A.18 Pakistan – 2010-2014 - Floods - Overview

Overview

Emergency: Repeated flooding in Pakistan.

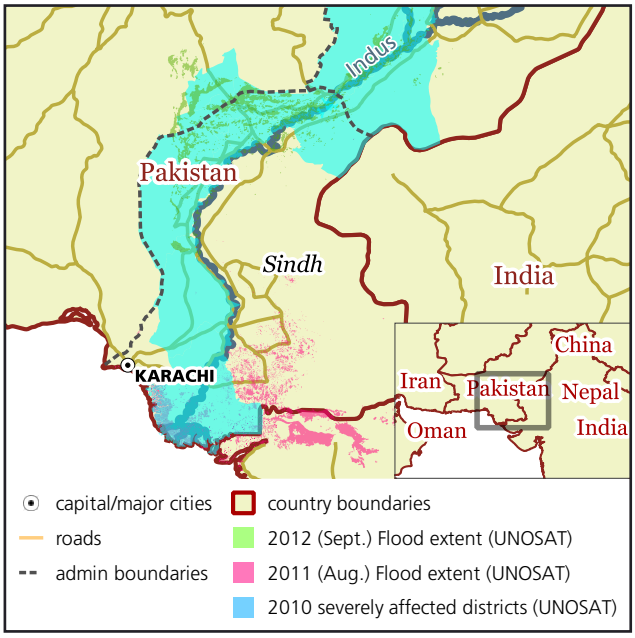
Date: July 2010 onwards

Damage: Since July 2010 over 2.5 million homes are estimated to have been damaged or destroyed.

People affected: Tens of millions of people have been affected since 2010.

Summary of emergency:

Since 2010, annual monsoon rains have been extreme, unpredictable, and unprecedented in recent memory. Intensive agriculture and deforestation, together with poor building practices have greatly increased the risk of flooding and the vulnerability of millions of people.



Emergency timeline:

[a] July 2010: Flooding affects 20 million people (a fifth of Pakistan's surface area is submerged) and over 500,000 houses damaged.

[b] September to October 2011: Flooding affects 8.9 million people. 1.5 million homes damaged.

[c] September 2012: Flooding affects 4.85 million people. 640,000 houses damaged. 140,000 people living in relief camps.

[d] August 2013: Flooding affects 1.5 million people, almost 80,000 houses damaged.

[e] September 2014: Flooding affects 2.5 million people and 100,000 houses damaged.

Country background

Pakistan ranks 145 out of 187 on the 2011 Human Development Index (HDI), female literacy is among the lowest in the world (3% in some areas), whilst chronic malnutrition affects almost half of children under five years old in Pakistan.

Emergency

In the flatter, less mountainous plains of southern Pakistan the ground water table is high. Floods usually occur during the summer rice season when fields are already saturated.

Flood waters can remain stagnant for months, damaging infrastructure and homes, preventing return and recovery, and also impacting agriculture, employment and food security.

In the first days of the emergency, people often seek shelter on raised bunds that are normally used for roads, or else in any available public building.

Impact

People who were already physically and economically vulnerable, have been hardest hit by each flood and coping capacities have been gradually worn down as in some cases recovery is halted by a new flood.

The worst affected areas have been northern Sindh, southern Punjab and eastern Baluchistan, home to around 10 million people.

Shelter strategy

The National Disaster Management Agency (NDMA) was the formal lead of the Cluster. The NDMA has been the government agency in charge of government disaster response and planning since 2007. Whilst challenges were recognised in planning vertically between levels from national to regional to local, at the local government level District Disaster Management Agencies (DDMAs) there was significant cooperation and a process for the approval of works and support of partners, mirroring the de-centralisation of the Cluster coordination process itself.

The Shelter Cluster has focused upon the implementation of low-cost, timely shelter construction.

Supporting shelter reconstruction on such a large scale has been challenging in terms of coordination, quality control and collaboration with local Government. The Shelter Cluster has led with several initiatives:

Local "sub-district" co-ordination

Co-ordination has focused upon mapping actors at the village level. The Shelter Cluster initiated "District Focal Points" - NGOs who were given a small grant for transport and staff to constantly liaise with and monitor progress of different shelter partners. This was fed back to the Shelter Cluster but also to the district

Government offices, thus enhancing support and acceptance of this work by local authorities.

Temporary Settlement Support Unit teams

These teams constantly travel around the various shelters (temporary, institutional or otherwise) and provide regular reporting on outstanding needs and return progress.

