

Sediments Management in Tripoli Harbour

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Presentation to ECOMEDPORT Project
Tripoli, May 28, 2020



Outline

- Tripoli, Historical perspectives
- Port of Tripoli in numbers
- Recent Expansions
- Risk mitigation

General Overview of Tripoli area



Looking back into the history



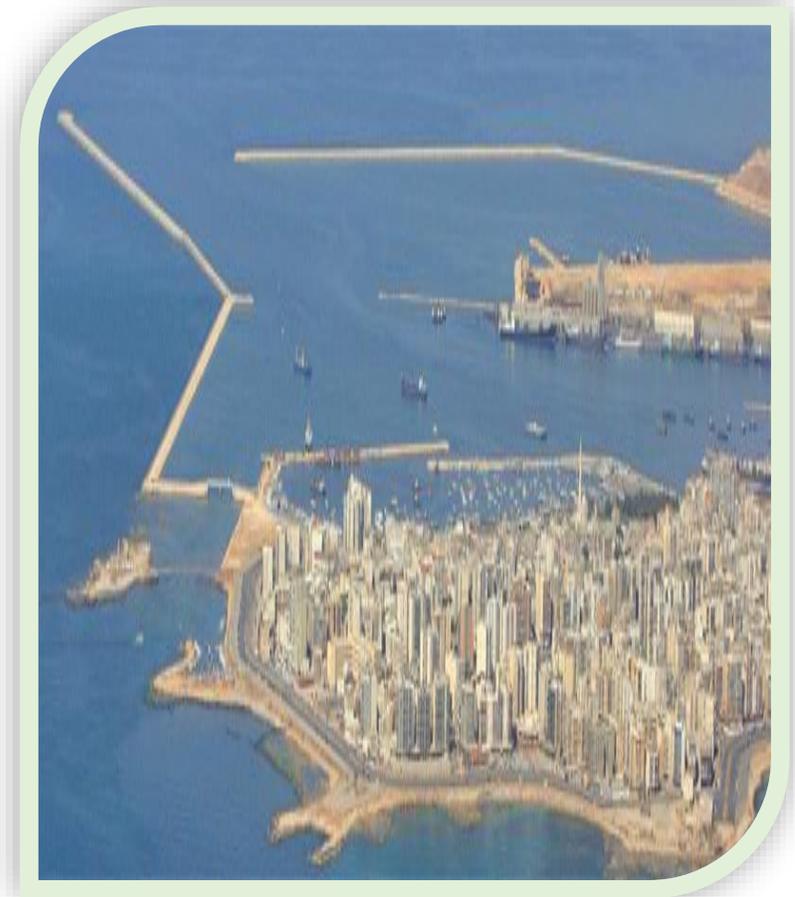
Aerial view of the Port of Tripoli

- Protected from wind
- Historically famous for previous military and commercial uses
- Slowed down during the 20th Century
- Occasional bursts in activities



The Port of Tripoli in numbers

- 2nd largest maritime access in Lebanon
- Area about 3 million Square meter
- Basin 1.5 Mm²
- Land 950,000m²
- SEZ area 550,000 m²
- Annual Income \$2M **
- Old 1000m pier of 8m deep waters
- New pier of 600m with 15m deep waters
- Support cooperation and research



