PCR TOOL 5
Learning from the Housing Sector

Introduction

Most low-income housing in developing countries, especially in rural areas, is constructed by people themselves. In urban areas, it is more common to find a variety if housing production processes with a number of the urban vulnerable living as squatters or tenants. When a disaster strikes, low-income housing usually suffers the greatest damage.

The housing sector can offer important lessons in achieving successful people-centred reconstruction for three key reasons:

1. There is substantial evidence of people playing central roles in constructing houses. The knowledge from this could be applied to post-disaster reconstruction.

2. Much of the context that defines housing in any location will also apply to reconstruction. Although it may have been changed by the disaster, and those changes must be taken into account, it is important for post-disaster reconstruction to be consistent with housing solutions developed outside of the emergency situation.

3. The same context also helps us to understand how housing performs during a hazard and thus how its limitations contributed to the resultant disaster. Unless we understand the underlying vulnerabilities and capabilities, as well as strengths and weaknesses in construction, it

will be difficult to build back safer. Some of the most successful reconstruction programmes such as ERRA in Pakistan adopted vernacular skills and technologies with a good disaster record.

People-Centred Reconstruction (PCR) values the role people play in housing. People often show great resourcefulness, and are empowered in the process of their involvement. Most governments now realise that the people provide a more cost-effective way of producing housing than they can themselves and that they will need the resources of those people to help resolve housing backlogs. Consequently there has been a general move away from top-down policies of housing provision, towards approaches that facilitate social housing processes. PCR adopts the same approach for reconstruction. Whilst doing so, it realises that conventional housing is not always perfect; it can be constrained (for instance by inadequate access to land, finance or information). Disasters, and the influx of additional resources, that follow, may generate opportunities to overcome some of those weaknesses.

Predominant housing processes and their disaster performance

A lot of factors influence how housing is designed and built including: tradition, culture, climate, available knowledge and skills, available materials,

Formal urban housing	Informal urban housing	Informal rural housing
Land is acquired and registered ↓ Site and house plans are designed and approved ↓ Infrastructure is installed ↓ Houses are constructed ↓ Titles are allocated ↓ Houses are occupied Taxes on land and housing are established	Land is invaded or acquired informally ↓ Occupants build a shelter ↓ Over time this is expanded and improved to become a house ↓ Infrastructure is accessed piecemeal and inadequately ↓ Eventually ownership may be regularised if regularised taxes are established	Land is owned and shared under traditional rules ↓ House design and construction are mostly vernacular ↓ Infrastructure is basic and sometimes shared ↓ Home ownership is often not formally registered and can pass on within families

access to finance, access to land, rules and regulations and government policies and strategies. An analysis of housing in any given country usually involves a distinction between formal and informal housing processes, and rural and urban locations, in order to acknowledge important differences in how housing is built or acquired accordingly. In urban areas, for instance, land is often limited and expensive, resources must be purchased, and various standards and regulations apply. However, in rural areas, land is plentiful, housing resources are often available in the natural environment, and mutual aid is common too. Furthermore, rural housing is often also informal. In informal housing standards are commonly ignored, houses are not registered, and construction is predominantly guided by traditional knowledge and access to finance and land. The three main processes can be distinguished as shown on page 1.

After a major disaster, agencies undertaking large programmes need to develop a good understanding of the above three major processes, and in large countries they may also have to identify regional variations. Agencies who focus on smaller areas can undertake a more limited analysis.

