Title: Cyclone Shelters

Sector: Disaster Prevention

Category: Coastal protection, disaster management (hard measure)

Sub-category: Construction of infrastructure

Geographical Context of Application: Coastal

Sub-Region: South Asia, South East Asia

Technological maturity: Applicable immediately

Implementation level: Community

Time Scale: Long-term usage of the technology

Description: Large, resilient structures elevated from the ground to protect vulnerable coastal communities from cyclones and storm surges, particularly for those whose houses are not resilient enough to withstand such events

Needs addressed:

- Protection of lives and assets

Adaptation effects:

- Protection of lives and assets
- Increased coping capacity

Co-benefits:

- Cyclone shelters can be used as schools or other community facilities when not in use as a shelter

Technology owners:

- Community
- Local governments
- NGOs

Energy source:

- construction and maintenance of the facility

Cost/Necessary Budget:

- The costs varies depending on the location and size of the shelter
- In Bangladesh, Catholic Relief Services constructed 1,500 transitional shelters and repaired 1,100 houses with a budget of USD 2.55 million (CDKN, 2013)
Consideration of the conditions under which the technology can be utilised:

- Cyclone shelters must be accessible to the target community in terms of distance from home to shelter and quality of routes for accessing the shelter
- Safety must be ensured
- Provision of adequate supplies such as food, water and clothing to shelter users
- Attention must be paid to the social and political power dynamics surrounding access and security.

Technology performance:

- Shelters have protected communities from cyclones
  - e.g. Caritas project in Bangladesh aims to protect 13,600 vulnerable people (Cordaid, 2013)
  - e.g. The Program for Construction of Multipurpose Cyclone Shelters in the area affected by the Cyclone Sidr in Bangladesh provided an estimated 62,200 people with the means to evacuate after the construction of 38 shelters (Yachiyo Engineering Co., Ltd., 2007)

Ease of maintenance:

- Need regular upkeep, particularly after an extreme event
- Construction on sites with existing management and facilities for maintaining such structures can be more sustainable

Suitability for developing countries (challenges and benefits):

- In some scenarios, encouraging people to use the shelter is challenging due to their desire to protect assets
- Local materials can be used
- The necessary training and technology should be provided to the local community
- Lack of land tenure to allocate to the construction of shelters can pose problems to vulnerable communities
- Limitations due to transport and material quality control.

Examples of how the technology has been successfully utilised:

- Improving Access to Cyclone Shelters in Bangladesh
- The Program for Construction of Multipurpose Cyclone Shelters in the Area Affected by the Cyclone Sidr
- Primary School – cum – Cyclone Shelters in Myanmar

Information resources:


