



# TC Winston response



*Building Back Safer technical training run in May by Shelter Cluster and Habitat for Humanity (Source, Shelter Cluster)*

## **Building Back Safer Framework**

*Principles, key messages and trainings component*

V.4

## **Shelter response to tropical cyclone Winston and Building Back Safer issues**

1. Category 5 Severe Tropical Cyclone Winston, one of the most severe ever recorded in the South Pacific, hit Fiji on 20 and 21 February. 44 people have been confirmed dead as a result of the cyclone and over 62,000 people were evacuated in close to 900 evacuation centres. The government declared a State of Natural Disaster for 30 days and officially requested international assistance.
2. After the cyclone destroyed more than 30,000 houses, a massive rebuilding effort was initiated across the country through the Government of Fiji-led 'Help for Homes Initiative'. This initiative provided vouchers to enable those affected in destroyed or damaged homes to purchase building materials.
3. Current monitoring of shelter recovery indicates that despite strong resilience, people are rebuilding with minimum resources and with same construction methods as before. The limited Building Back Safer improvements will lead to weaker structures, increasing the vulnerability of Fiji to future cyclones or natural disasters.
4. Humanitarian actors are working with the Government of Fiji with the aim to train hundreds of community carpenters and owner-builders in safer building techniques to complement and support the delivery of construction materials.
5. Shelter Cluster Fiji and Habitat for Humanity Fiji ran a successful three-day pilot training of trainers for carpenters in early May 2016 with Fiji Red Cross, Caritas, local universities, All Hands Volunteers members, and other organizations. Shelter cluster partners are now planning to replicate this Build Back Safer training to support people who are beneficiaries of the Help for Home Initiative or are self-recovering, as well as identify and address potential gaps in the recovery process.
6. The aim of this training is to ensure that there is a coherent approach towards strengthening the Building Back Safer principles for humanitarian actors working with the Fijian Government so that the country can better withstand future cyclones.
7. The building back safer technical training aims to support communities' self recovery and reconstruction. By enhancing carpenters and homebuilders understanding of Building Back Safer construction methods in the villages and settlements, through 'learning by doing' these trained community members would then be more able to support other households in the reconstruction of stronger and more resilient shelters.
8. Critical funding gaps remain for Shelter Cluster partners in this transition to recovery. These gaps are centred around funding for training to reach all communities, as well as programs supporting those most vulnerable with repair or retrofit of damaged homes or the construction of new homes.



9. It is imperative that the owner- builder led recovery initiatives be informed by the principles of Building Back Safer, therefore funding for training and Building Back Safer awareness remains a top priority for recovery.

## **Shelter Cluster current coordination framework in Fiji**

10. The Government of Fiji (GoF) has led the response to TC Winston. The National Disaster Management Office (NDMO) has coordinated relief efforts and activated National and Divisional Emergency Operations Centres (EOCs). The GoF called for international assistance, and the cluster system was adopted to coordinate the humanitarian response via the Fiji National Cluster system.
11. To coordinate the shelter response Shelter Cluster Fiji was activated (after having first been activated for TC Evan in 2012). The government is leading the cluster through the Ministry of Local Government, Housing & Environment (MoLGH&E) with the International Federation of Red Cross Red Crescent Societies (IFRC) as the co-lead agency.
12. Representatives from more than 58 organisations and agencies have attended Shelter Cluster Fiji meetings for TC Winston response, and receive regular information sharing and updates. 29 organizations and agencies have reported shelter activities so far for TC Winston response.
13. Key Shelter Cluster partners as Habitat for Humanity Fiji, Fiji National University (FNU), Fiji Institute of Engineers, International Organisation for Migration (IOM), Fiji Red Cross, Live & Learn, Care, All hands Volunteers and Caritas. These organisations are implementing or planning training programmes to strengthen the Building Back Safer framework in Fiji for TC response and preparedness for future disasters

## Building Back Safer principles and key messages

14. Building Back Safer (BBS) approach has replaced Building Back Better (BBB) approach because what constitutes a 'better' house is largely a value judgment.
15. Building Back Safer (BBS) involves building structures that have improved capacity to survive hazards. It also involves working with the occupants of the buildings to respond and recover from these incidents.
16. Building Back Safer (BBS) recognises coping mechanisms and traditional construction methodologies which are at the core of vernacular architecture; therefore shelter interventions should respect and promote expressions of cultural identity and ways of life using locally available materials, design and technologies.
17. Strategies to increase long-term resilience are considered essential through promotion and use of the building code and related regulation when possible.
18. The Shelter Cluster in Fiji has agreed on the 7 Building Back Safer (BBS) principles and key messages which should be considered as a priority for safe shelter awareness or BBS training programs: (1) Building Location/Siting the building, (2) Foundations, (3) Fixings/Connections, (4) Bracing, (5) Roof, (6) Accessibility and (7) Preparedness:

*TO MAKE YOUR HOUSE MORE RESILIENT TO ANY NATURAL DISASTER, IT IS IMPORTANT TO:*

*I. SITE YOUR HOUSE SAFELY:*

- ✓ *Build your house on a safe site by identifying and trying to avoid potential hazards in your location and build as well as you can to resist them.*
- ✓ *Certain vulnerable sites need to be avoided, such as hilltops, coastal zones, flood plains and valley mouths.*
- ✓ *Raise your house in flood-prone situation*