Formal urban housing processes include individual privately built houses (built, either for owner-occupancy or for rent), or housing schemes (including multi-occupancy buildings) built by the public or the private sector. They are usually designed by professionals (planners, architects, engineers), which makes them expensive. According to Yahya et al. (2001), less than half of the urban population of developing countries can afford to build in accordance with prevailing formal standards. The poor have insufficient access to land or finance for housing, and lack the power or

Construction with stabalised soil

This house is being built with stabilised soil blocks in Bondeni, a century old low-income settlement of Nakuru, Kenya. Practical Action collaborated with others in Kenya to campaign for the adoption of performance building standards to replace prescriptive standards. Thus, construction with stabilised soil is now permitted. In addition, the NGO worked with the municipality of Nakuru to speed up the building permit process. This makes it easier for low- to medium income urban households to build houses formally, and to end up with registered titles.

photo © Practical Action, Zul Mukhida

House is being built with stabilised soil blocks in Bondeni, a century old low-income settlement of Nakuru, Kenya

the right connections to improve their access. To overcome some of those problems, the provision of serviced sites, sometimes with a core or starter house, was introduced and became quite popular in the 1970s. Owners were expected to finish the sites themselves but since official standards still applied,

Factors that influence disaster performance of formal urban housing

+ housing that is designed and built following the standards is generally more resistant to disasters, particularly if those standards incorporate disaster-resistant construction	- standards can be circumvented by landlords, builders or corrupt inspectors, leading to poor quality construction; rental housing at the lower end of the market often suffers from this
+ formal housing is often in locations that are less vulnerable to natural hazards	- many countries lack adequate capacity to enforce the implementation of standards
+ formal housing makes greater use of building professionals and qualified builders which should enhance its quality	- in order to facilitate people's access to formal housing, there is an encouraging tendency to reduce standards and simplify procedures; but there is a delicate balance with maintaining sufficient quality to resist disasters
+ formal housing tends to use durable materials and is often maintained well, which should maintain its disaster resistance	- good urban land is scarce and expensive, tempting people to opt for locations that are cheaper but riskier
+ Formal housing is built on documented land, which is key to legal ownership titles.	- disaster risks are often poorly understood or mapped, or can be underestimated; even formal housing can be on vulnerable sites
	- extensions or modifications to formal housing may weaken their disaster-resistance

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that somewhat reduced the costs, but not enough to reach the bulk of the urban poor. As a result, the public sector abandoned direct provision of housing to urban residents in favour of strategies that would enable social housing processes. These included, for instance, easier access to finance, performance standards to replace prescriptive standards, and simpler compliance processes. In the private sector, there has been far less change.

Informal urban housing processes have become the most common solution to shelter the urban poor. They often start with a very simple and cheap core, but, if resources allow, will grow and improve over the years in a truly incremental process. Villa El Salvador, now a municipality of Metropolitan Lima, started forty years ago as an invasion of desert land, with shelters of poles and bamboo mats. Nowadays the municipality contains many good two to three-storey houses with concrete frames and brick masonry. In many developing countries, more than half of the urban population lives in informal housing. Amongst the key reasons for this are: the scarcity and high cost of urban land; lengthy and costly standards and procedures; and difficultly in securing sources of finance. Some poor urban households rent, others squat on public or private land. Frequently the urban poor prefer a central location, close to livelihood opportunities, rather than a settlement on the fringes of town which area long and costly ride away. They are often aware of the disaster risks that certain sites pose, but have to weigh those against their immediate need for survival. Informal urban housing tends to be the most disaster-prone of the three processes.

Informal rural housing processes are the predominant form of rural housing. They can be incremental, similar to informal urban housing. Houses are often designed to also cater for livelihood activities, e.g. with spaces to work, to keep livestock, or store produce. Rural housing makes wider use of the resources available in the natural environment than urban housing, but

