

NATIONAL REPORT OF EGYPT

THE 18TH SESSION OF THE IOC GROUP OF EXPERTS

THE GLOBAL SEA LEVEL OBSERVING SYSTEM (GLOSS)

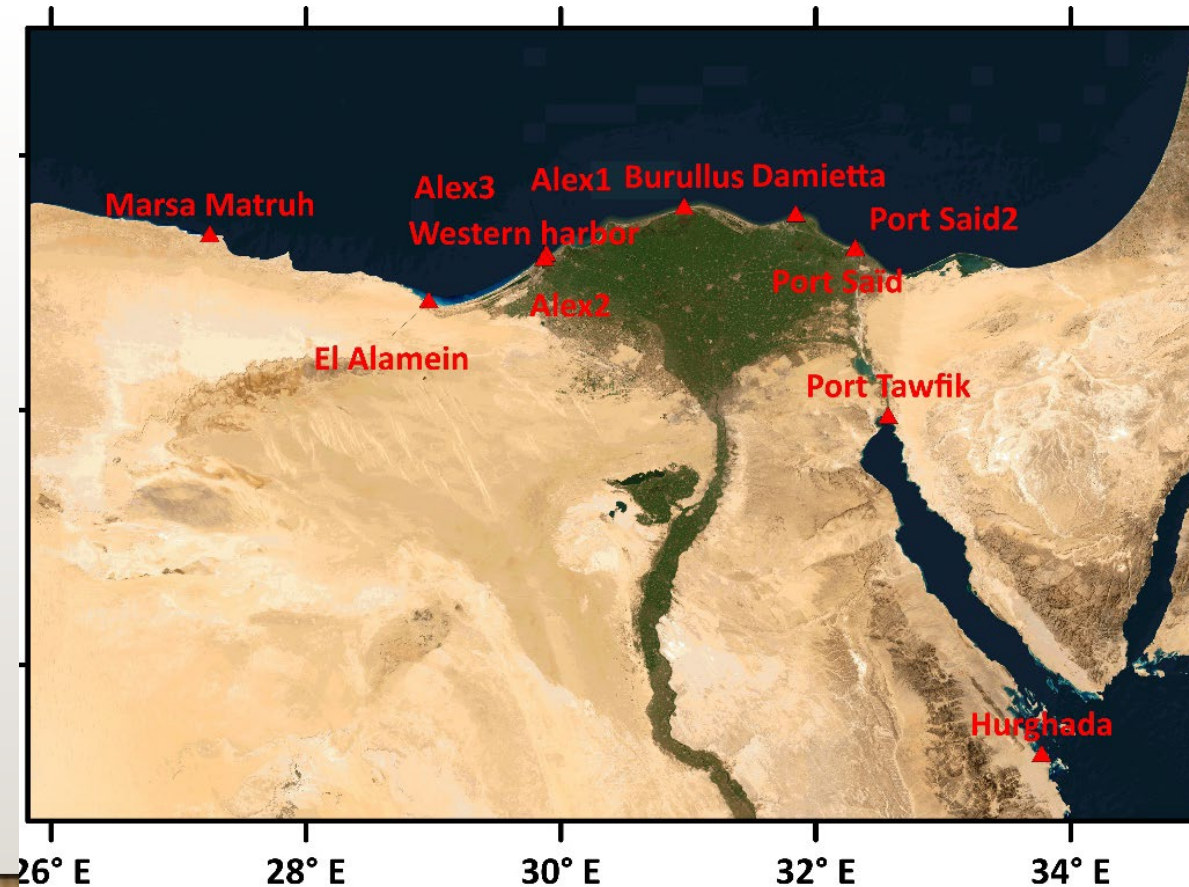


PROF. AMR ZAKARIA



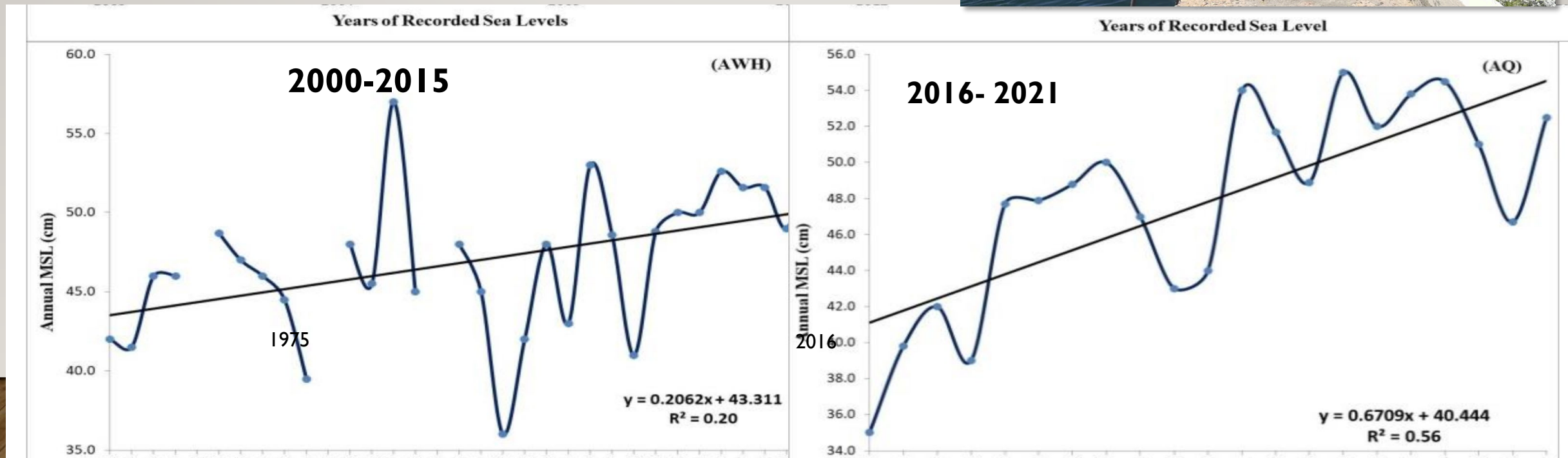
THE EGYPTIAN SEA LEVEL NETWORK

- Tide stations in Egypt are scattered around the country.
- They are operated by several national and local governmental organizations, including National Institute of Oceanography and Fisheries (NIOF), Suez Canal Authority and several Harbors and ports.
- Some of these stations are sending the data online to serves and for the older ones, their data are continuously being collected. And most of the data is being stored by NIOF.



ADVERSE IMPACTS OF CLIMATE CHANGE ON EGYPT

- **Sea level Rise:** in the North Coast and the Delta.
- The Egyptian Mediterranean coast stretches over about 1200 km from Sallum in the west to Rafah in the east



Agricultural productivity

- **Decrease** in Crop Productivity **increas** of population .
- **Desertification:** Including North West coastal areas and Northern areas of Sinai, the fertile land of Upper Egypt, the Delta, Oases of the Western Desert and Southern Remote Desert Areas.

