

La Gemma Beach Erosion

Zanzibar July 2009

Brief field notes, Lorna Slade (for location see map associated with photograph 4 in accompanying album)

La Gemma lies at the northern tip of the island of Unguja, Zanzibar on a west-facing beach some 40km from the mainland. The hotel is owned by an Italian company known as Renco. It is 4 years old (?) but has suffered severe erosion in the last couple of years mostly at the time of the 'kusi' tradewinds in July/August. Severe erosion of this kind has not been known for the past 10 years according to local dive operator but its occurrence as part of a longer term cycle is not known. There was insufficient time to interview local fishers.

Points for note:

- ?? Hotel establishments in Zanzibar are subject to a 30m(?) setback line for any permanent structures. The current hotel swimming pool appears to have been built within this setback line
- ?? The effect of the offshore restaurant and pier is not known on local currents but may well have exacerbated natural erosion forces
- ?? There is a 4m tidal range
- ?? Shore profile is gradual slope to about the edge of the restaurant (see photographs, some 100m offshore) at a depth of about 3-4m, it then drops off sharply to about 15-20m and sandy bottom yields to patch coral. Sandy bottom nearshore has patchy seagrass beds.
- ?? Hotel managers are desperate for action as the erosion will affect their tourism revenue—they would like sand back on the beach for this season! They have bought a dredge and have been seeking permission to use it.
- ?? Local dive operator has carried out depth profile for the area recently.
- ?? This site has a high political profile and will pave the way for any further artificial reef structures elsewhere in Zanzibar if not East African coast.
- ?? According to local dive operator the prevailing current is to the north.

Notes on local weather patterns

During the months of Nov-March the prevailing trade wind is the NE monsoon wind. The NE monsoon wind is usually steady and light, about 5m/sec. The Kiswahili name for this wind and the season is 'kaskazi'. It is usually associated with short rainy periods and the true rainy season begins after the NE monsoon, from March to June. From June to September (winter months) the region experiences a complete reversal in wind direction, a feature unique to the Indian Ocean, and the SE monsoon wind prevails (called the Kusi in Kiswahili). This is a stronger wind, reaching an average velocity of 9m/second (force 8), especially in the southern parts of the region.