

# NATIONAL REPORT- PAKISTAN

15 NIOHC MEETING

Muscat, OMAN

16-18 Mar 15

# SCHEME OF PRESENTATION

- Introduction
- Hydrographic surveys
- Charts, Publications and updates
- Navarea IX warnings
- Capacity Building
- Oceanographic Activities
- Other Activities

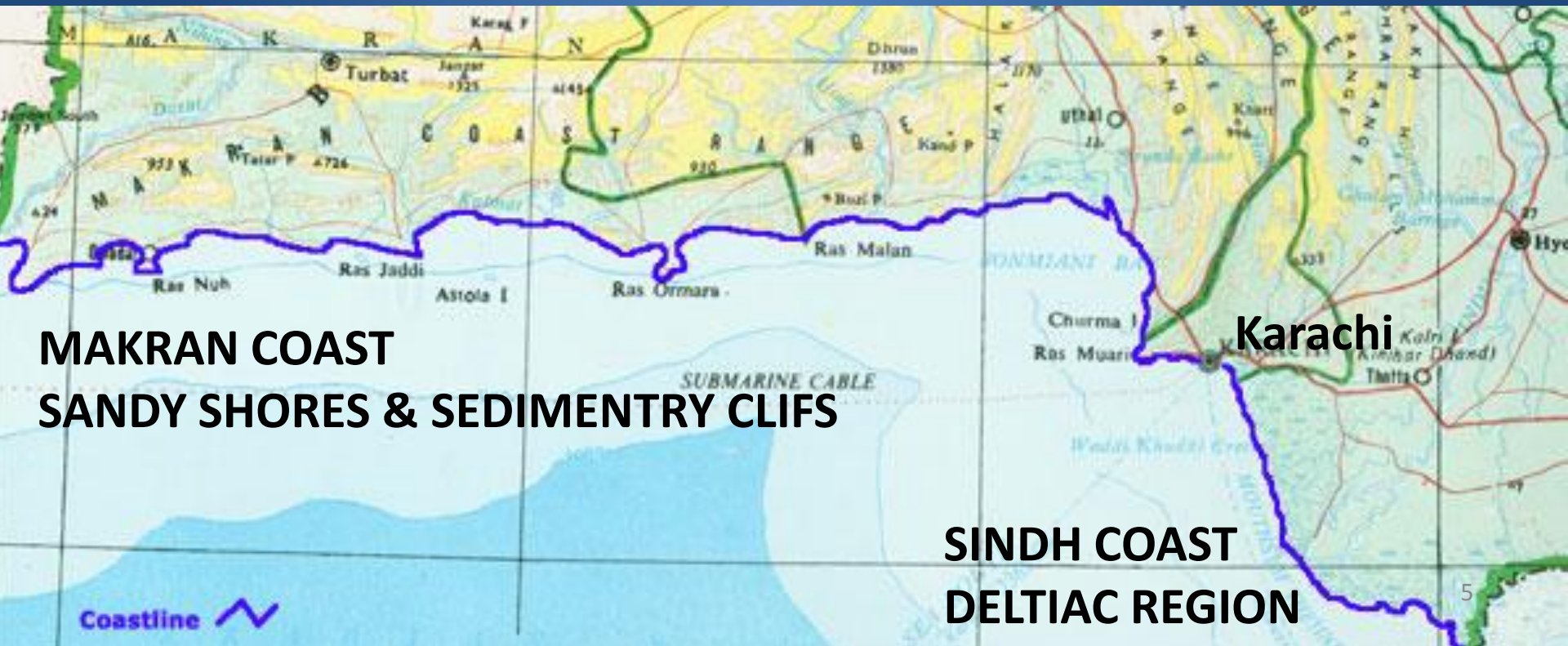
# PNHD

- Pakistan Navy Hydrographic Department (PNHD) was established in 1949
- Pakistan became member of IHO in 1957
- Responsible for:
  - Hydrographic Surveys of Pakistani waters
  - Nautical charts and publications
- PNHD has published series of Paper charts and ENC's