Assessement of Coping Capacities in Return Areas (ACCRA) also helps to provide a multi-sector overview of needs and gaps in return communities.

Technical aspects

Following the 2010 floods, then the largest humanitarian disaster on record, the immediate priority was to deliver temporary shelters to millions of people across five provinces – an enormous logistical challenge. As this transitioned into return and recovery mode, shelter cluster members focused on a strategy for early recovery, including:

- Brick and cement-mortar foundations, continuing up to window line as the main flood-resistant design element. (This assumed reliance on specialist builders / masons).
- Dissemination of basic "how to" information on flood resistant elements to improve protection for houses
- Federal Government distribution of an unconditional cash / compensation grant of up to US$ 800 for flood affected families to support recovery. This was by far the largest investment to date in recovery of any sector, costing almost US$ 1bn of Government/donor funding.

By mid-2014 – and two major floods later – the overall strategy has been adapted. The leadership of the Shelter Cluster for the majority of this time has rested within one agency, and collective learning about the context of housing and livelihoods in the vulnerable communities, traditional architecture and community resilience and the impact of energy-intensive materials on the local and global environment has all fed into the strategy.

The latest strategy now includes:

- Research in traditional and local vernacular building designs and materials, adapted and improved to achieve flood-resistance. This has also minimised negative environmental impacts where possible.
- More emphasis on community-based training for enhancing the capacity of people to rebuild their own homes, reducing reliance on external masons or builders.
- Conditional cash transfers to beneficiaries in tranches triggered when pre-agreed components of shelters had been completed to an acceptable standard; leaving much of the management and ownership of the process in the hands of the beneficiaries.

To further support the transition from emergency to recovery, emergency shelter kits have been improved:

- Materials are re-used as roofing elements in the more durable, flood-resistant house built when return has been possible.
- A versatile "roofing kit" includes up to 20 bamboo poles, one steel beam and two plastic sheets for a structure larger than a tent.
- A solar light is included to increase a sense of security and safety at night.

The combined response reached over 200,000 homes between late 2010 and mid-2014. Though this is impressive, it represents only around 10% of the total number of homes destroyed by flooding over that period. Most of the remaining 90% have rebuilt basic shelters using materials or methods that still leave them highly vulnerable to future floods.

Funding considerations

Cutting the costs of individual houses has been achievable by shifting away from fired bricks and cement towards traditional architecture, mud, clay and lime based construction. The cost of an average house construction – including agency support and overhead costs – has been reduced from around US$ 1,200 after 2010 floods to just over US$ 500 in the 2011 and 2012 responses. This, multiplied across the 100,000 durable homes constructed or underway equals an overall "saving" of almost US$ 70 million. This "saving" has resulted in reaching more than twice as many people for the same investment.

Looking to the future

While major cost savings and carbon reduction strategies can be applauded, the very notion of flood resilience in shelter needs some level of certification. As global climates are changing and natural disasters like floods in Pakistan are increasing in frequency and intensity; it is vital that we agree on strategies and designs for what constitutes a flood resistant shelter.

There has yet to be an independent analysis of the physical capacity of reconstructed homes to resist intense rain or prolonged immersion in water, and this is a crucial technical issue to study.

In September 2014 another flood has devastated thousands of homes across both Pakistan and India. Four years after the "mega-flood" of 2010, in the face of this predictable natural hazard, homes are still collapsing. This need not be the case, as we have learned through our shelter projects over these preceding years of flood and recovery.

An example of an emergency roofing kit which will later be used for a transitional shelter then again for the roofing elements of a permanent flood resistant shelter.
Photo: Magnus Wolfe Murray

The second, transitional stage in the life of a roofing kit. This temporary hut, lived in for about a year, will be dismantled and the roof will be used for a permanent house. This saves around US$ 111 from the cost of the new shelter.
Photo: Magnus Wolfe Murray

Two different types of shelter: in the foreground, an unfinished, square, flat-roof house with compound bamboo ring beam on top of the walls. To the right, a round house (known locally known as "chulla"). This was the first time people in this village had constructed permanent shelters.
Photo: Magnus Wolfe Murray

Sangar district, Southern Sindh, December 2013. Lime stabilised mud brick foundations and walls. Flood resistant with pitched, not flat, roof.
Photo: Magnus Wolfe Murray

An important part of securing community confidence in new techniques: testing the durability of lime-stabilised soil blocks tunder water. These blocks had been in this bucket for about 6 months, so the community was confident that the materials would be flood-resistant.
Photo: Magnus Wolfe Murray