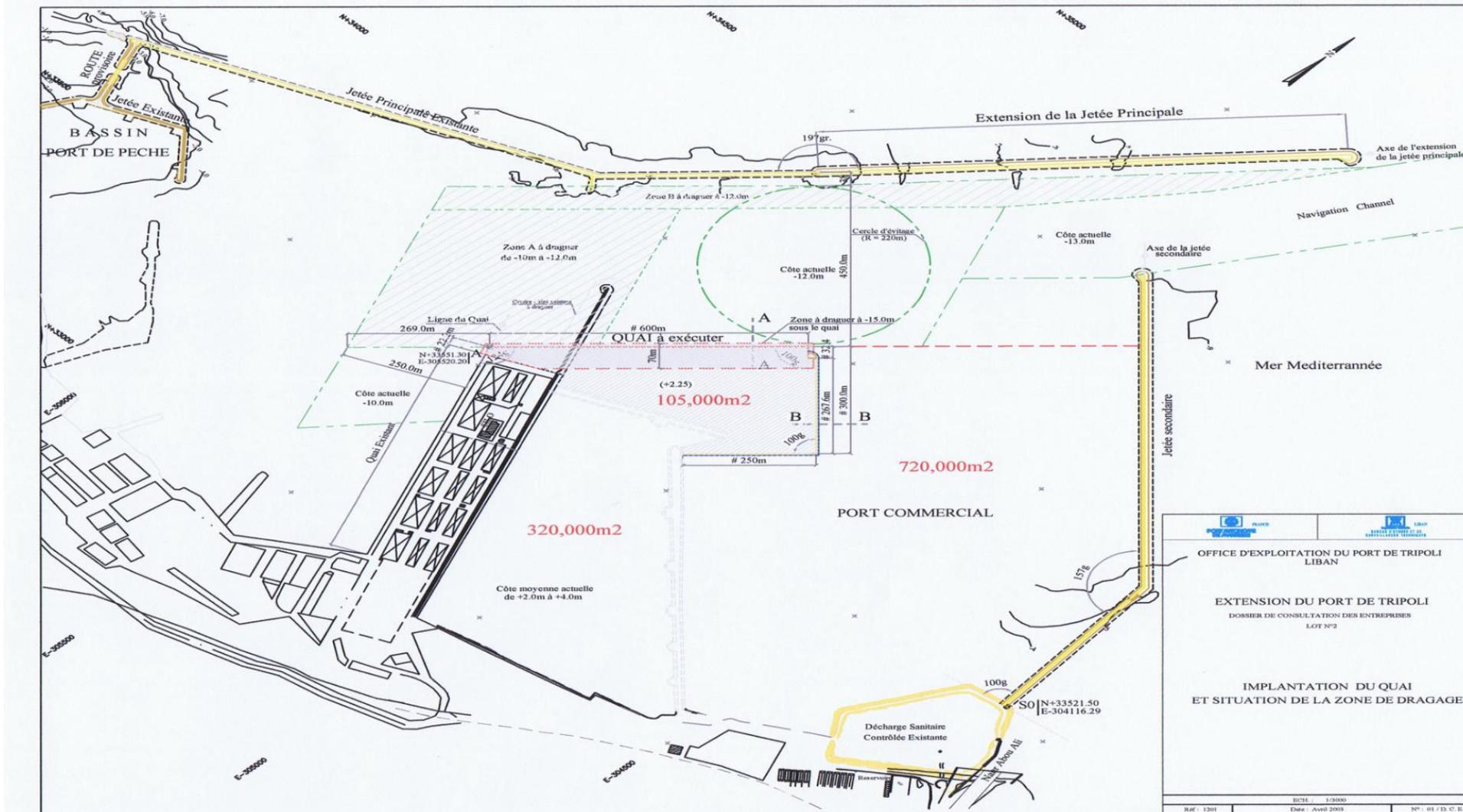
Port of Tripoli Cooperation Projects with EU

- **MESP** (Managing the Environmental Sustainability in Ports for Durable Development) (Complete)
- **MEDPORTS** (Strategic Mediterranean ports Sustainability & Efficiency in Intermodal Synchronization) (Complete)
- **MEDITA** (Mediterranean Information Traffic Application) (Complete)
- **PROMAPIR** project (Protection and Management of Palm Island Reserve) (Complete)
- **Be-Ready** project (Best Rapid Environmental Assessment Decision sYstem) (Ongoing)

