

A.31 Vietnam - 2009 - Typhoons Ketsana and Mirinae

Case study:

Country:

Socialist Republic of Vietnam

Disaster:

Typhoon Ketsana and Typhoon Mirinae

Disaster date:

September 29th 2009 (Ketsana)
November 2nd 2009 (Mirinae)

No. of houses destroyed:

23,500

No. of people evacuated:

356,790 people evacuated

Project target population:

Around 2,730 people (650 households) in seven provinces

Occupancy rate on handover:

100% (estimate)

Shelter size:

26 m² average

Materials Cost per shelter:

1,650 USD cash grant

1,300 USD average spend on material only



Project timeline



Project description

This permanent shelter project was implemented as part of the recovery phase of the typhoon Ketsana response. 650 households who had lost their homes were supported through cash grants to rebuild storm/flood resistant houses. A technical consultant was hired to support a national organisation to organise trainings on safe housing, develop house designs and supervise the construction of houses.

Strengths and weaknesses

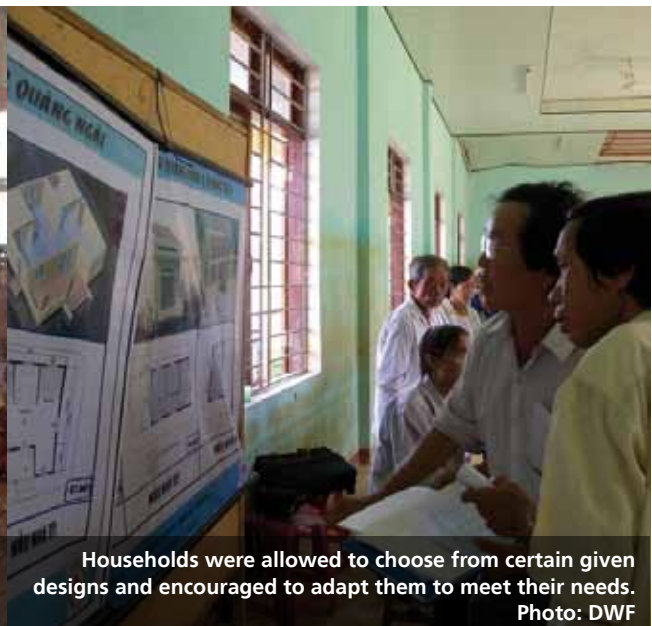
- ✓ Houses were built according to traditional design with necessary reinforcement. Daily construction work was closely supervised by local engineers.
- ✓ Families decided on the house design and were able to adjust the home according to their individual needs.
- ✓ Many families made additional contributions as they considered it a lifetime investment.
- ✓ The conditional cash grant enabled families to select local suppliers and builders whom they trusted, while benefitting from technical advice.
- ✓ Technical training helped families to follow each step of the construction work while being supported by project engineers.
- ✓ A participatory approach helped to provide a sense

of ownership of their own homes. Some members of ethnic minority groups expressed their appreciation for their houses being reinforced.

- ✗ The organisation was slow to start the project. In part this was due to not getting the right people in place in time to start recovery planning.
- ✗ Water and sanitation (both hardware and software components) should have been included in the shelter programme as part of the house package.
- ✗ The houses were not all culturally acceptable to ethnic minorities. More detailed needs assessments should have been conducted.
- ✗ More attention should have been given to the disparities between provinces regarding the availability of local labour and prices for material and transport.



Training was conducted on safe construction techniques.
Photo: DWF



Households were allowed to choose from certain given designs and encouraged to adapt them to meet their needs.
Photo: DWF

Before the typhoon

The Socialist Republic of Vietnam is a single-party state. The Government at local level is represented by the People's Committee, in every province, district and commune.

Vietnam had been rapidly industrialising and there had been a significant improvement in people's living standards. However there remained wide disparities in income and living standards across the country. The seven provinces covered by this shelter project are among these poorest provinces of Vietnam.

Vietnam has a tropical climate with a hot summer and colder winter (especially in the north). The storm/typhoon season mainly takes place from August to November.