Informal urban housing such as this in peri-urban Lima is located on very hazard-prone sites
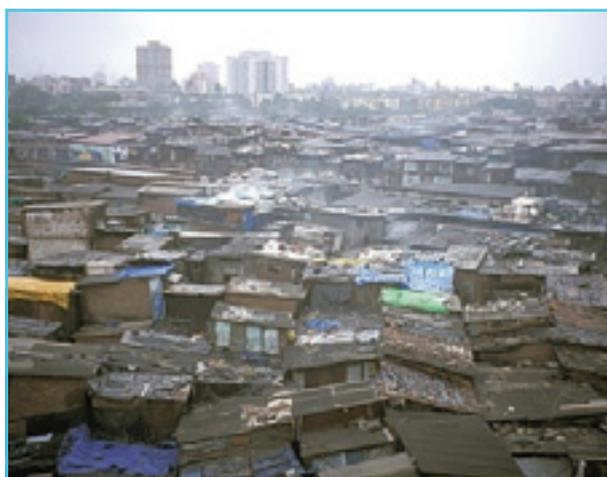

Dharavi in Mumbai is Asia's largest slum, with densely packed housing at risk of various hazards

Factors that influence disaster performance of informal urban housing

+ people with self-build experience have certain building or organisational skills, and where theseare lacking they often know where to get them.
+ over time, much informal housing will improve provided tenure is secure enough
+ popular housing processes can empower people and give them greater voice, which may improve their access to housing and reconstruction resources.
+ informal settlements can have a tradition of mutual aid as well as strong social and community organisations which can be invaluable to help communities prepare for disaster, and to organise relief and organise reconstruction.

- a lot of informal housing is poorly built, lacks maintenance, and if land tenure is insecure, there is little incentive for improvement. This is thesame for much of the rental housing market as landlords look to maximise profit.
- when improvements do take place, there are limits as to what is feasible withoutstarting anew. The same does apply to retrofitting disaster-resistant components.
- Informal urban housing is often located on disaster-prone sites, e.g. flood plains or steep and unstable slopes.
- Informal housing is densely packed, with little space between the houses for people to flee, take refuge, or for the access of emergency services

This house on a char (river sandbank) near Faridpur, Bangladesh is built on posts to cope with flooding

Another rural house in the same country is built on a soil plinth, to lift it above flood waters

Factors that influence disaster performance of informal rural housing

+ vernacular rural housing that has been well maintained has been proven to be resistant to disasters of considerable magnitude
+ there is a wide use of local construction practices, using materials such as timber, bamboo frames or earth materials, which, if properly constructed can stand up well to earthquakes and moderate storms
+ cultural traditions often have influenced building practices making these adequate to climatic conditions and maximising the use of resources.
+ there often is a tradition of mutual aid and strong community organisation which can be used to help communities prepare for disaster, and to organise relief and reconstruction
+ some rural communities have early warning systems for disasters as well as temporary measures to make their houses more disaster-proof

- some of the natural materials used, especially soil and thatch, and sometimes bamboo and timber, are not very durable and easily affected by humidity or insects, which weakens their performance
- if good traditional materials become scarce, people have to make do with alternatives that may be less resistant
- "modern" materials like cement, steel and corrugated iron sheets are making their way into rural areas, yet if the skills to use them properly are lacking, this can lead to poor quality housing too
- rural residents do not always have the means to maintain their houses well, nor to replace them when they deteriorate; this puts them at risk.
- while rural residents are often aware of some of the risks their sites pose (especially with respect to regular events like flooding), they are less aware of their exposure to other hazards

in some cases these resources are being over-exploited and becoming scarce. In many countries, rural housing has a rich tradition, with designs and technologies that have been passed on and improved upon by generations of rural builders. There are usually good reasons for the way rural houses are built, and some of these may derive from previous experiences with disasters; these are not to be ignored. There is ample evidence of self-help and mutual aid in rural building, and many communities also have builders specialised in specific housing components.

How to learn from the housing sector?

Ideally, learning should take place at the local, national, and international level, and involve different actors at each.

Local level learning should involve staff of the reconstruction agency that has decided to work in

the location, representatives of the target group, and potential other partners, including the local authority.

Where can you get the information from?