Scientific Activities & Publications

- OEPT has an independent Environmental Engineering unit
- 2 PhDs supervised by Professor Halawani from LU
 - Helmieh AMINE, Exposure assessment of organic contaminants in Mediterranean transition zones; Montpellier 1 University
 - Dima MERHEBI, Characterization and fate of marine pollution from port activities in Tripoli (Lebanon), Lille 1 University
- Recent Scientific Publications:
 - Jalal HALAWANI: MERHABY. D., OUDDANE. B., NET. S., HALWANI. J., (2020). Assessment of persistent organic pollutants in surface sediments along Lebanese coastal zone. *Marine Pollution Bulletin*, Volume 153, April 2020
 - Jalal HALAWANI: MERHABY. D., RABODONIRINA S., NET. S., OUDDANE. B., HALWANI. J., (2019). Overview of sediments pollution by PAHs and PCBs in Mediterranean Basin: Transport, Fate, Occurrence, and Distribution. *Marine Pollution Bulletin*
 - Jalal HALAWANI: AMINE H., HALWANI J., GOMEZ E., MERHABI F., (2018). Etude de la contamination en hydrocarbures aromatiques polycycliques dans les sédiments et les eaux au nord Liban: rivières, zones de transition et sites portuaires.. *Journal Scientifique Libanais*
 - Jalal HALAWANI: MERHABY. D., OUDDANE. B., NET. S., HALWANI. J., (2018). Assessment of trace metals contamination in surficial sediments along Lebanese Coastal Zone. *Marine Pollution Bulletin*
 - Jalal HALAWANI: AMINE H., MERHABI F., HALWANI J., ROSAIN D., CASELLAS C., FENET H., GOMEZ E.. (2018). Alkylphenols and Alkylphenol Polyethoxylates levels in a Mediterranean developing country context: contamination of rivers and coastal sediments. *Research Journal of Chemical and Environmental Sciences, RJCES Volume 6 [2] April. 2018*
 - Jalal HALAWANI: MERHABY D., NET S., HALWANI J. & OUDDANE B., (2015). Organic pollution in surficial sediments of Tripoli harbor, Lebanon. *Marine Pollution Bulletin*, Volume 93, Issues 1–2, 15 April 2015, Pages 284–293
 - Jalal HALAWANI: AMINE H., GOMEZ E., HALWANI J., CASELLAS C., FENET H., (2012). UV filters, ethylhexyl methoxycinnamate, octocrylene and ethylhexyl dimethyl PABA from untreated wastewater in sediment from eastern Mediterranean river transition and coastal zones. *Marine Pollution Bulletin*, 64, 2435–2442
 - Walid Kamali, MANAGEMENT OF ENVIRONMENTAL SUSTAINABILITY OF PORTS - FOCUS ON NOISE MITIGATION, 24th International Conference on Sound and Vibration, London, 23-27 July 2017
 - Corrado Schenone, Margherita Marrè Brunenghi, Ilaria Pittaluga, Abdelrahman Hajar, Walid Kamali, Federica Montaresi, Mohammed Rasheed, Abdallah Abdul Wahab, Yara El Moghrabi, Riyadh Manasrah, Dima Merhaby, and Lorenzo Montani. Managing European Cross Border Cooperation Projects on Sustainability a focus on MESP project. 16th CIRIAF National Congress – Sustainable Development, Environment and Human Health Protection.
 - Effects of Noise Generated by Port Activities into the Surrounding area of Tripoli Port, Lebanon. Walid Kamali and Yara El Moghrabi, Proceedings of the 23rd, International Congress on Sound and Vibration, Athens, Greece, 10-14 July, (2016)
 - Schenone C., Pittaluga, I., Borelli, D., Kamali, W., El Moghrabi, Y., The impact of environmental noise generated from ports: outcome of MESP project, De GRUYTER Open Access Research Article Noise Mapping, 3, 26-36, February (2016)
 - Kamali, W., El Moghrabi, Y., Wahab, A.A., Noise mitigation measures of noise intense activities in harbour area and surrounding, *Proceedings of the 22nd International Congress on Sound and Vibration*, Florence, Italy, 12-16 July, (2015)
 - Ozone Monitoring in the Area of the Port of Tripoli, Walid Kamali, Salam Messaïkeh, Yara El Moghrabi and Abdallah Abdul Wahab, LAAS21, Beirut, Lebanon, April 16, 2015
 - Kamali, W., Abdul Wahab, A., El Moghrabi, Y., Kabbara, H., Hajar, A., Meccaci, R., Merhaby, D., Survey on Environmental noise in the port of Tripoli, *Proceedings of the 21st International Congress on Sound and Vibration*, Beijing, China, 13-17 July, (2014)

