

CASE STUDY

PAKISTAN 2023-2024 / FLOODS

CONTEXT / SETTLEMENT



SHELTER TYPE

SUPPORT METHODS



CRISIS	2022 flooding
PEOPLE AFFECTED	33 million people affected*
PEOPLE DISPLACED	7.9 million people displaced*
PEOPLE WITH SHELTER NEEDS	2.4 million households** with damaged homes 16.8 million individuals** with shelter needs
PROJECT LOCATION	Mirpurkhas district, Sindh, Pakistan
PEOPLE SUPPORTED BY THE PROJECT	489 HH (2,620 ind.) with Shelter Support
PROJECT OUTPUTS	14 villages supported with an integrated program 489 flood-resilient shelters built 148 latrines and 11 hand pumps installed 4 villages supported to build pathways, access roads and washing pads 546 people received construction training 104 semi-skilled labourers received mason training 66 Hygiene Promotion Sessions delivered
SHELTER SIZE	19 m ²
SHELTER DENSITY	3.5 m ² per person
DIRECT COST	USD 550 per HH (Cash for Shelter) USD 185 per HH (WASH) USD 142 per HH (Community Infrastructure)
PROJECT COST	USD 1,500 per HH for Phase 1



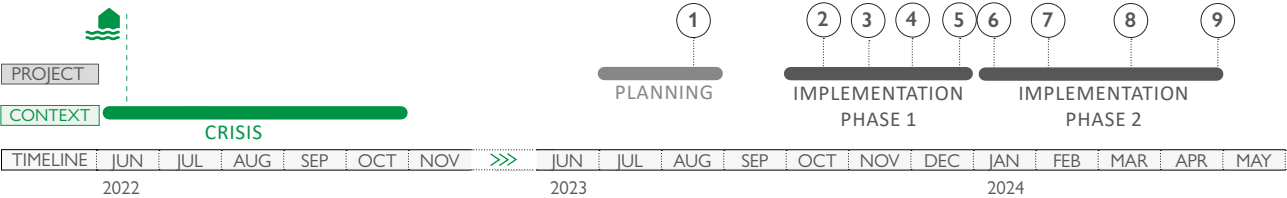
PROJECT SUMMARY

This project provided integrated Shelter, WASH and CCCM support to flood affected communities in rural Sindh, enabling households to rebuild their homes, restore WASH services and implement priority community infrastructure. It adopted a Settlement Approach and a “collective milestone” methodology to accelerate construction, reduce costs and strengthen participation and accountability, with cash for shelter, technical training and HLP support at its core. The project piloted low cost, low carbon, flood resilient shelter designs rooted in local typologies.



* OCHA Revised Pakistan 2022 Floods Response Plan Final Report. ** PDMA Sindh and Balochistan.

Local “kacha” houses were particularly vulnerable to rains and floods.



- Jun-Oct 2022: Floods**
- Aug 2023:** Typical shelter designs were produced based on vernacular typologies.
 - Oct 2023:** Start of phase 1 implementation across four villages.
 - Oct-Nov 2023:** Community Action Planning and HLP due diligence for phase 1.
 - Nov-Dec 2023:** Construction of shelter, WASH and community infrastructure, plus training conducted, under phase 1.

- Dec 2023:** Phase 1 completion.
- Jan 2024:** Start of phase 2 implementation in 10 villages.
- Jan-Feb 2024:** Community Action Planning and HLP due diligence for phase 2.
- Feb-Apr 2024:** Construction and training for phase 2.
- Apr 2024:** Phase 2 completion.

CONTEXT

The project was implemented in Sindh, southern Pakistan, where temperatures range from hot to extremely hot, and the annual June–October monsoon brings heavy rain and recurrent flooding. During 2022, exceptionally high rainfall fell over Sindh, causing widespread flooding and extensive damage to homes and basic services. Large parts of the country were submerged at the peak of the floods.

