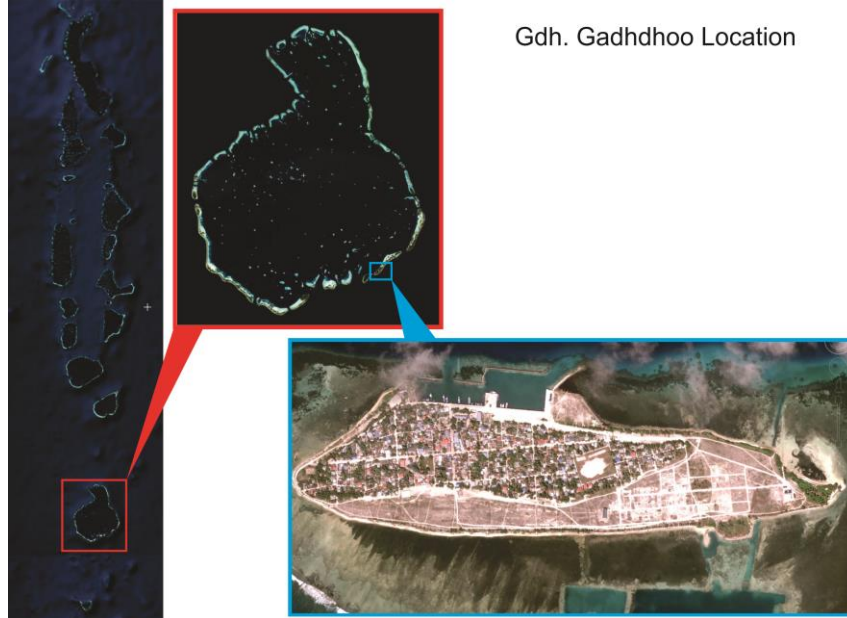


Introduction

This report is based on the erosion survey trip to three islands in GDh Atoll, which are facing severe erosion. This is the report of the erosion survey done in GDh. Gadhdhoo.

Background



Gadhdhoo is an inhabited island located at the south east edge of Huvadhu Atoll with a land area of 25.4 Hectares. The Population of the island is 1489 (Census 2014-Ministry of Planning and National Development).

Purpose of the Survey

The Main purpose of the trip was to monitor and survey the eroding areas of the island. The areas that are prone to flooding was also monitored and recorded. The survey also includes measuring the distance from the shoreline to the nearest house in the areas facing erosion.

Participants

The trip was requested and organized by the Ministry of Environment and Energy, and the survey was carried out from 28th November 2015 to 30 November 2015, by the below named staff from Environmental Protection Agency (EPA):

1. Mohamed Rameez- Senior Research Officer (EPA)
2. Nashwa Ahmed Manik – Environment Analyst (EPA)
3. Luayyu Adam – Sanitary Assistant (EPA)

Methodology

The Shoreline and vegetation line was plotted using GPS to assess the changes in the shoreline and photographs were taken for areas with high level of erosion. The distance from households were measured using measuring tape and the location was marked on the GPS for households closest to the eroding areas. The major flooding areas due to Rain and Sea Swells were identified on map with consultation from the island council and community.

Findings

- Severe erosion was observed at east (estimated at 277 m) side of the Harbour where during the high tide water reaches upto the vegetation line.(Figure 1).Although protected by a rocky beach the southern side of the area faces erosion and this area is closest to the households. (estimated at 577 m).



- The western side of the old harbor was observed to be eroded even though this area protected by a rocky shore.
- An existing artificial sand bund wall was observed around the island starting from north east side of the island and ending at the north west side with protection from a belt of rocky shore. Although erosion scarps were observed along the bund due to action of waves at high tide.



- Three areas were identified as flood prone areas in the island (Annex: Figure 1). While Area 3 was identified as flood prone area during sea swells, area 1 and 2 were identified as flood prone areas due to storm water runoff. The level of water during floods range upto 2 feet at these areas and according to the council they pump out the water with the help of MNDF. Seasonally Sea swells come from the southern side of the island.(Figure 1)
 - Area 1-Northern side of the island
 - Area 2- Middle of the island
 - Area 3- South of the island

- Household closest to the area with highest erosion was observed at the southern side of the island. Along this area two households were observed to be close to the erosion areas.

#	Name	Distance from high tide line(m)
1	H1	6
2	H2	7.30

Table 1: The Distance between the shoreline and the nearest household

Other Findings

- The current waste dump is located at the eastern side of the island where a land had been reclaimed for the purpose. The whole area was littered with waste, most of which includes plastic bottles and tin cans.



Waste Littered eastern side adjacent to waste dump

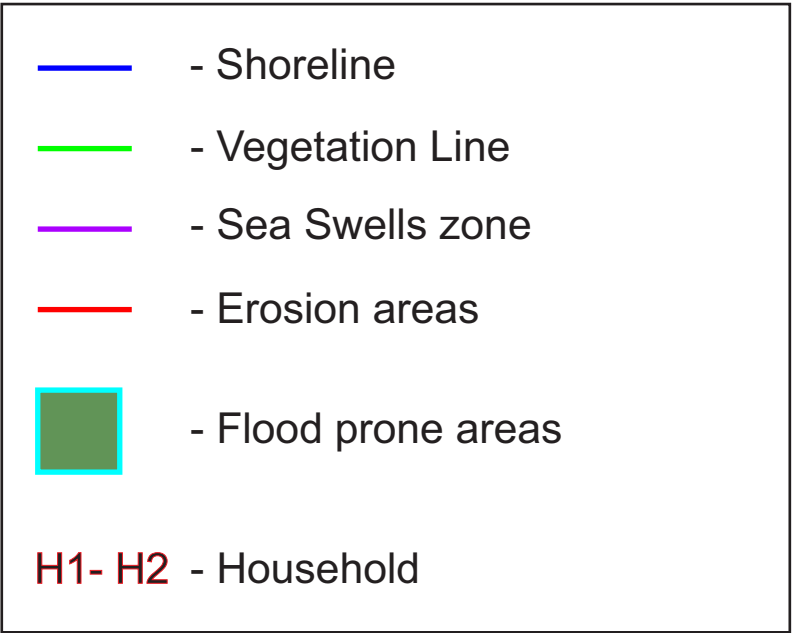
Waste dump

- According to the island council the expatriates working in the island sand mines and catch seabirds nesting in the adjacent island of Gan.

Conclusion

The Southern side of the Harbor which is closest to the households experiences severe erosion. Three areas were identified as flood prone areas. The Northern side and the center of the island was identified to be flooding during storm run-off, whereas the Southern flood prone area identified to be flooding during the emergence sea swells.

Figure 1





West of New Harbor



West of New Harbor



West of New Harbor



East of Old harbor



South of island



South west of island