- Joint inter-agency housing assessments. It is important to include expertise to understand local main construction typologies, land and material uses, major resources, related services such as water and energy, gender issues. Visual checks and enquiries.
- Key housing actors in that location, such as housing co-operatives and groups working on land and property rights.
- Baseline surveys in this particular area (statistics on production of low-cost housing, local building practices, data on previous disasters)

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National level learning should focus on housing policies and strategies developed by central government, and the legal framework, which includes laws, codes, standards and regulations with respect to, e.g., land, planning, housing design, construction, materials and disaster resistance.

Where can you get the information from?

• Relevant Ministries such as Public Works, Housing, Land & Infrastructure, and their key departments' dealing with building codes, land, statistics.

• Project evaluations and housing or construction sector studies done by national, international agencies, research institutes, World Bank and other financial and development institutes. Housing finance institutions.

• Specific successful housing projects and programmes. These can be found through publications promoted by Universities, NGOs and the Boards of Architects/Engineers and other sources for built environment professionals. (chambers of commence, both public and private sectors)

International level learning can help to fill gaps of knowledge in a given location or country.

Where can you get the information from?

• Handbooks such as Shelter after Disaster, Strategies for transitional settlement and reconstruction, lists six reconstruction options for non-displaced people, and 16 methods of

assistance. It is possible to find information and examples of good practice on virtually all of those within the housing sector worldwide.

• Networking within the 'housing community of practice' and Internet data collection.

• Best Practice Databases of awarded schemes that encourage agencies to disseminate examples of good practice.

What to learn from the housing sector?

In PCR Tool 1: *People-Centred Reconstruction, an Introduction*, we set out a list of 23 Guiding Principles for PCR. Many of those principles also apply to regular housing, and we can therefore often find knowledge and examples of good practice of them about them as well as examples of good practice in the housing sector, that could

be transferred to reconstruction. Some of those principles have been treated in detail in other tools; below, we therefore focus more on principles that have less attention elsewhere.

1. Supporting and empowering communities to build.

This is the principle with the most widely available information on various types of support. The most common of those is **capacity building** (some call it training), which a lot of reconstruction projects already include. Additional information on this can be easily accessed; see also case study 1 in PCR Tool 3: *Learning from disasters*. Agencies such as UN-Habitat and the World Bank have recognised that communities and their local builders can achieve a lot in construction and subsequently they support **community contracting**. Communities can often improve their own settlements more quickly and cost effectively than commercial contractors, whilst building community cohesion and learning in the process. Community contracting is increasingly used to provide infrastructure, such as water, sanitation, roads and drains, as well as community facilities. It often follows community action planning (CAP), as CAP priorities can be turned into community contracts. This concept has also been applied in reconstruction, e.g. in Sri Lanka after the tsunami. See the Resources section for further details.

Financing housing can be a problem. Lending institutions usually demand a formal land title, which many people do not have. However, they can act as examples for other organisations wishing to operate cash-for-shelter schemes. Where these options do not exist, **community savings and credit schemes** can sometimes help. These systems allow members to spend on a major investment when needed, e.g. a new roof or additional room, or small business, etc. Where such schemes are well embedded in strong communities, they can be linked to formal lending institutions, or supported by NGOs, donors or authorities. Community-led savings are an important tool for Slum/Shack Dwellers International in their housing construction; see: http://www.sdinet.org. The Shack Dwellers Federation of Namibia has a revolving fund that brings together savings from all its member groups, as well as government contributions. This case was a finalist in the 2007 World Habitat Awards.

The **Community-Led Infrastructure Finance Facility (CLIFF)** has been established by Homeless International specifically to boost community-based savings and community contracting. Amongst others, CLIFF provides loan guarantees for loans to community groups, offering banks greater security in their money lending. See: http://www.homeless-international.org/standard_1.aspx?id=0:36953&id=0:27820&id=0:27813.

2. Planning with communities

A well-known tool is Community Action Planning (CAP). This has been used on a very large scale in Sri Lanka's Million Houses Programme in the 1980s (see IIED, 1994, in the Resources section), and later applied in some of the post-tsunami reconstruction projects. See also: PCR Tool 7: *Planning with the People*, for more information.