# HYDROGRAPHIC SURVEYS

# PAKISTAN COAST

- 990 KM of Coastline
- Divided in 02 parts



**MAKRAN COAST**  
**SANDY SHORES & SEDIMENTARY CLIFS**

**SINDH COAST**  
**DELTIAIC REGION**

# COASTLINE



**MAKRAN COAST  
SANDY SHORES & SEDIMENTARY CLIFFS**



**SINDH COAST - DELTIAC REGION**

# COVERAGE OF NEW SURVEY

- Continuous effort have been made to survey critical areas for safe navigation within Pakistani waters
- 90% coverage of Area A1 (i.e Coast to 200m depth) has been completed
- Coverage Area A2 (i.e >200m depth) is progressing at moderate pace

# NEW TECHNOLOGIES EQUIPMENT

- MBES
- Deep sea echo sounder
- Digital Side Scan Sonar
- RTK and Satellite based GPS
- CTD & SV Probe
- Moving Ship Velocity Profiler
- Current Meters
- Automatic Tide Gauges



**SURVEY VESSEL BEHR PAIMA**



# CHARTS AND UPDATES

# ELECTRONIC NAVIGATION CHARTS

- ENC division established in 2005
- ENCs of all major ports Karachi Harbour, Port Qasim and Gwadar Deep Water Port available
- To facilitate mariners Coastal charts covering major shipping routes converted to ENCs
- Additional ENC are also being produced

# ELECTRONIC NAVIGATION CHARTS

- After validation distribution is done through IC-ENC
- PNHD is neither producing nor has plan for RNCs

# INT / NATIONAL CHARTS

- Published 41 nautical charts of different scales covering entire coast and offshore water of Pakistan
- Charts are being kept upto date
- Among these 8 chart form part of INT Area “I” & “J”

# PUBLICATIONS

- Weekly Notices to Mariners (NTMs)
- Annual Summary of Pakistan NTMs
- Annual Pakistan Tide Table
- Annual Sun & Moon Rise / Set Table

# NAVAREA IX WARNINGS

# MSI IN NAVARE-IX

- Pakistan being Coordinator is responsible for transmission of MSIs in NAVAREA IX
  - NAVAREA IX Warnings are transmitted through International Safety Net
  - Coastal Warnings transmitted through NAVTEX (Presently Non-ops) as alternate important coastal warnings are routed on Safety Net

# NAVAREA IX WARNINGS

- NAVAREA IX broadcast made:
  - Daily at 0300 and 1500 UTC through INMARSAT
  - Broadcast for urgent navigational warnings is done at any time
  - A numerical list of enforced NAVAREA IX warnings is broadcasted each Saturday
  - All NAVAREA IX warnings issued during a week is also included in the weekly edition of Pakistan NTMs



# COASTAL WARNINGS

- Coastal warnings are also disseminated through SafetyNet
- MSI broadcast is monitored through land terminal to ensure integrity of the information

# PNHD WEBSITE

www.paknavy.gov.pk/hydro/index.asp

## Hydrographic Department

Hydrography | Cartography | Navaera IX | Metarea | Chart Depot | ENC Division | Training | General

# Pakistan Navy

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[hydropk@paknavy.gov.pk](mailto:hydropk@paknavy.gov.pk)

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# PROBLEM ENCOUNTERED

- Navigation hazard are effectively communicated through fax, email by relevant states
- Few countries are not maintaining communication through email
- Other means like fax and postal cause unnecessary delays

# NAVAREA IX RESPONSE

| COUNTRY      | SOURCE OF INFORMATION |
|--------------|-----------------------|
| BAHRAIN      | E-MAIL & FAX          |
| IRAN         | E-MAIL & FAX          |
| OMAN         | E-MAIL & FAX          |
| SAUDI ARABIA | E-MAIL, FAX           |
| EGYPT        | POSTAL MAIL ONLY      |
| MISC.        | E-MAIL & FAX          |

# HYDROGRAPHIC SURVEYING & NAUTICAL CHARTING WORLD WIDE (S-55)

- PNHD regularly assesses status of hydrographic surveying and nautical charting of all navigable waters within the limits of national jurisdiction and the EEZ
- Based on this assessment, S-55 is kept updated. Last update done in Jan 15

# CAPACITY BUILDING

# OWN CAPACITY BUILDING

- PNHD pays special emphasis to capacity building to maintain quality of hydrographic product as per international standards
  - Cat B course from Japan, Australia and USA
  - Cat A from UK
  - Masters in oceanography from USA are availed

