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SEA LEVEL MEASUREMENT IN GUINEA

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Status of Guinea tide gauges network.

Since 1950, sea level observations were collected along Guinea coasts which is 300 km long. The tide amplitude varies from 0.65 to 5 m along this coast. This amplitude reaches 7 m in the estuaries. The main observations sites were: Benty, Conakry Port, Dubreka, Kamsar, Port Boffa and Tamara (Loos Island). The tide gauges located at Benty and Tamara have been abandoned for lack of local technicians for the maintenance. Those of Rogbane and Port Conakry were also abandoned for the same problem. These stations were initially maintained by the French Institute of Research and Development (IRD). At present time, only the tide gauge of Kamsar is operational. All these tide gauges are A. OTT types. Most of them have been installed in 1977. The tide prediction for Conakry port is provided by SHOM. Note that this station is a GLOSS Core Network station. The tide gauge installed at Conakry Port ($9^{\circ}31'N - 13^{\circ}43'W$) was provided by GLOSS in 1977.

The only station for which there is data is Conakry (1978-1994). These data are on paper form.

The data acquired by the tide gauges network are computed to:

- Analyze the risk of the marine invasion variation,
- Participate to the GLOSS network,
- Predict the propagation of the tides for agriculture management.

Stations characteristics

Conakry

The chart datum is 2.044 m below IGN datum (local datum); 31.676 m above GRS80 (June 2003).

The numerical datasets available at SHOM are from: 04/01/1956 – 07/06/1956.

There are not many years of measurements available.

Here is a summary of measures of sea level made in Conakry:

- Marigrams (paper rolls) 1900 and 1938
- Diurnal records (tables of water level) every 1 / 4 hour in 1937, 1938, 1950
- Diurnal records (tables of water level) every 1 / 4 hour in 1947, 1948, 1956, 1957, 1958, 1959.

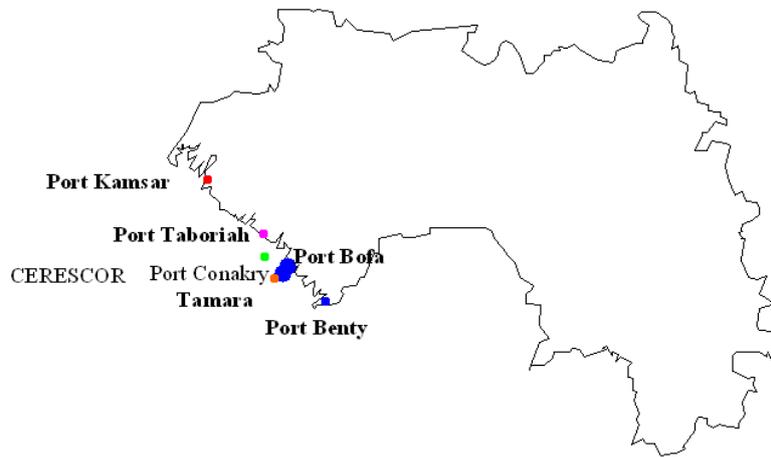
The data has never been exploited and they are stored in the archives of the SHOM.

Kamsar

The chart datum is 6.912 m below TGBM (benchmark n°44). The Benchmark n°44 is +6.925 m above “nivellement general de Guinee”

[xUTM: 542 105.545 yUTM: 177 366.660 z=-6.925]

Numerical datasets available: 04/05/1992 – 26/05/1993.



A map of the location of the tide gauge stations in Guinea.



Old tide gauge in national merchant navy port, Conakry.

Station	Longitude	Latitude
Port Conakry	13°43' W	9°31' N
Port Kamsar	14°37'W	10°39' N
CERESCOR	13°39'52"30W	10°39' N
Tamara (Iles de Loos)	13°49'50W	10°39' N
Port de Taboriah	13°57' W	9°59'N
Port de Boffa	13°56'6 W	9°43'3 N
Port de Benty	13°12'34"75 W	9°10'23"55N

Sea level station locations in Guinea.

Human capacities

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Conclusion

The human capacity in GUINEA is excellent and the personal has a good experience in tide gauge data analysis and interpretation. Local technicians for tide gauges maintenance are now available. Many datasets in paper form need to be digitized. They have acquired by float tide gauge types. Historical time series continuity data are available in paper form but as we can imagine, the Guinea sea level dataset is limited in quality.

Operational tide gauges have been recently installed in Congo, Cameroon, Ghana and Senegal. Cote d'Ivoire has acquired a numerical tide gauge but yet not installed. As we can note, sea level data big gap exists between Ghana and Senegal. It is crucial extend the West African sea level network to Guinea by installing a new tide gauge there. The proposed site for a new tide gauge installation is secure in term of vandalism (Conakry port). The tide gauge hut and electricity could be provided by the Port Authority.