3. Including all, especially the most vulnerable

The most vulnerable households in a community often need special attention, and there are generally more vulnerable households after disasters. This issue is addressed in PCR Tool 4: *Assessment of Reconstruction Needs and Resources* and PCR Tool 7: *Planning with the People*.

Women are more vulnerable to disasters than men, particularly in locations where gender inequalities exist. It is important that this vulnerability is not worsened by a poor reconstruction process. Furthermore, women have different housing and services needs to men, which must me acknowledged. A number of organisations, such as SDI, pay special attention to the role of women in housing and reconstruction; see: http://www.sdinet.org/ritual/women. The Huairou Commission is a network of grassroots women organisations currently working on tackling gender discrimination in land and housing development, and creating communities resilient to disasters. See the Resources section for further details. See: http://www.huairou.org/campaigns.

4. Avoiding relocation

When a disaster strikes, experts will often suggest relocation to more secure sites. In cases of extreme risk this may be necessary but, where possible, relocation should be avoided; it can threaten livelihoods and break up social networks, both of which are key to reducing vulnerability. Relocation is also often suggested in housing improvement programmes. There are alternative solutions:

- **Neighbourhood re-planning** involves working with a community in a participatory planning process (see PCR Tool 7: *Planning with the People*) to re-arrange the use of space so that families do not have to move out when a settlement is improved. There are many examples of this approach in upgrading.

- **Land sharing** originated about 30 years ago in Thailand. Here, squatter communities, supported by NGOs negotiated with land owners to give up part of the land they had occupied for commercial development, against the right to secure tenure on the remainder. As a result, settlements had to be densified. See Angel and Chirathamkijkul (1983) and Povey and Lloyd-Jones (undated) in the Resources section.

- **Vertical development** is used to free up land for other uses or to accommodate additional families. Its applications can range from simple

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Building workers constructing and appartment block for inhabitants of Dharavi, Mumbai.

two-storey houses or terraces to apartment blocks. In the 1990s, the Indian NGO SPARC started working with the Indian National Slum Dwellers Federation and the NGO Mahila Milan towards the vertical development of Dharavi, in Mumbai. This had become necessary due to commercial pressure on the land which threatened to evict slum dwellers. The first 4-storey apartments were built for the Markhandeya Housing Co-operative, with HUDCO funding. Later, even higher blocks were built, for example the Bharat Janata co-operative (see: http://www.sparcindia.org)

5. Securing tenure.

Lack of tenure can prevent people from accessing support for reconstruction and restrict housing improvement and urban upgrading. There are many forms of land tenure, and security does not always need to come from having a registered title; some countries instead provide right of occupancy letters security (see Quan and Payne (2008) and Payne (ed., 2002) in the Resources section, and http://www.gpa.org.uk)

Tenure regularisation is a common component of many urban upgrading schemes, and therefore examples can be found in many countries. It provides ownership rights to people who may have been squatting before, or had shared or bought land informally. This method for regularisation could be applied to reconstruction sites where people have no demonstrable ownership. Ownership does not have to be on an individual basis; an upgrading project in Voi, Kenya, for instance developed a

Community Land Trust model, where land was held in communal ownership. A similar principle was applied to a reconstruction project in El Salvador (see Case Study).

Where there are no official attempts to regularise tenure, squatters sometimes adopt a strategy of building shelters with a light frame structure; removable housing, which can be easily taken away should the threat of eviction arise. This principle can be applied in reconstruction too; one project in El Salvador used a light steel frame to construct removable housing, another in Kenya had removability as a criteria in designing transitional housing (see the Applications section).

