



NATIONAL REPORT OF KINGDOM OF SAUDI ARABIA

20th North Indian Ocean Hydrographic Commission Meeting

13-15 July 2021

Video Teleconference Online

Prepared by Hydrography Directorate, General Authority for Survey and Geospatial Information
Kingdom of Saudi Arabia
www.gasgi.gov.sa

NATIONAL REPORT OF KINGDOM OF SAUDI ARABIA

1.

Introduction

General Authority for Survey and Geospatial Information (GASGI) (formerly General Commission for Survey) was established in the Kingdom of Saudi Arabia on 13 February 2006 through a resolution of the Saudi Cabinet. Hydrography under the GASGI has been formulated for implementation of phased funding of capital assets, training of Saudi personnel and capacity building. Since its establishment, GASGI has surveyed about 200,000 km² in Red Sea, Gulf of Aqaba and the Arabian Gulf together and produced ENC, PNC and CZMCs¹ at various scales. The Hydrographic Department is well equipped with modern survey equipment and platforms to carry out tasks in both deep and coastal waters.

Saudi Arabia is surrounded on western and eastern side by Red Sea, Gulf of Aqaba and Arabian Gulf respectively with coastline stretching over 4,673 km. Presently the charts being used are based on old data thus the GASGI has been undertaking hydrographic surveys to produce updated charts. The Kingdom's waters in the Red Sea and Gulf of Aqaba have been fully surveyed and charted this year (2021) whereas hydrographic survey and charting activities are in progress in the Arabian Gulf to cover the remaining Saudi Waters.



2.

Hydrographic Surveys

Modern hydrographic surveys have been undertaken from 2010 onwards and the plan is to complete survey of the entire Saudi Marine Areas, as mentioned above, by 2027. All surveys are being completed with the latest technology available including bathymetric – topographic LiDAR, Multibeam Echosounders, Side Scan Sonars, Sub-bottom Profilers, precise Satellite Position Fixing Systems, Inertial Navigation Systems, ADCPs, Tide Gauges and allied oceanographic equipment.

Hydrographic Survey Vessel (HSV) 'Sultan' is the 43.7m primary hydrographic survey platform with two 8.4m hydrographic survey launches onboard. These three platforms equipped with an extensive suite of hydrographic equipment, sensors and related systems.

The figure on page 5 depicts the Red Sea and Gulf of Aqaba.

¹ Coastal Zone Management Charts

3. New Charts & Updates

In the Red Sea and Gulf of Aqaba the GASGI designed chart scheme consists of 86 charts to fulfil different navigation purposes namely General Navigation, coastal navigation, approaches to ports and port entry. This year 2021, GASGI completed production of these planned 86 PNC & ENC charts. Details of Produced charts are given at table below and figure on page 6.

Red Sea & Gulf of Aqaba PNC & ENC				
Navigational Purpose	Scale	Planned PNC & ENC	Produced PNC	Produced ENC
General	1:500,000	3	3	3
Coastal	1:150,000	17	17	17
Approach	1:50,000	58	58	58
Harbor	(1:10,000 ,1:12,500 ,1:15,000)	8 (1,1,6)	8 (1,1,6)	8 (1,1,6)
Total		86	86	86

An independent QC/QA, encryption and distribution is being arranged to be handled by an International Authority (IC-ENC).

4. New Publications/Updates

- National Tide Table of 2021 was published utilizing the validated data from GASGI's National Tide Gauge Network.
- National Tidal Current Table of 2021 was published utilizing ADCP data.

These publications are supplied as soft and hard copies to Port Authorities and Government Agencies, and are available for sale on GASGI's web-portal.

5. MSI

The National Coordinator of the Kingdom of Saudi Arabia is the Ministry of Transport/ Saudi Port Authority (MAWANI). GASGI updates charts through liaison with MAWANI and NAVAREA coordinator using available inputs. The Chart Correction actions and validation for GASGI's produced ENCs and PNCs remains the full responsibility of GASGI.