SITUATION BEFORE THE FLOODS

Rural Sindh faces chronic development challenges, including widespread poverty, low literacy, limited services and high malnutrition. Most households live in one room “kacha” mud houses, which are unable to withstand even minor flood events and require extensive repairs every year. Many households do not own land, living instead under sharecropping arrangements with local landlords. Latrines are rare and open defecation is common. Livelihoods are primarily casual labor in agriculture and smallholder farming. The population is predominantly Muslim; however, the project targeted specifically minority Hindu communities.

SITUATION AFTER THE FLOODS

During the 2022 floods, entire communities relocated for weeks to higher ground, typically along raised roadways. By late 2023, floodwaters had receded and communities had returned, but many were living in makeshift shelters since the original houses were damaged or destroyed; hand pumps had also been damaged and were non functional.

NATIONAL SHELTER STRATEGY

At onset, a Shelter Sector was established, incorporating a CCCM Working Group, and a Common Pipeline was created to provide emergency shelter kits (tarpaulins, poles, ropes, pegs), NFI kits (blankets, mattresses, etc.) and toolkits to local organizations for distribution to flood affected communities, both in displacement and on return. The pipeline was later expanded to include WASH items (Hygiene and Menstrual Health Management kits).



During the first phase of the project, stabilised mudbrick shelters were constructed, but were later discontinued in the subsequent phases.

In 2023, the government of Sindh, with support from International Finance Institutions, launched the Sindh Peoples Housing for Flood Affectees (SPHF) to support 2.1 million households to build masonry, flood-resilient, one-room shelters through cash grants. The project aligned with this plan, while piloting adaptations and integrated components intended to inform and complement the government programme.

PROJECT DESIGN

The location of Mirpurkhas served as a pilot to identify practices that the SPHF platform could adopt: accelerating construction; stretching available funding; reducing reconstruction’s carbon footprint; and better meeting community defined needs. The government scheme focused exclusively on housing, while this pilot demonstrated an integrated approach, adding WASH and community infrastructure alongside shelter within a comparable per household budget envelope.

To make this viable, the organization developed masonry versions of indigenous “kacha” typologies—a pitched roofed house and a circular “chonra” with conical roof—requiring fewer bricks than the flat roof model promoted by SPHF. This is because the flat roof design had taller walls and the roof structure was more expensive, while the circular design had a shorter perimeter than rectangular designs. Households wishing to build the costlier flat roof shelter could supplement support through salvaged materials or savings. Savings from the lower cost typologies funded WASH and community infrastructure.

The project also adopted a “collective milestone” approach, whereby households were only eligible for the next tranche when all households had reached the milestone, to increase construction speed, reduce logistical costs and allow stage-by-stage construction training.



The project studied the local typologies, such as circular houses with thatch roof, to propose alternative, more affordable solutions than the flat roof model.

PROJECT IMPLEMENTATION

An integrated field team for Shelter, WASH and CCCM worked with communities to conduct Community Action Planning (CAP) in each village with male and female groups, mapping priority challenges, interlinkages and feasible actions. Community identified projects (such as all-weather pathways, access roads and laundry areas) were implemented through Cash for Work teams. To share benefits widely, participation was limited to one person per household.

Village Reconstruction Committees (VRCs) and WASH Committees were formed—later evolving into Village Disaster Management Committees—comprising male and female members chosen by the community in a facilitated and inclusive process. VRCs helped identify Cash for Work participants, prioritizing the most vulnerable. A village mobilizer tracked daily attendance and progress. A multi channel Complaints and Feedback Mechanism was set up (direct to staff, a village focal person, hotline and complaints boxes). Engineers developed technical designs and BoQs; on the job training was provided to Cash for Work laborers, including on future maintenance. Tools were handed over to VRCs to maintain new assets and encourage further CAP implementation.

Shelter support combined cash for shelter and technical assistance. Low-cost, low-carbon, flood-resilient designs translated vernacular “kacha” forms into brick masonry, adding elevated plinths for enhancing flood-resilience.

Cash grants were provided in four tranches, conditional on achieving construction milestones and meeting quality standards:

- foundation excavation;
- construction to plinth level;
- to roof level; and
- completion.