An alternative approach has been to **simplify title registration**. An outspoken advocate for this is Hernando de Soto (1989) of Peru, who influenced the Peruvian government to drastically change its land registration and regularisation procedures. Even if rules are changed, people need to be made aware of the alteration and convinced of the benefits of registering titles. This was not the case in Peru, where a study by UN-Habitat after the 2007 earthquake revealed a wide range of forms of land and house ownership; it was generally estimated that about 80% of the affected population had no formal titles, and therefore could not apply for a government reconstruction grant, offered tp registered owners only.

A good source of information on land rights, tenure and regularisation is the Global Land Tools Network housed by UN-Habitat: http://www.gltn.net.

6. Supporting affected people to make informed choices.

People need information to enable them to build back better - this also applies to housing improvement. Information should be provided in the right format, see PCR Tool 9, *Communicating*

Girl using a computer at a resource centre for poor farmers in rural Bangladesh

Better Building. **Housing and building information centres** serve as a continuous source of information to the public, e.g. the Building Centres programme in India, under HUDCO (see: http://www.hudco.org), which also plated an important role in supporting reconstruction following earthquakes in Maharashtra in 1993 and Gujarat in 2001. The establishment of **community resource or learning centres** that cover a wider range of subjects is more common. Some have been set up with donor funding in developing countries. Most common are **telecentres**, usually run on a commercial basis; but the poorest have neither the skills nor the money to make use of them. In India, the Self Employed Women's Association (SEWA) runs a network of centres with internet access, the Sanskar Kendra, across Gujarat. Here women homeworkers can get information on rights and entitlements and opportunities to gain income or access markets, as well as ICT training; see http://www.sewaict.org/SEWA_Sanskar_Kendra.asp

7. Prioritising environmental sustainability.

Incorporating environmental sustainability into reconstruction projects involves looking at: how settlements are being produced; how they are used; and how they are disposed of at the end of their useful life. Some information on this can be found on the ProAct web site: http://proactnetwork.org/proactwebsite.

Sustainable housing has been in the spotlight for at least two decades, though more in the North than in the South. The concept has extended to all three phases of housing: production, use and disposal. A number of methods have been developed, for example **lifecycle analysis** and **rating** (see Taipale (2010)). Some of these methods are also being tested or adapted in developing countries; e.g. India has its GRIHA rating system for buildings. Large reconstruction programmes create huge demand for materials and may have negative environmental consequences. When this is feared, the emergency market mapping and analysis (EMMA) tool (Albu, 2010) can be used to explore this further. Some NGOs working in the South have a strong record in sustainable construction; these include Ecosur/Ecosouth, which is mainly active in Latin America (http://www.ecosur.org) and Development Alternatives in India (http://www.devalt.org) which also runs the basin South Asia building information network (http://www.basinsa.net/taranet/websitepages/basinsadefault.aspx).

The **energy used** during the lifespan of a house, for cooking, lighting, heating, cooling, productive uses etc. is another environmental concern. Poor people will use most of the energy they consume for cooking. Excellent sources of information on energy use for cooking are the Household Energy Network, HEDON (http://www.hedon) and the magazine Boiling Point (http://www.hedon.info/BoilingPoint:Archives). Other energy uses in the house can often be reduced by proper design.

When buildings reach the end of their lifespan, they need to be disposed of. There is an increasing body of literature in the North on how that can be best done, and emerging experience in the South, see: http://buildnet.csir.co.za/cdcproc. The ProAct network (undated) has produced a useful guide for planning building waste management in disaster settings; see:
http://www.proactnetwork.org/proactwebsite/en/policyresearchtoolsguidance/brief-technical-guides/building-waste.