*II. BUILD ON STRONG FOUNDATIONS:*

- ✓ *Deeply anchor your house in the ground with strong foundations, setting the posts at least 0.75 metre deep in the ground. Posts and stumps should be spiked and set in concrete.*
- ✓ *Ensure foundations are suitable to your building's location and ground conditions*

*III. TIE-DOWN FROM BOTTOM UP & USE STRONG JOINTS - NAILS ARE NOT ENOUGH:*

- ✓ *Ensure that you have strong connections at all joints – the roof material to the roof timbers, the roof to the walls and the walls to the foundations.*
- ✓ *Houses have from 5 to 9 joints, each one of which must be reinforced with more than nails.*
- ✓ *Build every joint so it can't be pushed or pulled apart. Nails alone are not sufficient to hold joints together when subject to cyclonic forces. Strong connections can be made with cyclone straps, rope and wire.*



IV. **BRACE AGAINST THE STORM:**

- ✓ *Strong bracing stops your house being pushed over or pulled apart by the wind.*
- ✓ *Brace between the strong points of your house.*
- ✓ *All wall and roof panels should be diagonally braced.*

V. **A GOOD HOUSE NEEDS A GOOD ROOF:**

- ✓ *Build your roof with the right shape and pitch, and nail down well to protect against a storm. A roof with 4 slopes (hip), and each slope within the 30 to 45 degree range, is best able to cope with cyclonic winds.*
- ✓ *Roofing iron is best secured with cyclonic screws, with each flute fastened around the edges.*
- ✓ *Porches & verandas should be constructed on separate wall plates, rather than be continuous with the main roof. Eaves should be minimized, with 450mm considered the maximum span.*

VI. **LEAVE NOBODY BEHIND:**

- ✓ *Building Back Safer should include the minimum measures to enhance accessibility of your house to people with current or future physical impairments. It's cheaper to include them while rebuilding rather than to retrofit into your house later.*
- ✓ *Site the house such that any steep slope is at the back, rather than at the entrance.*
- ✓ *Ramps instead of (or as well as) steps. Ramps should have a slope of between 1:10 and 1:12, be at least 900mm wide, have a non-slip surface and a kerb on each side.*
- ✓ *Handrails should be installed, at a minimum, on the ramp, porch, toilet and shower.*
- ✓ *All doors a minimum of 900mm wide, with a lever-type handle about 1 metre off the floor, and there should be no doorsill.*
- ✓ *Toilet/bathroom/shower doors should all open outwards.*

VII. **BE PREPARED.**

- ✓ *Preparedness is critical because it is the main way to reduce the impacts of a disaster. It is important to start taking actions and prepare now.*
- ✓ *All openings in walls should have a means of shuttering.*
- ✓ *If a disaster is coming you should tie-down your house, protect windows and openings, elevate valuable items during floods, secure loose items so they won't be blown away.*

## **Building Back Safer training considerations**

19. Following the pilot 'Train the Trainer' workshop in conjunction with Habitat for Humanity Fiji, it is planned to assist other agencies roll out training programs in their areas of reconstruction. Because this is an 'owner-led recovery', with materials, but not labour, being provided by the government, it is imperative that training programs inform the affected population of the principles of BBS in a timely manner.



20. It is planned to have all training programs accompanied by educational material that portrays in graphic and clear fashion how to construct a stronger and safer house. This material should be used in conjunction with on the job training, and could remain in the village or community after the end of training.
21. The 'hands on training' is targeted at local carpenters and builders, many of whom have no formal qualifications but nevertheless may have wide experience, and work to a professional level. Within the framework of communal building, which is widespread in Fiji, these local builders have widespread influence. Workshops in a particular village should provide for the training of these builders from all the surrounding villages as well. If spaces are available in the training programs, numbers can be topped up by enrolling owner builders who may be undertaking construction.
22. What will be built during a training program? This, of necessity, must be flexible, as different condition and availabilities prevail. What must be demonstrated during construction is a reinforced series of connections between the roof and foundations; a level of diagonal bracing that prevents collapse and a means of protecting all wall openings. To achieve this level of strength in a building, training programs should have their structures approved by an engineer.
23. The training programs are designed to be 'hands on', where the participants learn by doing. This learning is reinforced by information contained in the posters and brochures. At the conclusion of the training the participants should have a clear understanding of the reinforcing of joints and the bracing of wall and roof panels. They should also be familiar with the general design principles of building a structure to withstand cat4 cyclonic conditions. A certificate will be issued to the trainees at the conclusion of the course.
24. The training is best conducted in a community development framework. This mean that the owner beneficiary contributes some "sweat equity", to prepare the site, helps the builder set up profiles & stringlines, and may do some foundation work. This preliminary work with set out can be time consuming and is best completed before training starts.
25. Depending on the length of training, size of structure and the number of trainers, from 10 to 20 trainees can be participants.
26. BBS training programmes are suited to local builders and experienced home-builders, rather than complete novices who have no building experience. In most circumstances the training is conducted through "learning by doing" rather than by classroom study. The practical aspect is supplemented by a range of IEC material in local language.
27. The training should take account of local knowledge and practices, rather than religiously adhere to a predetermined framework which may be inappropriate in some cases.

## **Shelter cluster partners programs and contact list.**

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