A.3 Colombia – 2010–2011 – Floods

Case Study:

Keywords: Non-displaced, Housing repair and retrofitting, Advocacy, Infrastructure, Training.

Country:
Colombia
Project location:
Department of Chocó
Disaster:
Floods
Disaster date:
2010 to 2011
Number of houses damaged / destroyed:
Over 350,000
Project target population:
5.463 people in 5 communities
80 households in target village
Project outputs:
80 elevated houses
1.1km footbridge
Disaster risk reduction activities for 5527 people
Occupancy rate on handover:
100 per cent
Shelter size:
70m²
Materials cost per shelter:
US$ 3000
Project cost per shelter
US$ 5300 (including staffing, volunteers, and logistics)

Project timeline

Project description

The project used community participation to improve the overall living conditions of 80 families who were struggling to survive following flooding. It supported a total of 5,527 people in surrounding villages with disaster risk reduction (DRR) activities. Stilt construction was used to build 80 new houses and a 2.5m high, 1.1km long footbridge. Disaster preparedness activities, first aid, hygiene promotion and safe construction trainings were also provided. The project is now an example, both at regional and national level, of what can be done to support riverside communities to mitigate the effects of recurrent floods.

Strengths and weaknesses

✓ The project demonstrates (both locally and globally) that there is an alternative to resettling people affected by floods and that living with floods is possible.
✓ Long-term, positive impact on the community's resilience, disaster preparedness and social cohesion.
✓ As logistics costs were high, a greater impact was achieved by concentrating on a few communities.
✓ The disaster risk reduction (DRR) project included housing improvements, infrastructure reconstruction, food security, environmental education, hygiene promotion, livelihoods and training on how to elevate buildings.
✓ The model is easily replicated for other flood-prone communities.
× The project was relatively small-scale and resources have not been allocated for large-scale replication.
× The project did not have either communication or advocacy strategies.
× Local government was involved late in the project.
× Water and sanitation components of the project were not resolved.
- The government had limited capacity to provide technical and financial support.
- High logistic costs demanded capacity from outside the village, staff from the organisation and local alliances.
- Risk management and DRR at local level is still solely focused on emergency response.
- Project timelines imposed by donors were very tight. The project needed to balance the timeframes and flexibility required for local construction practices, livelihoods and genuine participation against pressure to complete the project.

The project had a strong focus on training and disaster preparedness, sometimes using simulations. Photo: Sandra D'Urzo/IFRC

Before the floods

Chocó is a department in north-western Colombia, on the Pacific coast and is famed for its jungle and biodiversity.

As most of Chocó is inaccessible by road, rivers are traditionally the major transport routes.

The community of San José de la Calle was displaced by conflict in the region in the early 1990s. Since then, livelihoods have been based on timber exploitation and seasonal fishing. The remote location hampers development of alternative livelihoods and job creation, while municipal services such as electricity and water are scarce or non-existant.

In 2002, there was a massacre in the nearby town of Bellavista. Since then, international aid organisations distributed relief and made water and sanitation improvements in the area. San José de la Calle benefited from a latrine-building project, but unfortunately these were only usable in the dry season.

Until recent years, floods lasted about one month, isolating households, and interrupting schools and livelihoods. Families built mezzanine levels inside their homes to keep them and their possessions dry.

After the floods

The 2010 floods lasted six months, during which the community lost most of its economic resources. The severity of the flooding is expected to continue in future years primarily as a result of over-exploitation of the forests leading to silt deposits in the Atrato river.

Some people considered resettling closer to the main town but the community was attached to the collectively owned land. A national decree protects this ethnic group and other indigenous populations.

Implementation

The project was implemented with a focus on participation. Over the course of one year, the entire community contributed to create a village which serves as a model for other projects. The community council was the main decision-making entity.

Lumberjacks from the village worked together to cut timber and decided its price. Women cooked collectively during the construction, and children helped to carry smaller materials for the footbridge.