Houses are mostly based upon traditional styles, but using different materials (brick, cement blocks, concrete, corrugated Iron sheet) instead of wood and clay tiles used in the past.

When Typhoon Ketsana struck the central and highland areas of Vietnam at the end of September 2009, the government evacuated over 100,000 households.

Five weeks later Typhoon Mirinae hit central Vietnam, causing floods that swept away nearly 2,400 houses, and hitting the same people who were recovering from Ketsana.

After the typhoon

Houses were destroyed because they were in vulnerable locations, were poorly constructed, materials were used poorly and lacked reinforcement. Houses were destroyed both by the winds and by flooding. The poor quality of construction was compounded by a lack of financial resources and awareness.

For the response the organisation provided support with food, safe water and support for livelihoods. It also distributed basic household items to 60,286 people within the first three months.

Implementation

The project started with trainings in each province to cover the specificities of the shelter programme, beneficiary selection criteria, cash grant distribution process and related guidelines. The trainings were targeted at members of the organisation, People's Committee (representatives of the Vietnamese government) representatives from the province, district and commune levels.

This training was followed by community meetings in each commune to select beneficiaries following agreed criteria.

An international partner organisation was identified to provide technical support and oversight. The houses were constructed according to the following process:

1. The organisation conducted field surveys to assess needs and local conditions for construction, paying special attention to ethnic minority needs and customs.
2. Based on information gained, house designs were prepared in line with Vietnamese national and local government standards, taking into account culture, geography and exposure to hazards. Three standard house designs were developed for each province, and later adapted for each household beneficiary.
3. The organisation approved final beneficiary lists and cross-checked information. Working with the partner organisation, each family was consulted on the design, family contributions, availability of materials and skilled local labour.
4. Trainings were conducted on safe construction techniques. These targeted local builders, project staff and beneficiaries.
5. Construction then began. Beneficiaries received the first allocation of the cash grants following the laying of foundations by local builders. Grants were paid in cash, as are all other transactions at this level in Vietnam. Payment was also made to material suppliers at this time. The organisation and its partner monitored all stages of construction.

6. Within two months, most of the 650 houses were completed. Some delay was experienced due to heavy rain and lack of access to certain communes. Eleven months after typhoon Ketsana, all houses were completed.

7. In the last month of the project an awareness campaign was conducted on "safe housing". This was implemented by the organisation with the technical support of the partner. This included the printing of 1,000 calendars displaying the storm/flood-resistant house designs, a children's play emphasising the basic principles of safe housing, posters of the newly constructed houses in each commune, and the preparation of an atlas displaying typical houses from the seven provinces.

8. In December 2010, the shelter project was externally reviewed.

Selection of beneficiaries

The organisation established the selection criteria that households:

- were listed on the poverty list,
- had lost their means of generating income as a result of the disaster,
- had no labour force (elders, family with young children (0-5 years), pregnant and lactating women, disabled people, single female headed households),
- had no significant support received from other sources.

Village chiefs and members of the organisation chaired the

community meetings to select beneficiaries. The number of beneficiaries was defined based on the criteria and on the allocated amount of cash grants.

The list of beneficiaries was then reviewed. All beneficiaries were verified on site and finalised by all levels of the organisation in coordination with local authorities and other community based organisations representatives.

10% of the beneficiaries were later checked through field visits. Once approved, the lists were issued and publicly posted in each Commune's People's Committee office.

Technical solutions

The following technical issues were standardised to make the houses flood/storm resistant:

- reinforcement of the foundations,
- reinforcement of the structure, with reinforced concrete columns (example: 4 steel bars instead of the traditional 3 bars), ring beams,
- reinforcement of the links between roof structure and walls, and roof covering,
- protection of tiled roof with concrete ribs and of corrugated iron sheets, with steel bars in coastal areas (with high risks of strong winds),
- doors and windows which can be securely closed,
- there should be an attic above the flood levels.

Logistics and supply

Households living in highland provinces faced problems regarding the availability of qualified labour force and transport of material. One local company was often building all houses for a selected commune.

In all other areas, families could easily select the builders and buy building materials in the commune shops with credit. Payment was made after receiving the cash grants.

Generally speaking, all materials were available in the localities.