6. C-55

The status of the surveys of the Red Sea and Gulf of Aqaba is as follows:

A. Hydrographic Surveying

Status of hydrographic survey of all navigable waters, including internal waters, out to the limits of the EEZ:

A = percentage which is adequately surveyed.

B = percentage which requires re-survey at larger scale or to modern standards.

C = percentage which has never been systematically surveyed.

	A	B	C
Depths < 200m	100%	0%	0%
Depths > 200m	100%	0%	0%

(GASGI 2010 – 2021 data)

B. Nautical Charting

Status of nautical charting within the limits of the EEZ.

A = percentage covered by INT series, or a paper chart series* meeting the standards in S-4.

B = percentage covered by Raster Navigational Charts (RNCs) meeting the standards in S-61.

C = percentage covered by ENC's meeting the standards in S-57.

Purpose/Scale	A	B	C
Offshore passage/Small	100%	0	100%
Landfall and Coastal passage/Medium	100%	0	100%
Approaches and Ports/Large	100%	0	100%
Percentage of Group A showing depths in metres	100%		
Percentage of Group A referenced to a satellite datum	100%		

The conversion of standalone products into the database driven system is in progress and GASGI will update the status to IHO after completing the conversion.

** Column A refers to PNCs. INT Charts in planning stage.*

7. Capacity Building (CB)

CB of personnel, through in-house accredited courses, has been nil for the period since the present numbers of trained staff are sufficient for both the activities in-hand and those scheduled for the next couple of years. However, in-house training on new techniques, technologies and software is continuously being undertaken as part of on the job training. In addition, training courses by third parties have been identified and the personnel are expected to be trained in these courses over the coming year.

8. Oceanographic Activities

GASGI collects tides, meteorology and other oceanographic data from various sources. Most of these data are collected while undertaking hydrographic and oceanographic survey projects while tides and meteorology are collected from its national tide gauge network (NTGN). The NTGN consists of seven (7) tide gauge stations in the Red Sea and Gulf of Aqaba, and five (5) tide gauge stations in the Arabian Gulf. The real-time observations of tides and meteorology from this network are used for safety of navigation and sea level studies.

GASGI has been publishing Saudi Tide Tables since 2016, and Saudi Tidal Current Tables since 2020 for safety of navigation in the Saudi Coastal Waters. The latest publication of Saudi Tide and Tidal Currents Tables (2021) are available for purchase. GASGI also supports collaboration projects for collecting oceanography data with other agencies in the Kingdom.