Strategic Plan for OEPT

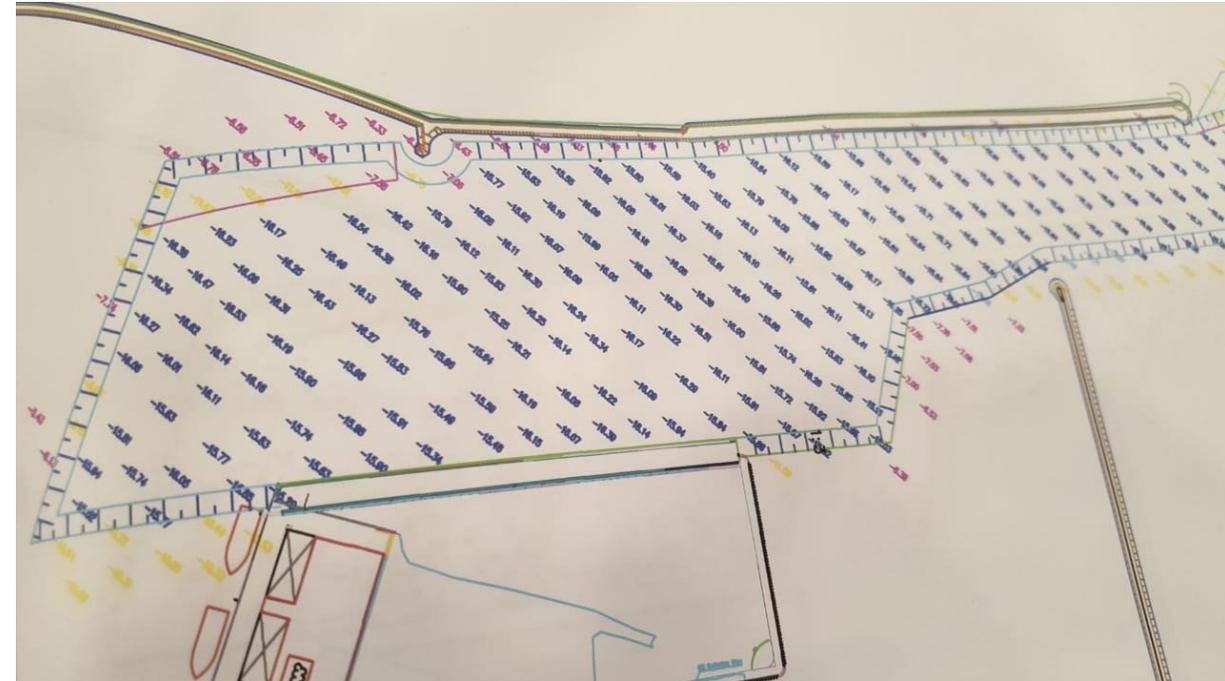


Expansion project & dredging areas, 2016



Expansion project & dredging areas, 2016

- 3Mm³ of 3 different types of extracted materials along 600m pier:
 - Sand/Slit
 - Clay
 - Rocks
- Performed using Bucket Dredger
- Required Maintenance to -15m deep waters



Can this technology help us?





Thank you