

The Lebanese National Center for Marine Sciences

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1-Background

The National Center for Marine Sciences, as a part of the Division of Environmental Sciences of the National Council for Scientific Research, was established in 1975, in the coastal cities of Jounieh and Batroun.

The personnel of the Center consist of 3 senior researchers (oceanography, Fish physiology, planktonology), research assistants and technicians. Additionally there is a group of students preparing advanced degrees under joint supervision.

A national oceanographic database is being established at the Center.

2-Facilities

The Center is equipped with basic facilities in order to conduct applied research in various disciplines of marine sciences including physical oceanography. Available equipment include:

- Oceanography probes (STD, O₂, turbidity sensor, fluorometer sensor)
- Self-recording Doppler current meters
- Sun workstation and relevant software: IDL, MATLAB, MapInfo.
- Access to satellite imagery through the Internet (AVHRR, SeaWiFS).

We used to have a research vessel SETA III that was lost during the war and therefore is still lacking. Currently we rely on fishery boats for fieldwork and data collection, but this is not a satisfactory situation for obvious reasons.

For evaluating the Lebanese coastal water hydrographic data are still lacking (there are some data taken mostly for the surface and they are very discrete in time).

Some hydrodynamic data are available in our database

Activities

The NCMS has participated and completed its commitment to MEDAR/MEDATLAS, and continues its active support to various MEDPOL activities, and is involved in other joint activities such as the CEDRE program, which is a joint activity with the French Government.

As regards administrative and scientific responsibilities in relation to the coastal area and the sea, I have to mention that the role of the National Council for Scientific Research, primarily, is the research component.

It is worth noting that I undertake research cooperation with another Center that is part of our Council, namely, the National Center for Remote Sensing.

It is to be noted that the marine ecosystem along the coast of Lebanon, is affected by extensive pollution from urban and industrial wastes (5 main coastal cities). The Lebanese government wastewater program (being discussed now) calls for building 9 major sewage treatment plants near the coast, together with associated sewer networks and sea outfalls, to treat sewage generated in the coastal zone. The role of the National Center for Marine Sciences is to help in monitoring and assessment of pollution distribution in some regions of the Lebanese coastal area.

Unfortunately, there are no other institutions in the country (public or private) that are involved directly with the coast and the sea. However, as regards administrative responsibilities there is a host of ministries and other agencies that have some responsibilities as regards the sea. Amongst these:

- Ministry of Environment
- Ministry of Agriculture
- Ministry of Transport
- Ministry of Defense
- Ministry of Internal Affairs
- Ministry of Public Health
- Council for Development and Reconstruction

The major academic institutions such as the universities have an academic interest, which currently translates into offering basic undergraduate courses

List of research projects

NCMS Projects 2001/2002

<i>Project title</i>	<i>Partners</i>	<i>Finance</i>	<i>Starting date</i>	<i>Status</i>
Water quality mapping of Tripoli coastal area from Landsat-TM and SeaWiFS data	NCMS	NCSR	2002	On-going
Assessment of the impact of a sewage primary treatment plant on the coastal ecosystem south of Beirut	NCMS-CDR	Private company	2002	On-going
Seasonal variation in the chemical composition of some local fish	NCMS	NCSR	1998	On-going
A survey of the Levantine terraces and sandy beaches of Lebanon	NCMS	NCSR	2001	On-going
Etude des cycles biologiques des espèces phytoplanctoniques toxiques dans les eaux cotières libanaises	NCMS	NCSR	1997	On-going
Estimation de la biomasse phytoplanctonique des eaux cotières libanaises par l'analyse des pigments chlorophylliens	NCMS	NCSR	2001	On-going
Effet spatial et temporel des rejets chimiques de l'usine de Selaata sur les paramètres physico-chimiques de la nappe superficielle de l'eau de mer et son influence sur la production primaire	NCMS	NCSR	2001	On-going
Pollution chimique de la cote libanaise: essai de modélisation et approche réglementaire	NCMS-INAP			On-going
Le Mercure, le Cadmium et le Plomb dans les eaux littorales libanaises: apports et suivis au moyen de bioindicateurs quantitatifs (éponges, bivalves et gastéropodes).	NCMS	NCSR	2000	On-going

4 – Restraints

Administrative

- Lack of awareness is noticeable in the country. This is primarily due to lack of a co-ordinatory mechanism in stakeholders.
- Implementation still depends to a great extent on personal initiative and involvement. Sudden changes in the status of personnel reflect negatively on the effective continuation of the program.
- There is no national plan and no coordination among relevant institutes
- No conservation schemes involving the local community

Scientific

- Lack of specialized staff is a structural difficulty we face.
- Lack of specialized academic facilities.
- Challenges in information transfer. We still face challenges in information transfer with respect to the available info in other public and private institutions. There are no mechanisms for coordination, which has an impact on information transfer and management.

Financial

Financial restrictions continue to pose a hindrance to effective implementation.

- No national-wide relevant projects financer
- Available money in current research projects is limited
- No proper source of funding in the country

As regards MAMA, the lead institute, and the only institute, is the National Center for Marine Sciences of the National Council for Scientific Research, as this is the only infrastructure in the country capable of engaging in such work.

Finally, MAMA is expected to assist us in capacity building in this regard. Through our involvement as a member of this network we expect to have access to relevant information, and also become a provider of information as well.

Thank you for your attention.

Institutions with marine related activities

1-Ministry of Environment:

Fax: +961 4 525 080

2-Ministry of Agriculture

Fax: 961 5 455 474

3-Ministry of Transport

Fax: 961 1 372 438

4-Ministry of Defense

Fax: 961 5 951 014

5-Ministry of Internal Affairs

Fax: 961 1 423 754

6-Ministry of Public Health

Fax: 961 1 615 730

7-Council for Development and Reconstruction

Fax: 961 1 981 431

Center's Publications (Selective) 1999-2001

Kabbara N. 1999 Current status and trends in the wastewater management in Lebanon. Fulbright Visiting Scholar Conference: The Global Environment: Challenges for the Future. March 23-27, Washington, USA.

Kabbara N. 1999 The use of satellite imagery for assessing SST variability anomalies in the Levantine Basin. Proceedings of the Tenth International Symposium on Remote Sensing Integrated Systems: Satellites, Receiving Stations and Applications, November 20-23, Damascus, Syria.

Sarkkula J., H. Sayed Sharaf El-Din, W. Hamza, S. Mikkail, W. Labib, M. Khawlie and N. Kabbara 1999 Coastal Management Support for Mediterranean Developing Countries; a cooperation project for coastal modelling and on-job-learning. Environment 99 Conference, November 24-26, Cairo, UAR

Kabbara N. X. Y. Yan and V. Klemas 2000 Temporal and spatial variability of the surface temperature anomaly in the Levantine Basin of the Eastern Mediterranean. In publishing (*International Journal for Remote Sensing*).

Kabbara N. 2000 An overview of the hydrodynamic characteristics along the coast of Lebanon. REMPEC Workshop: National Contingency and Response to Accidental Marine Pollution, April 10-12, Beirut, Lebanon.

Shaban A., N. Kabbara, and K. Khawlie, 1999 Thermal infrared survey on fresh water sources in the marine environment along the northern coast of Lebanon. Report presented to the Lebanese National Council for Scientific Research and to the Lebanese Ministry of Water Resources. Beirut, Lebanon

Kouyoumjian H., M. Tilbian, and N. Najjar, 2001 Exposure of the Lebanese Population to mercury through fishery products and a proposal for a securing standard, *Lebanese Science Journal*, Volume 2, Number 1.

Abboud-Abi Saab M. and Wehbe, M. T., 2000 Utilisation des indices écologiques phytoplanctoniques pour l'estimation de la qualité de l'eau. *Annales de Recherche Scientifique*, 2 : 11-19.

Abboud-Abi Saab M., Wardan, R. 2000 L'enrichissement de l'eau de mer par différentes concentrations de fumure de poules. *Annales de Recherche Scientifique*, 2 : 33-40.

Nuwayhid M, N. Kabbara, & E. Najjar (2000) Chemical composition of the edible portions of four species of fish found off the Lebanese Coast and its relation to the reproduction time. *Abstracts of the 14th Science Meeting organized by the National Council for Scientific Research & the Lebanese Association for the Advancement of Science, November 23-25, Beirut, Lebanon.*

Nuwayhid, M.A., E. Najjar, and N. Kabbara (2002) A preliminary study of the seasonal variations in the chemical composition of muscles in four kinds of fish caught off the Lebanese coast. *Oebalia (International Journal of Marine Biology and Oceanography)*. Submitted.

S. Lakkis, and N. Kabbara, (2000) Importance of data management in oceanographic research in Lebanon. *Abstracts of the 14th Science Meeting organized by the National Council for Scientific Research & the Lebanese Association for the Advancement of Science, November 23-25, Beirut, Lebanon.*

S. Lakkis, 1999 Long-time series of hydrographic data from offshore Lebanese waters (Eastern Mediterranean). *Proceedings of the International GODAR Review Meeting: Abstracts: 22. IOC, NOAA, EC, July 12-15, 1999, Silver Spring, MD USA*

Lakkis S. & V. Novel-Lakkis, 2000 Distribution of the Phytobenthos along the coast of Lebanon (Leevatine Basin, East. Mediterr.). *Mediterranean marine Science*, 1/4;143164.