9. Other Activities

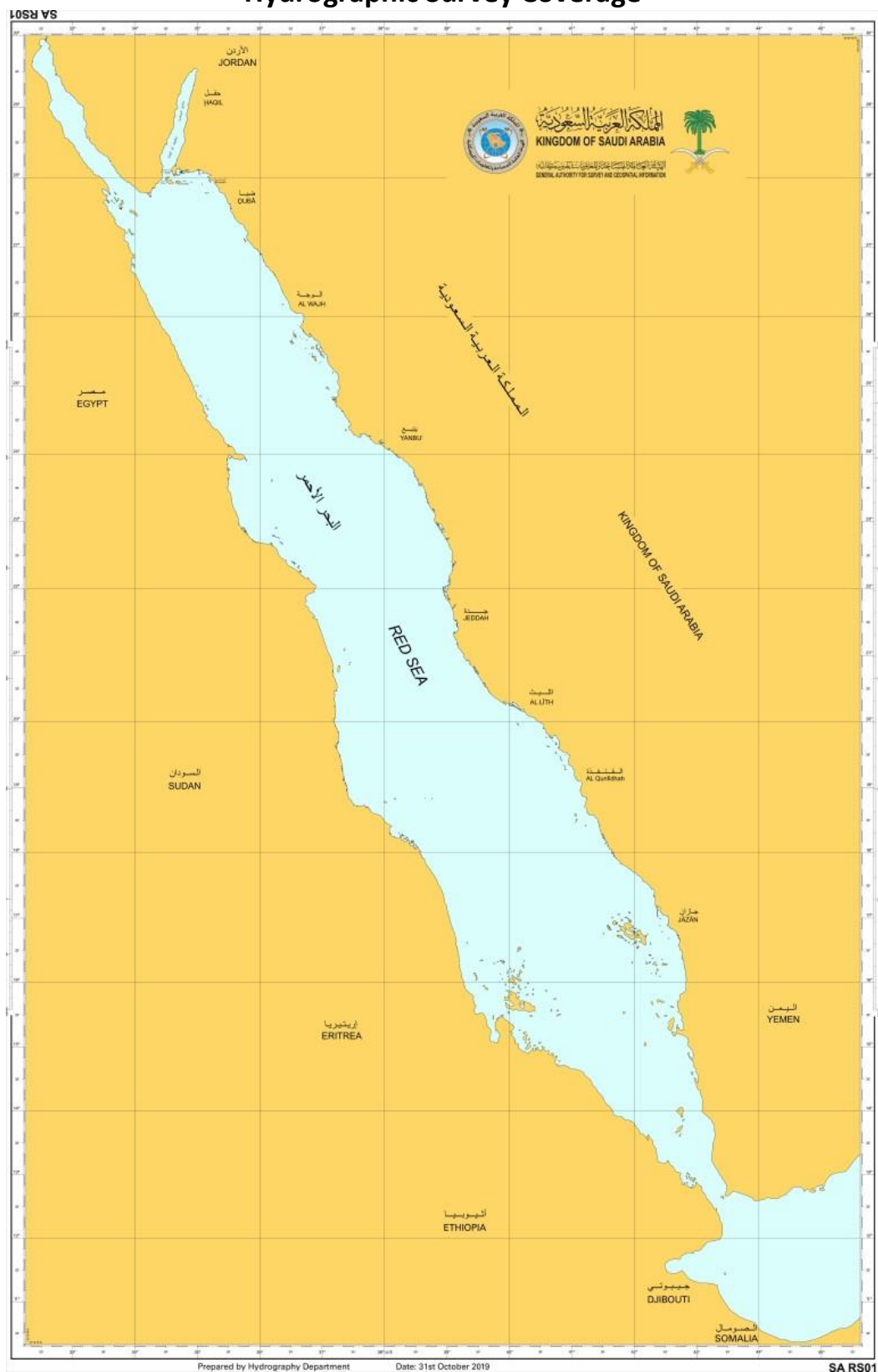
GASGI is also preparing customized products as per the requirement of its stake holders and the Hydrographers and Cartographers are actively participating in the national exhibitions and seminars. GASGI is working on integrating the Hydrographic Data Management (HDM) project with the Geographical Information Centre (GIC) to make the products available online as part of self-sustainability.