# CAPACITY BUILDING

- PNHD can provide assistance to regional countries in following areas:
  - Hydrographic surveys
  - Geodetic and bathymetric data processing / production of charts
  - Basic Survey Recorder / Technician Course
  - Assistance in ENC production line procedures and quality management system
  - Handling of MSIs
  - Cat B Hydrographic Course
  - Setting up of Hydrographic school



# HYDROGRAPHIC SCHOOL

- Hydrographic school is contributing to train regional countries survey officers and technicians
- During last 7 years 21 foreign participants have qualified various courses from the school

# OCEANOGRAPHIC ACTIVITIES

- Oceanographic activities in Pakistan are carried out in collaboration with National Institute of Oceanography (NIO) and marine universities
- Oceanographic cruises are arranged onboard SV BEHR PAIMA

# TIDE NETWORK

- Three tide gauges i.e. at Karachi, Ormara and Gwadar are working and data is being transmitted
- The data is being used for sea level measurements, tidal predictions and tsunami early warning
- Installation of one more tide gauge is planned at Keti Bandar (East Coast)

# TIDE NETWORK

SEA LEVEL STATION M x SEA LEVEL STATION M x SEA LEVEL STATION M x SEA LEVEL STATION M x Admiralty Digital Catal x

www.ioc-sealevelmonitoring.org/station.php?code=gwda

[previous station] Station Gwadar at GMT [next station]

[more details] [GTS message] [show data] [show on map] [monitor]

| Station metadata |  |
|------------------|--|
| Code             | gwda   |
| Country          | Pakistan   |
| Location         | Gwadar   |
| Status           | Operational  |
| Local Contact    | Gwadar Port Authority and Hydrographic Department (Pakistan) |
| Other Contact    | Pakistan Navy Hydrographic Department ( Pakistan)            |
| GLOSS ID         | 295 [goto handbook]  |
| QC data          | n/a  |
| Latitude         | 25.133   |
| Longitude        | 62.033   |
| Connection       | GTS message  |
| GTS message type | SXXX33   |

| Sensor 1            |     |
|---------------------|-----|
| Type of sensor      | rad |
| Sampling rate (min) | 1   |

| Sensor 2            |     |
|---------------------|-----|
| Type of sensor      | bat |
| Sampling rate (min) | 15  |

### Sealevel at Gwadar station - (5.3705 m)

From 2015-02-08 01:55 to 2015-02-08 13:55 © IOC-VLIZ

| Period   | Signals   | Data   |
|--|---|--|
| <input checked="" type="radio"/> 12h<br><input type="radio"/> day<br><input type="radio"/> 7 days<br><input type="radio"/> 30 days | <input checked="" type="checkbox"/> rad<br><input type="checkbox"/> Remove outliers<br><input type="checkbox"/> Remove spikes | <input checked="" type="radio"/> Relative levels= signal - average over selected period<br><input type="radio"/> Absolute levels= as received<br><input type="radio"/> Offset signals= relative signals + offset<br><input type="radio"/> Show battery voltage |

Tip: use left icons to zoom & scroll

Windows taskbar: 6:57 PM 2/8/2015

# PARTICIPATION IN HYDROGRAPHIC ACTIVITIES

- Working Group on Special Publication (S-23)
- Chart Standardization and Paper Chart Working Group (CSPCWG)

# PARTICIPATION IN HYDROGRAPHIC ACTIVITIES

- Joint survey of Sir Creek with India in 2007
- Joint international Hydrographic survey around Bird and Denis Islands in Seychelles Waters from 19 Jan to 03 Feb 09

# METROLOGICAL DATA COLLECTION

- Meteorological data from various sources including automatic weather station installed at the coast is acquired and maintained at met data bank of Pakistan coast and North Arabian Sea
- Close liaison is maintained with Pakistan Met Department to monitor the weather changes

# CONCLUSION

- PN Hydrographic Department is carrying out surveys of waters under national jurisdiction as per IHO standards
- PNHD is actively participating in all national, regional and international maritime activities / forums
- PNHD has completed the surveys of entire coast of Pakistan and has published relevant charts. At present, resurveys of critical areas and new surveys including deep sea surveys are being undertaken



# CONCLUSION

- As a coordinator of NAVAREA IX, responsibility for promulgation of navigational warnings is being effectively fulfilled
- ENC cells concerning major ports and small scale ENCs adequately covering shipping route of Arabian Sea have been made available to commercial shipping

**THANK YOU**

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