In two provinces, due to lack of capacity, the material supply and construction was done by small local companies paid for directly by the families. In the other provinces where more material and local builders were available, the families paid the material supplier and the local builder directly.

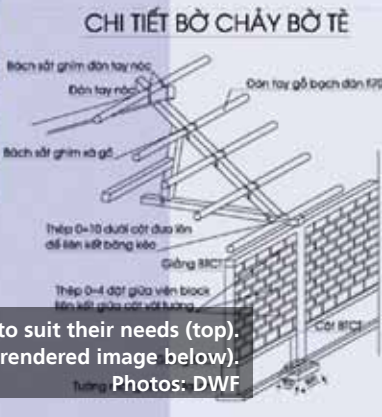
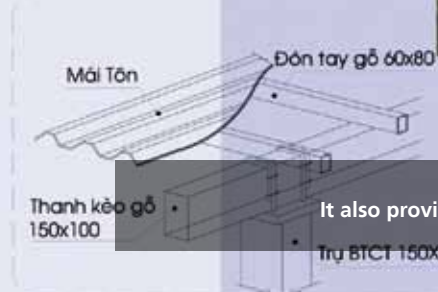
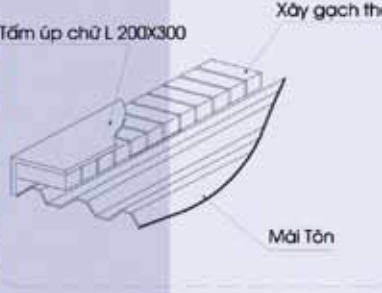
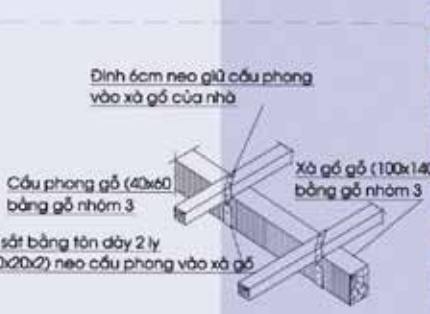
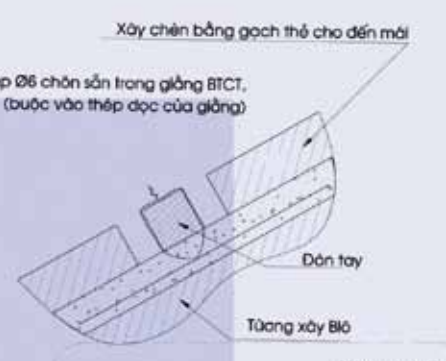
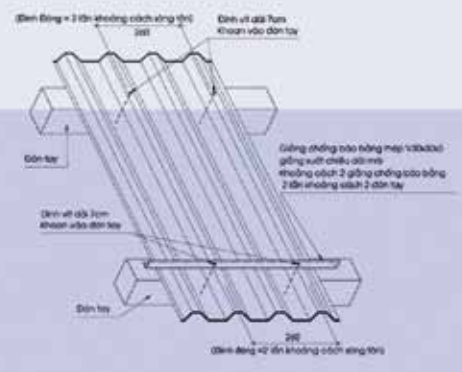
Materials list

Example for a house built in Kon Tum province:

Materials	Quantity
Gravel	3m ³
Gravel	3.7 m ³
Cement	3,300 Kg
Sand	12 m ³
Sand	4 m ³
Brick	6,000.00
Steel bar 6mm diameter	55 Kg
Steel bar 8mm diameter	75 Kg
Steel bar 10mm diameter	120 Kg
Corrugated iron sheet	28 m ³
Door 2 opening	2.46 m ³
Door	1.64 m ³
Window	2.4 m ³
Window frame	3
Lime	52 Kg
Tool	1 Kg
Steel wire	10 Kg
Paint	7 Kg
Nail	1.5 Kg
Tiles edge	54
Timber 5mmx10mm	0.36 m ³



Families were given cash to build houses according to given designs. Photo: DWF



The project allowed families to adapt basic models of shelter to suit their needs (top). It also provided technical guidance on safer construction (drawings and computer rendered image below).

Photos: DWF

