

### Site inspection in preparation of the tide gauge installation in Ormara, PK

On Monday, May 11 2009, an UNESCO/IOC mission team, Arsalan Syed (UNESCO ISB), Lt Cdr Taufeeque (Pakistan Hydrographic Department) and Ulrich Wolf (UNESCO/IOC) conducted a site inspection at Ormara Port, with the purpose to identify the best location for a possible tide gauge at this Navy installation. The team was assisted by local Navy officers who including the Commander of Ormara Port, Capt. Adnan Baluch, proved to be very supportive.

Ormara, 350km NW of Karachi on the Balochistan coastline, is a fishermen's settlement with a moderate climate (max. air temperature 42 deg C). The Navy compound occupies the northward looking side of the hammerhead while the harbour is situated at its eastern end (see fig. 1).

The whole Navy facility in Ormara has quite recently been established and is in very good shape, while more construction work is still going on. The whole harbour is dredged to a depth of 10m below chart zero. The power supply of the compound and the harbour is ensured by independent power circuits (44kW and a 23kW) powered by diesel engines.

The team has been showed around and could locate 4 possible locations for the planned tide gauge installation, which are not used as vessel berths. Due to the different conditions the team agreed on a ranking of these sites while the agreed location is still subject to security clearance by national authorities/the Navy.



Figure 1: Ormara hammerhead (from Google)

#### Option 1: NE-end of the northern jetty

This site (see fig 2) has been rated as the best option as this would ensure the possibility to make use of a nearby concrete hut (2,5m x 5m), actually under construction, which is meant to provide cover for a sea-water pump installation, only to be used in case of a fire. Additionally this site is nearest to the port entrance ensuring earliest detection of long waves (ca. 1min earlier compared to option 4).



Figure 2: Ormara Navy Port (from Google)

<sup>1</sup> Complete Report available in attached CDROM.



All pictures form the NW-edge of Northern Jetty

### **Option 2 and 3: NE-ends of both jetties**

Both jetties have concrete buildings near their NW ends which could be used for the electronic housing of the tide gauge. Nevertheless the distance to the instruments on the jetty would require 30-50m cables while the Kalesto instrument on the pier would be somewhat endangered to be damaged by possible interaction with Navy cars and lorries passing by during vessel bunkering, nevertheless feasible options.



### **Option 4: East end of the southward looking pier**

This location has been chosen as an option as at this end no vessels are allowed to berth and thus is somewhat protected from the standard harbour operations. Nevertheless the option requires either to build a small concrete structure or placing an air-conditioned container for the tide gauge housing. As this would require some extra funding and time this site was rated to be in forth priority.