10. Conclusion

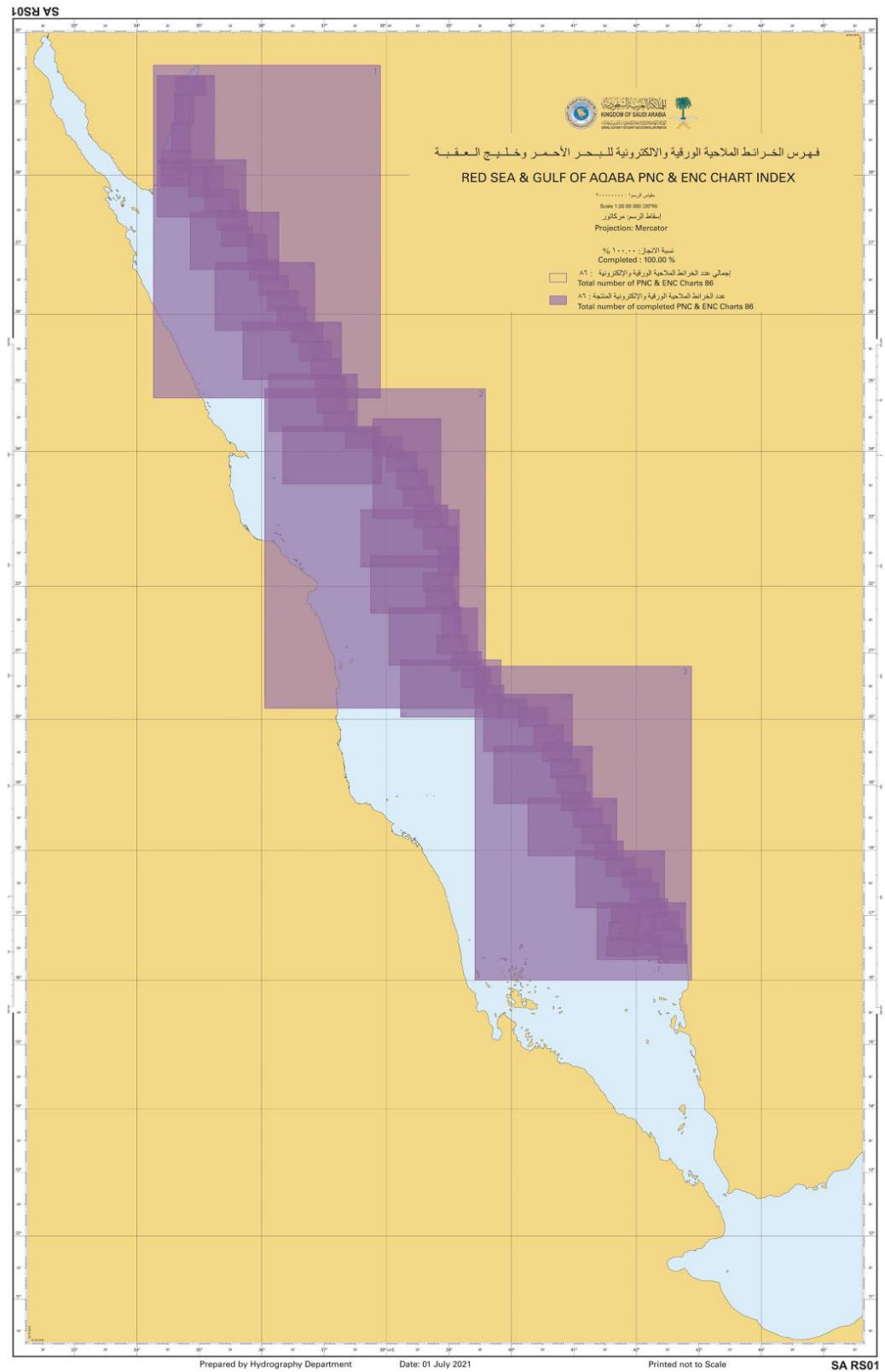
GASGI continues to develop and gain experience in hydrographic activities by adapting state of the art technologies for hydrographic surveying and nautical publication in the Kingdom and GASGI is committed to assure safety of navigation under IHO/IMO regulations. To date GASGI has completed the series of nautical charts covering the entire KSA waters in the Red Sea and Gulf of Aqaba and plans and projects are underway to complete survey and charting in the Arabian Gulf.

In step with the Nation's "Vision 2030" Program, GASGI is focused on participating fully with the associated objectives and goals outlined in order to present world-class nautical charting and associated products to benefit economical maritime services, trade, tourism, coastal zone management and the blue water economy.

Overview of the Red Sea and Gulf of Aqaba Hydrographic Survey Coverage



Overview of the Red Sea and Gulf of Aqaba ENC & PNC Chart Index



[illegible]