Under the “collective milestone” approach, each household became eligible for the next tranche only when all households had completed the previous stage. This produced multiple gains: faster construction through mutual support and peer pressure; village level bulk procurement lowering material and transport costs; leaner staffing and logistics; and training sessions tailored to the upcoming construction stage for the entire village.

WASH support included pour-flush latrines, water supply installation or rehabilitation, and hygiene promotion. Because saline groundwater was widespread in the area, local knowledge guided borehole siting; women and girls were consulted on hand pump locations given their traditional water collection roles. Individual household latrines were not affordable within budget and communal latrines were culturally and operationally unsuitable; the project therefore provided latrines to groups of two to three closely related households—a common local practice. Considering that households were occupied in building their houses and that latrine construction is more technically challenging, a contractor was engaged to build the latrines.

DISASTER RISK REDUCTION

Shelter DRR measures included using brick masonry, elevated plinths, reinforced concrete lintels, damp proof courses, and set dimensions for key elements such as openings, including maximum spacing between the door and return wall. Construction of community infrastructure such as brick roads and pathways supported year-round access—vital during the monsoon for evacuation and for daily mobility to markets, health facilities and livelihoods—especially benefitting people with disabilities, older people, pregnant women and children.



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The project adopted local typologies and a “collective milestone” approach which ensured that the entire village progressed together in the reconstruction efforts.

ENVIRONMENTAL IMPACT

Fired brick masonry has a significant carbon and environmental footprint. The approach balanced strong community preferences for “pukka” (durable) construction and the SPHF programme requirement for masonry, with mitigation through low carbon designs that used 20–50% fewer bricks than the standard SPHF design. In Phase I, the team piloted cement stabilized mud bricks with training, on site immersion testing and a demonstration shelter. This option did not gain traction with households beyond the demonstration, so it was not repeated in later phases.

CHALLENGES AND MITIGATION

- Saline groundwater complicated water source development. Communities' local knowledge helped locate sweet water, often necessitating boreholes outside village perimeters connected by lead lines—raising costs.
- Limited local experience in latrine construction/ maintenance demanded extra training investments.

CROSS-CUTTING ISSUES

Security of tenure was addressed through systematic HLP due diligence and, where relevant, written agreements between landlords and village committees, which protected beneficiaries from eviction and clarified ownership of the housing asset. Women's participation and leadership were supported through consultations on hand pump siting, WASH committee membership and hygiene promotion activities. Inclusive infrastructure, such as all weather pathways, enhanced safe mobility during monsoon seasons for people with reduced mobility and other at risk groups.

HANDOVER AND LINKS WITH RECOVERY

The project's handover strategy was embedded in community ownership and capacity. Committees took on responsibility for maintaining community infrastructure; construction tools were transferred to VRCs to support maintenance and further planning actions; and on the job training strengthened local skills for ongoing shelter and infrastructure upkeep. Additionally, HLP documentation protected investments at household level. By upgrading local infrastructure and practices alongside housing, the intervention bridged relief and recovery phases and left behind governance structures, skills and assets under community stewardship.

OUTCOMES AND WIDER IMPACTS

The project pursued three aims: support recovery from the floods; enhance flood resilience; and identify best practices for SPHF and others. An independent research found that recipients reported a 64% increase in overall resilience to severe floods and storms as compared to the control group.



Initially, cement stabilisation in mudbricks was used, accompanied by testing and training. However, it was later abandoned based on household preference.



To protect from eviction families living on other people's land, written agreements were co-signed by the village committee following tenure verification.



Community Action Planning was conducted across the 14 targeted villages, to define priority challenges and identify proposed community interventions.

The study also reported positive economic impacts due to the safety of new shelters:

“Before the shelter, I was not able to go to the city for work because I was always at risk and afraid of what would happen to my wife and children at home without shelter. Now I feel free and safe to go to the city to work.”

While the project's influence on SPHF's core design was limited, the team successfully advocated for inclusion of the alternative low cost, low carbon shelter typologies in the Mason Training Manual, improving prospects for wider adoption. Moreover, the documented success in recovery and resilience helped the organization secure funding to support 1,000 households in Punjab using the same model following the 2025 flooding.



The project included shelter, WASH, site management and community-level interventions, mostly thanks to the savings made by adopting affordable housing designs.

STRENGTHS, WEAKNESSES AND LESSONS LEARNED

STRENGTHS

- ✓ **Intensive community engagement across decision making and delivery.** The project consistently used inclusive processes: action planning to identify priorities; community selected committees to verify housing and land tenure status; joint siting of shared latrines and water points; and community problem solving during implementation.
- ✓ **Low-carbon, culturally rooted design choices.** Rendering vernacular typologies in brick masonry (with elevated plinths and other DRR features) improved flood resilience while cutting cost and carbon relative to standard designs, aligning with strong local preferences for “pukka” construction.
- ✓ **Informed choice and dignity in housing.** Offering three typologies and clear guidance on cost and implications empowered households to select what fit their resources and identity, avoiding a one size fits all approach that could undermine cultural expression.
- ✓ **Strategic reallocation to collective goods.** Lower per shelter funding (via cheaper typologies) freed resources for community infrastructure, enabling mobility and access during the monsoon.
- ✓ **All weather access as an inclusion measure.** Pathways and road surfacing quickly proved essential during the monsoon, particularly for people with mobility issues.

WEAKNESSES

- ✗ **Cash levels and coping strategies in early phases.** The cash support provided for housing construction was sufficient only for the cheapest typology; some households sold assets to build costlier options.
- ✗ **Community budget reallocation not realized.** Although communities could reallocate community infrastructure funds to shelter, none chose to do so. Many community members were unfamiliar with exercising such decision making power and may not have fully recognized their latitude to challenge proposed allocations.
- ✗ **Contractor built sanitation limited capacity gains.** Time constraints necessitated contractor delivery of latrines; beneficiary led construction would have reduced cost and increased community skills for long term maintenance.



FURTHER READING ON SHELTER PROJECTS

On Pakistan: [SP 2010 / A.22-A.25 / FLOODS](#)

On floods response: [SP LESSONS FROM FLOODS](#)

On integrated programs: [SP 10TH ED. / CS.23 NEPAL 2021-2023](#)
[SP 15-16 / A.13 PHILIPPINES 2013-2015](#)



When chosen, local conical thatched roofs were adopted in the project.



The design choices, including the circular shape and conical roofs, helped reduced the amount of bricks and contributed to budgetary savings.

LESSONS LEARNED

- **The “collective milestone” approach reduced construction time and costs.** Collective milestones generated peer support and pressure, enabled bulk procurement savings and allowed targeted technical trainings aligned to the next construction step.
- **The Settlement Approach improved relevance and efficiency.** Multi sector teams working across a village produce a more holistic, flexible, community led response that reduced duplicative assessments and meetings and streamlined monitoring. A single, integrated Shelter WASH CCCM team reduced staffing, logistics and transaction costs, while improving coordination quality.
- **Strategic diversion of funds towards public goods can multiply benefits.** Cash invested in community infrastructure recirculated via Cash for Work into household economies and shelters. Even so, additional support may be required for households unable to participate in Cash for Work.
- **Flexible budget lines were essential in settlement programming.** Collapsing rigid lines for shelter, latrines and community works into broader post flood reconstruction envelopes allowed allocations to follow community priorities and evolving needs.

MOVING FORWARD

- As the project was extended into 2025-26, several early shortcomings were being addressed in the subsequent phase. This includes adding Disaster Risk Management activities, increasing the value of cash-for-shelter support provided to each household, and shifting more of the responsibility for the latrine construction to the households. The organization also introduced innovations in the foundation and roof design to reduce costs and free up more funding for community infrastructure.
- With additional funds, the team would invest more in community infrastructure and broaden the scope of the project to include livelihoods support and ecosystems restoration and linking to partners to provide health, nutrition and education support. With more time, the project would strengthen the Community Planning and Disaster Risk Management activities, including building stronger links to local government.



Pier foundations with sandbag infill were introduced following project extension.



The project also implemented community works such as pathways, using cash for work, which proved essential to improve accessibility especially during floods.