8. Setting appropriate standards and regulations, and complying with them

The legal instruments put in place by authorities to regulate the quality of construction can both help and hinder the poor in their housing and reconstruction processes; see Yahya et al., 2001. Construction experts often argue that imposing stricter disaster-resistance standards and regulations will reduce the impact of disasters, but in practice, the constraints they pose commonly undermine the benefits. In particular:
- Standards often do not apply everywhere, e.g. many rural houses are not covered;
- They are unaffordable to more than half the urban population in many countries. Failure to meet the regulations often also means that the ensuing houses cannot be formally registered, with two negative consequences: (1) those unable to meet the standards and regulations, and thus at risk of demolition, are less inclined to invest in better housing which makes them vulnerable, and (2) not being registered is depriving inhabitants from reconstruction aid;
- In many countries, standards are a colonial legacy, more suited to upper and middle class housing than low-income housing, for example, they favour modern materials over vernacular technologies or require complete houses, rather than allowing for the incremental housing so often practised by the poor;
- Standards take a long time to develop or change; it is difficult to fast track this process after a disaster;
- Adherence to standards needs to be controlled; in some countries the capacity to do so is lacking. Control also provides an opportunity for corruption, allowing builders to get away with poor quality work, sometimes with devastating consequences in a disaster.

In countries where standards and regulations do not apply to or cannot be afforded in most housing, a reconstruction strategy that hinges on compliance is doomed to fail. What will be more effective in such cases are guidelines encouraging

PRACTICAL ACTION

people to build better and safer, allowing them to do so incrementally, and incorporating vernacular technologies with proven disaster resistance (see case study).

In urban areas, this would have to go hand in hand with a strategy of recognising informal settlements and avoiding demolition of sub-standard houses, which is already in place in many countries. If they would also allow land and home ownership to be registered quickly and without insisting on compliance with all standards and regulations, that would enhance urban reconstruction.

In countries where most houses are already built according to standards and regulations, it is still worthwhile considering how these can be changed to accommodate greater numbers of people, and better disaster-resistance, e.g. by moving to performance standards and accommodating incremental construction.

Applications

Case Study 1: Communities are contracted for post-tsunami reconstruction works in Sri Lanka

The Community Rehabilitation and Reconstruction Partnership (CRRP), co-ordinated by the IFRC and UN-Habitat, and funded by 12 national Red Cross societies, was the largest post-tsunami reconstruction programme in Sri Lanka. It built on the experience of the one million houses programme implemented in the country 15-20 years before. As was the case then, there was an important role for Community Development Councils (CDCs). Supported by CRRP mobilisers, these CDCs were responsible for community action planning (CAP) from the start. Not only was the CAP important for housing reconstruction, but also to determine the use of an infrastructure fund allocated to each community. The prioritised works were implemented through community contracting (Lyons, 2010).

UN-Habitat not only applied the principles of community contracting to Sri Lanka, but also to post-tsunami reconstruction in Aceh, and post-earthquake reconstruction in Pakistan, under the heading: "the people's process of reconstruction", which is applied to houses as well as infrastructure. They list the advantages of the approach, compared to conventional contracting, as follows:

Comparative advantages of community contracts (Lankatilleke, 2010)

Process	Conventional contract	Community contract
Planning	Outside professionals	Community
Design	Outside professionals	Community assisted by professionals
Physical works	Outside contractor	Community
Labour	Machine intensive	Labour intensive
Experience	Goes out of community	Stays within community
Quality of work	Chances of being inferior	Good, it's their own
Profit margin	High	Low
Feeling of ownership	None	Very high
	identify and locate	

Case Study 2: Communities drive land adjudication in Aceh

The Boxing Day 2004 tsunami not only caused huge damage, but also great problems in land registration in Aceh. Many of the registries were destroyed, or their records illegible. People lost their title deeds with their houses, and landmarks and boundaries were washed away. Local government capacity was also crippled. This created a major bottleneck for the people-driven reconstruction process that the Indonesian government proposed. In partnership with the World Bank, the government launched the Reconstruction of Land Administrations in Aceh and Nian programme in August 2005. This put communities in the lead of a process of "community-driven adjudication". At settlement level, survivors were brought together to discuss property locations and boundaries. These were then mapped out, and community leaders as well as survivors signed the map as being a true record of the settlement. The plots were then marked out by surveyors and legal titles issued by the BPN. By early 2009, it was estimated that about 120,000 households had been able to rebuild on plots determined by a community mapping process.

