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Safe roofs for flood affectees

By Yasmeeen Lari

KANTA is busy decorating her rehabilitated house. It was some three weeks ago that the waters had receded from her village of Mohak Sharif in Taluka Tando Allahyar. She had hardly received any relief goods and had little hope of gaining a roof over her head for months to come.

But today she has a brand new, albeit rehabilitated, and beautifully decorated house. She is keeping it spotlessly clean and where there was filth, she has made sure that all the animals are kept at some distance.

Within 12 days of the arrival of Heritage Foundation teams in the area, 22 houses for widows, orphans and the aged had been completed and each had cost barely Rs16,000. While mud walls are rehabilitated and improvements made to make them strong, well-tested sustainable roofs (the Karavan Roof), were used to provide safe haven during next floods.

These roofs have been tested in almost 300 houses in Swat holding up loads of three inches of snow. Today in Mohak Sharif, every time a new roof is placed on walls, the family tests it by climbing on it with 14-15 household members. They now know that when the next floods come their families will stay in safety on their roofs along with their household goods and food rations.

The initial surveys of traditional house typologies in eight districts have yielded rich results regarding the possibility of fostering vernacular methodologies with sensitive interventions. The result is a cost effective solution which fosters identification within the community.

It was found that the use of steel girders along with some other urban-style methodologies of construction, belittle the beautifully modulated traditional structures made of mud and reed. These shatter the confidence of communities, by making the skills and centuries' old knowledge redundant.

The use of cement concrete, steel or burnt brick structures is generally considered to be safe. The high cost of such construction and delivery through contractors has meant that only 7-8 per cent of the 2010 flood affectees in Sindh could be provided a shelter.

Contrary to common belief, our findings show that mud walls have been particularly flood resistant. In most part, the failure is not of the walls but of the roofs, which in spite of utilising the much favoured steel girder, caused great damage to the supporting walls.

It was found that the use of improved traditional and vernacular methodologies, combined with scientifically built bamboo safe haven roof, has proved to be the most economical, safest, fastest and most appropriate shelter option.

Sustainable 'green' materials, i.e. local earth for walls, bamboo and reeds in roof construction, along with lime/mud plaster are utilised to make walls and roofs strong and weather resistant. With this methodology, it is possible to provide shelter to at least ten times more than urban style of construction.

Where roofs of houses costing over Rs150,000 cannot provide refuge, the rehabilitated houses with safe haven roofs (cost Rs15,000-17,000.), using traditional skills and materials, will keep families safe during the next flood disaster.

Additionally, it is imperative to reduce disaster risk, through methodologies which provide not only safety of life, but also safety of food rations, drinking water, livestock and livestock feed. By learning from tradition and heritage (e.g. platforms of Moenjodaro), it is possible to provide elevated earth platforms or floating structures for community use in preparedness for the next floods.

The writer is CEO of Heritage Foundation of Pakistan.