

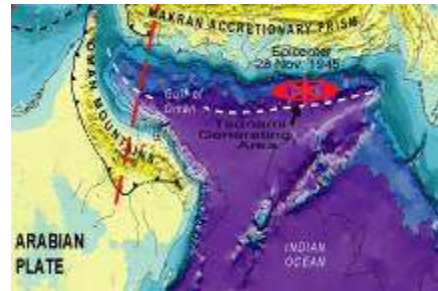


Briefing Paper

Local and Community Level Disaster Risk Reduction for Tsunami and Coastal Hazards

Background

The Indian Ocean Tsunami of 2004 brought to the forefront the vulnerability of coastal areas to this hazard. Affecting 18 countries and killing nearly 300,000 people, it was one of the worst disasters of the last 100 years. Pakistan's coastal region is vulnerable to coastal hazards including local and distant tsunamis. The Makran coast has already been hit by a tsunami in 1945 that killed 4,000 people¹. With its 1050 km coastline along the Arabian Sea, Makran ranges cover a vast area of about 400 km long and 250 km wide. The potential source of local tsunami is the fault line off Makran, around 90-130 km from the nearest shore where the Arabian Tectonic Plate is slowly subducting below the Eurasian Plate at an average rate of 19 mm per annum². Due to these faults, stress continues to build up and if the plates revert back to the original condition this will cause an earthquake which may have the potential for generating local tsunami. The tsunami generated from the fault line is estimated to strike the coastal areas of Pakistan **within 18-30 minutes**. In order to save lives, it is imperative that the coastal districts and communities understand the hazard, be able to identify the warning signs and make timely and informed decision to save lives. The districts which are vulnerable to tsunami and coastal hazards are:



The above figure shows the epicenter of Nov.28 1945 Makran Coast earthquake which generated Tsunami

- Badin
- Gwadar
- Karachi
- Lesbela
- Thatta

One of the ways to raise awareness about hazards and to test the systems in place for preparedness and response is to conduct a drill. One such drill was organized by the National Disaster Management Authority for district Gwadar.

¹ Pakistan Meteorological Department

² Pakistan Meteorological Department

Aim of the Evacuation Drill

The National Disaster Management Authority (NDMA) conducted a drill as a pilot in Gwadar. The aim of the drill was pilot the testing of the SOPs in a selected community which would provide an opportunity for the DDMA to understand the evacuation process and be able to conduct similar drills or actual evacuation in the district in future.

The Process

The National Disaster Management Authority organized a number of events in the first week of July, 2009 at different levels to raise awareness about the tsunami threat in District Gwadar, chosen due to its vulnerability to tsunami.



The planning for the evacuation drill was divided into three phases:

1. **Phase 1:** Pre-departure preparations
2. **Phase 2:** Capacity building of government officials in Gwadar and Pasni and community volunteers in Gwadar
3. **Phase 3:** Conduct a practical evacuation drill as a pilot in Gwadar

Phase 1: Pre-departure preparations

The process of planning for conducting the drill was initiated in April 2009 with the development and sharing of Standard Operating Procedures with DDMA. DDMA were asked to develop an evacuation plan for their respective districts.

Phase 2: Capacity Building

a. Capacity Building of Government Official

The process for strengthening tsunami emergency response included:

1. Organisation of workshops on strengthening end-to-end tsunami emergency response for key stakeholders.
2. Development of SOPs for tsunami emergency response and sharing with the relevant DDMA
3. Capacity building sessions for DDMA and key stakeholders in Gwadar and Pasni
4. Capacity building of community volunteers



Before the evacuation drill, meetings were held with key stakeholders to finalise the community where the drill will be conducted. This was followed by holding two separate workshops in Gwadar and Pasni. The workshops focused on:

- Disaster management system in Pakistan
- Role and responsibilities of DDMA
- Tsunami hazard: its warning signs and preparedness
- Evacuation planning: early warning, evacuation planning and logistics

b. Capacity Building of Community Volunteers

The capacity building of community volunteers was organized in Gwadar for selected volunteers who were responsible for planning and conducting the community level aspects of the drill.

Half a day session was held in the evening to facilitate the participation of the volunteers. Participation of female volunteers was also ensured.

The sessions with volunteers included:

- Briefing about the initiative
- Role of the volunteers
- Session about tsunami hazards and its relevance to Gwadar
- Evacuation Planning: its key elements, early warning mechanisms, finalise plans with the volunteers for the drill and identification of logistics arrangements needed at the safer location.



Phase 3: The Drill

The NDMA team and volunteers were at the drill site around 6:30 p.m. along with the representatives of the district administration which included the Naib Nazim, Assistant DCO and DPO.



The police and ambulance were also at site. The Naib Nazim made an announcement in the main market to inform the public about the drill and tsunami hazard. This was done so as to avoid panic among the public once the sirens were sounded to start the drill.

Once the volunteers and the team were in place, the announcements were made through mega phone at 7:30 pm. The police vans continuously sounded the siren. Initially,

people were reluctant to evacuate but later they started the evacuation. Some 500 people including men, women, and children evacuated and traveled a distance of about ½ Km to a pre designated safe location.



Given the cultural restrictions and the responsibilities of women at home (such as preparation of dinner) the participation of about 25 women in the drill was an achievement.



NDMA Team, Naib Nazim and the volunteers guided and walked with the community to the evacuation site. During the process the traffic police also mobilized to help manage the traffic so that the people could evacuate safely.

At the end of the drill, Senator Ismail Buledi addressed the participants and acknowledged the contribution of NDMA in raising awareness about tsunami.

Lessons Learnt & Challenges

This was the first time that such an exercise was undertaken by NDMA in collaboration with DDMA. The scale of the activity was deliberately kept small so as to test the pilot. The following are the lessons learnt and challenges identified that will help inform the key stakeholders in the coastal hazards prone districts to plan and conduct similar drills in the future.

- Insufficient time for the volunteers to raise awareness in the community about tsunami and the drill.
- Local knowledge about tsunami was non-existent both at DDMA and community level. However, as cyclone is a more recurring phenomenon, people are more aware of it.
- Drills need to be conducted at regular intervals and at a larger level.
- There should be regular drills in the schools as children are the most vulnerable segment of the society. They can carry the message to their homes and help in spreading the awareness to a larger community which is otherwise difficult to reach.
- It is important that DDMA takes the full ownership of the DRM process such as the drill, in order for it to be successful. Given that this was a pilot and DDMA would need to organize similar drills at the district level, their participation will ensure that the lessons learnt are incorporated in the future drills.
- Even though an announcement was made by the Naib Nazim in the market about the drill, none of the people present in the market took part in the drill that indicates need of large scale awareness campaign for the communities.
- Women councilor was instrumental in bringing women for the drill. In the future it would be good to involve more women councilors in such activities.
- There is a need for distributing information materials on tsunami in the school in the coastal areas.
- DDMA and Coast Guards requested NDMA for tsunami warning signs for posting at the appropriate places along the coastline. Once the number of sign posts is received, these sign boards will be provided to DDMA and Coast Guards.
- Local media needs to be educated so that they spread the message as social responsibility to the community at large
- DDMA needs to review the SOPs and to develop detailed evacuation plan.

Way Forward

- It is important that this activity is scaled up to the district level.
- DDMA to develop a detailed evacuation map for Gwadar city identifying safer locations for different communities keeping in view easy access and capacity of the safer location.
- Evacuation routes should be properly marked to guide the evacuees to the safer locations.
- DDMA Gwadar to conduct similar drill at Pasni
- Make drills a regular exercise
- NDMA to replicate these activities in other coastal districts with the assistance of provincial and local authorities during current year.