See OXFAM in the Resources section

Case Study 3: Community information centres support reconstruction in Gujarat

After the 2001 earthquake, Abhiyan, a network of development organisations in Gujarat played a key role in enabling the State's owner-driven reconstruction policy to be implemented on the ground. A key concern of Abhiyan was to mitigate the risk of future disasters, and they were aware that vernacular technologies and local building knowledge might be unable to achieve resilient reconstruction. In collaboration with GSDMA, Abhiyan therefore create Setus, a chain of information hubs in clusters of affected villages. This ensured that people were informed not only about better ways of building, but also about their rights and entitlements. In addition, training was organised for local masons and homeowners, and alternative building technologies demonstrated to people. In addition, the use of alternative building materials was regulated through guidelines endorsed by government.

See: Duyne Barenstein and Iyengar (2010) in the Resources section

Case Study 4: Transitional housing as a start for reconstruction in Kenya

In 2007, violence following the elections left half a million Kenyans displaced, mainly in the Rift Valley. Many lost their houses, and more than half were housed in over 300 temporary camps. By the next planting season, in March 2008, security had improved in some areas, allowing some to return to their original plots, whilst others managed to buy new plots in locations where they felt safer. The government then initiated operation Rudi Nyumbani ('return home'), allocating approximately €100 to each affected family, plus €250 to those who had their houses destroyed. This amount was insufficient for permanent reconstruction, and the shelter cluster therefore suggested it be used for transitional as a start for future development, to suit the changing context. This approach adopted the concept of incremental housing development, quite common in Kenya. The following criteria were used:

- SPHERE standards for space requirements, that is 18 m^2 for a family of up to five;
- Ability to build the shelter in two days, to avoid losing too much time in the planting season;
- Ability to upgrade the shelter to permanent quality, that means a solid structure and roof to be provided (of poles and galvanised corrugated iron sheets); but with temporary walls of plastic sheeting;
- Ability to disassemble the shelter and move it to a different site if necessary, e.g. because of rising insecurity or disputes over land;
- Ability to disassemble the shelter and re-use key components for permanent housing;
- Ability to extend the shelter from basic SPHERE standards.

GOAL and UNCHR commissioned local artisans to build a prototype, in a very visible location, to obtain feedback, and as a result some changes were made. A bill of quantity was subsequently drawn up, and GOAL procured 497 'shelter kits' at a cost of $385, which were distributed at central points.

The government initially resisted the shelter cluster approach, considering the standards applied too low for a reconstruction programme. Given the scarcity of resources, though, it had to lower its expectations, and ultimately accommodated much of the experience of the pilot project to a reconstruction programme of 40,000 units, with house sizes being increased to 20 m^2, and more permanent walls of adobe or timber.

See Aubrey (2010) in the Resources section.

Case Study 5: Innovative approaches to tenure facilitate reconstruction in El Salvador

A devastating earthquake hit El Salvador in 2001. FUNDASAL, a well-known local NGO, undertook a reconstruction programme of over 7,500 houses, built on a mutual-aid basis in the province of La Paz. It included two innovative approaches to resolve land issues. Land tenure was dubious for a considerable number of plots, some of the people affected were tenants, and others formed part of co-operatives without recognised land titles. Therefore, over 1,800 houses were built with a light steel frame structure to make them movable to another plot when the need arose. In other cases, a collective certification letter was accepted as evidence of land tenancy.

See Building and Social Housing Foundation (2004) in the Resources section.

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Resources

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Acknowledgements

International Federation
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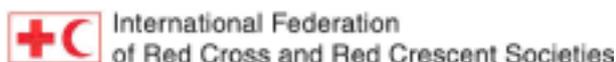
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