and commercial building.

**Partners:** The rural housing reconstruction programme was established early and attracted donors and partner agencies for implementation. On the other hand urban areas had masterplans but no clear strategy to rebuild or improve private housing. Although the cities suffered severe losses and remain at high risk, assistance agencies could not mobilise funds or get agreement on programmes to accompany the urban reconstruction process, and the majority saw it as too complex or chaotic and did not have the skills to engage in it. In retrospect, urban areas had the far greater needs for technical support on land, information, construction, risk and a range of social and economic issues.



Muzaffarabad in 2005, extensive damage and displaced families.



Prefabricated shelter on the site of a 3 storey house, 2008.



Prefabricated shelters still prevalent 2015.



Uncontrolled development in Muzaffarabad, urbanization on marginal land, poor construction quality, increasing risk.

## Ziarat 2008 Reconstruction without a programme.

**Ziarat earthquake and shelter:** On 29th October, 2008, a 6.4 earthquake occurred close to Ziarat north of Quetta in Baluchistan, destroying traditional long mud houses. Temporary shelter assistance supported families to stay in their villages, and were constructed to withstand the harsh winter. Over 11,000 winter shelters were provided within 3 months. Below zero temperatures restricted the option to reconstruct early, either in mud or in new masonry.

**Financial assistance:** Affected families received unconditional cash assistance in the weeks after the earthquake, just before Eid and 6 months before the construction season.

**Technical assistance:** Apart from limited diagnosis carried out during the shelter programme, no information, training, demonstration or guidance was provided for reconstruction despite the risks and despite the extensive training capacity available in the country developed through the 2005 earthquake programme.

**Risk:** Mud walling is a highly vulnerable technique. Nonetheless, improvement measures were devised in collaboration with earth experts from various countries and under the aegis of the National Disaster Management Authority. This information was not disseminated in the affected area, or in the nearby districts which are equally vulnerable. Quetta was severely damaged by an earthquake in 1935.

**Reconstruction progress:** Assessments early in 2010 showed that the majority of families were still in shelter, and those who had started to rebuild were trying to include improvement measures, but based on no technical knowledge or information, for example using unrestrained girders. In 2015, reconstruction is still extremely slow and generally very unsafe. Many households are still living in shelters, having incrementally added mud masonry or raised the roof level. Planned, sited and expected to be only a temporary measure the shelters fall far short of permanent solutions.



2008, Ziarat, typical mud wall long house, fully destroyed.



2008, Winter shelter in below freezing conditions.



2010, New construction with steel girders to reinforce walls.



2015, T-shelter from 2008 with additional mud walling, no permanent reconstruction by this household.



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**Further Reading:**

<http://www.erra.pk/publications/latestpublications.asp>  
[http://reliefweb.int/sites/reliefweb.int/files/resources/RHRP\\_PAKISTAN\\_WEB.pdf](http://reliefweb.int/sites/reliefweb.int/files/resources/RHRP_PAKISTAN_WEB.pdf)