Continuous dialogue with the main community representatives (the council, women's groups, craftsmen and the lumberjacks union) facilitated collective decision-making. This was achieved during the donor's timeline of 15 months (one year of construction activities).

At first, craftsmen were not paid for the construction of their own houses, and only technical assistance was provided. Later, food for work and cash for work were provided to accelerate construction, though families still needed to continue with existing livelihoods activities.

Skilled carpenters were hired from outside the community. Construction was managed in teams of three people who were paid daily. The main carpenter and his assistants received US$ 340 for each completed house.

On-the-job training was provided to carpenters to ensure long-term knowledge transfer of techniques such as wooden pole treatment and replacement and the principles of elevated construction.

Initially, damaged tools were replaced by the project. Later it was decided that each carpenter or woodcutter would pay for his tools and keep them at the end of the project.

The project began by elevating an existing house and school building. However, a technical review stated that new construction, although far more expensive, would be more effective than elevating existing buildings.

A pilot house, elevated by 2.5m, was then built to demonstrate the building technique. Families would need time to adjust to the new design, especially in dry season, but were keen to live "on the first floor" in order to escape the effects of flooding. A total of eighty new houses was built.

The new footbridge design was based on a 3km long bridge built in another community. The bridge had shown to have a positive effect on psycho-social wellbeing, as villagers could stay connected with one another during the months of flooding.

A school, an elevated collective garden, a community centre and an elevated children's playground were also built.

There was no water and sanitation component to the project. Existing, partially-damaged latrines were dismantled.

Selection of beneficiaries

The entire community benefited from the risk reduction aspects of this project. In the selected village all houses were reconstructed.

Coordination

The project was coordinated with government departments and institutions. The government was

In one "model" village, the organisation built eighty elevated houses and community infrastructure.
Photo: Sandra D'Urzo/IFRC

willing to provide extra funds to complete the newly-built houses and helped to promote the project elsewhere.

Unsuccessful attempts were made to coordinate with other organisations to resolve the water and sanitation issues.

'We are happy because we are going to resist the waters, when the river will come, we will be here, ready, resisting the flooding"

Beneficiary

Community-based DRR

Five communities and schools were supported to enhance their preparedness for recurrent floods. This support included:

- risk management plans
- community risk maps
- emergency equipment
- trainings on disaster prevention for community councils and the local authorities
- training of thirty teachers and local authorities in school risk management
- risk awareness and self-protection training for school children
- a first aid post inside the schools
- two disaster simulations involving 820 people.

Several videos were produced during the project to showcase the DRR component as a model to other communities, and to increase the awareness of technical options to improve flood resistance.

In the targeted village:

- Carpenters wrere trained on the care and maintenance of the houses. 55 carpenters received a recognized training on safer construction.
- 480 household water filters and 500 individual filters were delivered.
- A solid waste management plan was established and a compost area organised.
- Seeds were produced in the collective garden to support replanting of timber species used for construction.

Technical solutions

Several elevated footbridges with a total length of 1.1km were built to connect the main dock with most homes, schools, community buildings and the community garden.

The bridge was constructed from a wooden frame with recycled wooden railings and paved with recycled plastic slabs (using 1 million recycled plastic bottles). It was one third cheaper than using new timber. Using the recycled materials also avoided using 2,800 timber slabs, equivalent to cutting 15 trees that would take up to 40 years to grow back.

The recycled plastic slabs were guaranteed for 20 years with reduced maintenance, three times the duration of timber.

Logistics

Construction involved the transportation of 24,500 sawn boards by boat.

Eleven woodcutters and five lumberjacks participated in the construction. The timber used was a local species of tree sourced from collective land or land belonging to individual households.

The timber was processed into planks in the forest and then transported to villages by boat where it was then distributed by hand.

Elevated walkways were built to enable the community to remain connected when the floods next came.
Photo: Sandra D'Urzo/IFRC