C.10 India - 1977 - Cyclone

Case study: Traditional or modern shelters

Case study credit: UNDRO 1982

Country:
India, Andhra Pradesh

Disaster:
Tropical cyclone (winds up to 270 km/hr)

Date:
28 October - 1 November 1977

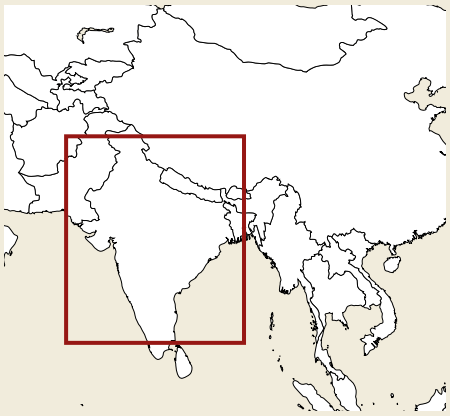
Pre-disaster Population:
Unknown

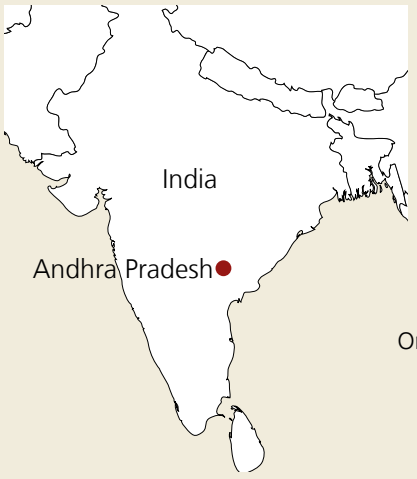
Number of people made homeless:
250,000

Number of Dwellings Damaged and destroyed:
150,000 homes, probably 90 per cent of all houses in coastal area.

Values of damages:
Monetary value unknown, but considerable losses to crops, livestock and fishing equipment.

Value of assistance (US dollars):
Unknown





Project timeline

- 2 ½ years – 500 community cyclone shelters completed
- 2 years – 15,000 houses were built using timber, mud, thatch
- 10 weeks – Housing construction complete, to fit a US Government requirement of confining assistance to a 90-day, post impact period.
- One month – Housing construction started
- November 1979 – Cyclone

Emergency

The climate was warm and the monsoon season not imminent, so shelter needs were not a high priority,

The Government made stocks of thatch and bamboo readily available for families to improvise shelters, and repair or rebuild their homes.

An international non-governmental organisation, worked through Indian voluntary agencies to build 7,000 shelters in 90 days.

Reconstruction

The state government made certain promises to provide 'pukka' housing (houses built of built of substantial material such as stone, brick, cement, or concrete) for surviving families in lieu of providing support for traditionnal types of construction. The houses to cost about 6,500 Rupees with a plinth area of about 190ft^2 (17.5m^2).

1,300 community cyclone shelters were planned by the government. They additionally constructed environmental protection measures, such as tidal embankments, tree belts and other plantations.

Strengths and weaknesses

✓ The government adopted a Preparedness Plan which included 13,000 community cyclone shelters.

✓ Evidence suggested that the concrete block housing has had a positive effect in the local economy.

× Despite the minimal need for emergency shelter and pressing agricultural priorities, one agency devoted extensive resources (US Government aid) to build 7,000 shelters. This was mainly the work of contractors, generating limited local employment.

× Opportunities were missed to instigate training programmes in improved construction techniques, the only exceptions were the programmes organized by the Village Reconstruction Organization (VRO), and a local organization Appropriate Training and Information Center (Artie).

- The debate between supporters of "pukka" housing and those of traditional housing was ultimately won by the former, with the proposed building of 20,000 "pukka" houses. However in practice 15,000 traditional houses were actually built.

The government made stocks of thatch and bamboo available so that families to improvise shelters. Non-governmental organisations also built many thousands of these shelters.
Photos: Ian Davis

Housing by a reconstruction organisation built in 1969 following the cyclone, with lean to in the foreground. In the village many of the families evacuated most of the concrete block housing to live in improvised thatch lean-tos which are climatically more suitable.
Photo: Ian Davis

Details of a model home built out of bamboo and thatch to explain a safer techniques in cyclone resistant housing. It had key elements of: a well-anchored central post, triangulation to stiffen the frame, good connections of roof to wall using metal connections
Photos: Ian Davis