1 m

Population: 6 100 000
Cropland (Km²): 4 500



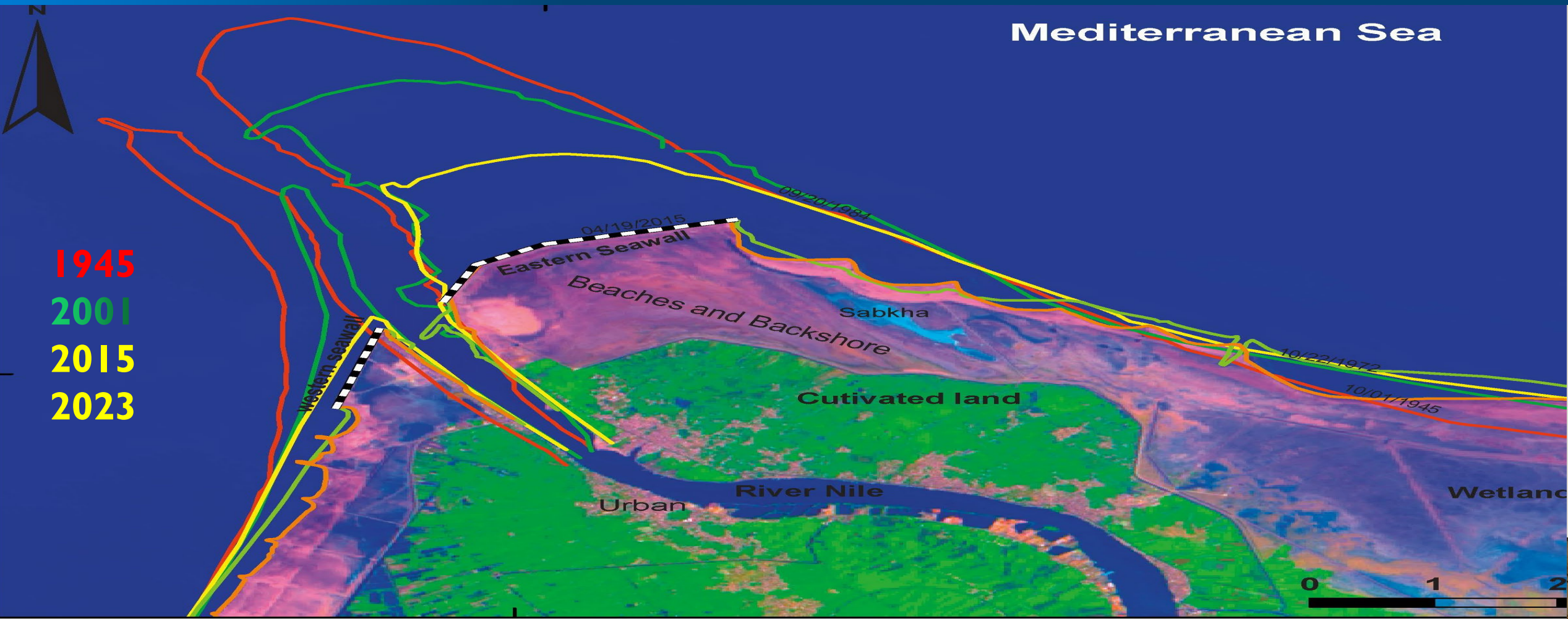
0.5 m sea level rise

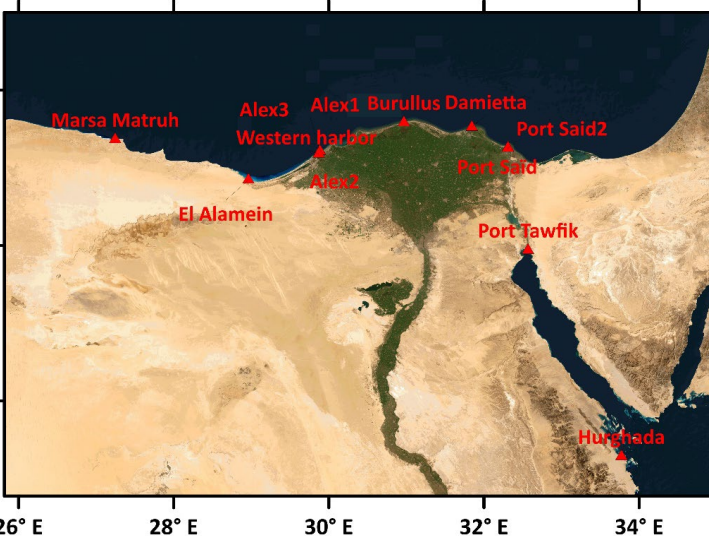
Population: 3 800 000
Cropland (Km²): 1 800



Shoreline Mapping and Erosion Assessment

Satellite imagery can be used to map and monitor changes in coastline positions over time. By comparing historical satellite images with recent ones, scientists can assess the rates and patterns of shoreline erosion or accretion. This information is vital for coastal management and planning, especially in areas vulnerable to erosion and sea-level rise.





MEDITERRANEAN SEA LEVEL NETWORK

Station	Longitude	Latitude	Starting date	Local Operator	Sensor Type
Alex1	29.885	31.212	2009	NIOF - GLOSS	Radar
Alex2	29.885	31.212	2018	NIOF - IDSL	Radar
Alex3	29.885	31.212	2023	NIOF - ATGs	Radar
Port Said	32.309	31.258	Near Future	NIOF - ATGs	Radar
Marsa Matruh	27.246	31.362	Near Future	NIOF - ATGs	Radar
Hurghada	29.871	31.176	Near Future	NIOF - ATGs	Radar
Western harbor	32.307	31.250	1943	Western harbor	hydraulic pressure
Port Said2	32.568	29.939	1923	Suez Canal Authority	hydraulic pressure
Port Tawfik	28.964	30.842	1920	Port Tawfik - GLOSS	Radar
El Alamein	33.773	27.284	2025	ECCADP	hydraulic pressure
Damietta	31.843	31.522	2024	ECCADP	Radar
Burullus	30.967	31.581	2024	ECCADP	Radar

CASE EXPERIENCE: STATIONS AT ALEXANDRIA (ALEX1,2 &3)

- Alexandria station (NIOF – Branch) has a long history of tide gauges; Alex1 (GLOSS-349) started 2009, Alex2 (IDSL-23) started 2018 and finally Alex3 (ATGs) which started 2023.
- We experienced several cases at these stations:
 - A unit from a device going faulty. (due to environmental difficulties or expired unit)
 - A full device damage.
- So, it was a very good decision to acquire a backup system in many events.

