ENI SEIS II South InCountry support Libya National Workshop Identification of Libyan priority indicators to assess the State of Coastal and Marine Environment

Summary Report

Version: 3
Date: 07.01.2019
EEA activity: WP1

Author: Sabah Nait
From: Umweltbundesamt (Vienna)

This project is funded by the European Union

UN environment
United Nations Environment Programme

MAP
Mediterranean Action Plan
Barcelona Convention

European Environment Agency

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1 Introduction

The Libyan coastline is more densely populated than the hinterland and exhibits higher rates of population growth and urbanization. According to the Bureau of Statistics and Census 80 to 85% of the population live in the coastal region, which is subject to many varied pressures driven by the increasing use of marine resources and human-driven environmental change.

The economy of Libya depends primarily upon revenues from the petroleum sector, which represents over 95% of export earnings and 60% of GDP (Bureau of statistics and Census) and relies on imports of most food and products from all over the world; hence the maritime transport is very dense along the coastline.

The marine pollution has worsened due to the discharge of untreated wastewater in recent years, due to an absence of control, enforcement and lack of consolidated legislation regulating and defining the role of each responsible institution.

In addition to the Environmental General Authority and the Marine Biology Research Center, a variety of institutions are responsible for marine protection, such as the Ministry of Local Government, Ports and Maritime Transport Authority, General Authority for Marine Wealth, General Authority for scientific research centers, the National Oil Corporation (NOC), and other research centers such as the Libyan Petroleum Institute (LPI) and academia, the Libyan Center for Remote Sensing and Space Science (LCRSSS) and a number of Nongovernment Organization. All these institutions are producing pieces of information and data, but the lack of coordination and organization of their efforts does not help to solve the environmental problems in a constructive manner.

2 Marine Monitoring Programme and main challenges

To establish a Marine monitoring programme, a number of monitoring stations are needed in order to ensure full monitoring of the coastline, taking into account UN environment Mediterranean Action Plan (UNEP/MAP) recommendations and guidelines. With the planned monitoring programme, Libya will be able to monitor the ecological objectives (EO), 5, 9 and 10. In this programme the Marine Research Center is planning to conduct the regular monitoring of nutrients and chlorophyll, as well as a few elements of hazardous chemicals such as heavy metals. The Libyan Petroleum Institute, as one of the supporting institutions, have laboratories and can provide support in collecting data for some of the parameters that are needed to monitor the coastal area as they have several facilities along the coastline. In total, 10 stations along the Libyan coast were selected following UNEP/MAP criteria for regular monitoring and a national criteria. The sites had to be close to facilities of the Libyan national Petroleum Institute, in order to benefit from their resources in sampling, sampling preparations and analysis as EGA doesn't have the human resources to take samples. Remote sites in non-residential areas were chosen to serve as controls. As regards Eutrophication, difficulties lie in getting samples at 50 meters deep due to several problems, including the lack of sampling ships, and security issues

related to illegal immigrants. Although Eutrophication is not a common phenomenon along the Libyan coastal water, continuation of raw sewage discharge with excessive input of phosphorus and nitrogen will contribute largely to the acceleration of the occurrence, particularly around the major cities.

The importance of data and information for assessment and policy making, as well as for abating marine pollution, is acknowledged by the Libyans experts. Problems encountered in efforts to build an information system can be summarized as follows:

- ✓ The lack of human and financial resources, and in some cases knowledge gaps, have hindered the development of the necessary monitoring programme needed to generate data for reporting under the Barcelona Convention (BC). The EGA laboratory was equipped by UNDP in 2008 through a project financed by the Libyan government and supervised and implemented by UNDP (2005-2010). However, due to the political problems facing the country the EGA staff didn't receive the necessary capacity building to safely operate the equipment and most of the routine work was stopped.

- ✓ New chemicals are needed for the analysis of samples as the existing chemicals have expired.

- ✓ The inter-institutional cooperation is generally weak. Data and information does exist but is scattered among different stakeholders. A common communication platform is missing.

- ✓ The sharing of information is almost nonexistent as data is considered a secret, "Data Phobia".

- ✓ Lack of Marine Environment law and lack of enforcement of the environmental legislation control which is reflected in higher loads of phosphorus and nitrogen due to direct discharge of raw sewage.

- ✓ Need for training and capacity building in quality assurance and quality control to ensure data consistency and validation of the data prior to publication.

As this trend is expected to continue into the future, a State of Marine Environment report based on national data and indicators will shed light on the current situation and give a clearer picture on the challenges, problems and possible solutions, as well as clear messages for decision makers.

In this context and within the framework of ENI SEIS II South Support mechanism a dedicated workshop was organized on 11-12 September at Hotel Sheraton in Alexandria. This gathered together representatives from Libya Environment General Authority (EGA), Libya Bureau of Statistics and Census, Egyptian Environment Affairs Agency (EEAA), CEDARE, European Environment Agency and Environment Agency Austria.

3 Workshop methodology and objectives

The main objectives of the workshop were (see Agenda in Annex 1):

- ✓ to share experiences with Egyptian experts in compiling state of environment reporting;
- ✓ to identify the main issues contributing to the pollution and degradation of the Libyan coastal and marine areas;
- ✓ to identify the relevant coastal and marine indicators;
- ✓ to develop a structure for Libya's State of Coastal and Marine Environment Report.

Through a number of presentations, working groups and plenary discussions, the experts worked on:

1. identification and prioritization of coastal and marine issues;
2. determination of the impacts of each priority issue;
3. identification of relevant indicators;
4. identification of the data sources;
5. development of state of the coastal and marine environment report structure.

Under the facilitation of CEDARE, experts analysed the causes of the priority issues identified, conducted a rapid transboundary analysis of the main issues between Egypt and Libya, structured the relevant indicators using the DPSIR framework and initiated a first analysis of the data sources.

See in Annex 2 the list of participants.

4 Outcomes and way forward

On the basis of the outcomes of the working groups, a preliminary structure for Libya's State of the Coastal and Marine Environment Report have been proposed.

Follow-up steps and key processes aiming to support the full development and production of the report were identified. EGA and Libyan experts will ensure that the following milestones are reached:

- elaboration of a timeline for the production of the report;
- fine-tune the structure of the report (compiled and proposed during the workshop);
- identification and agreement on final list of indicators;
- identification of lead authors and the suitable person to lead the process;
- develop detailed term of references for each chapter;
- maintenance of close dialogue and cooperation with Egyptian colleagues (peer to peer support).

The ENI SEIS II South support mechanism will support the implementation through the provision of expert support, peer review of the report and outreach/dissemination.

Once a draft report has been compiled (mid 2019) a larger meeting, involving other countries from the region and regional stakeholders, will be organized to discuss the main findings from the report

and share experiences on the processes/practices applied for its production. In order to ensure appropriate support, it has been advised to ensure an English translation of the report.

See in Annex 3 the workshop output

1- Identification and analysis of key national and transboundary issues (Forms 1, 2)
2- List of relevant indicators (Form 4)
3- DPSIR analysis methodology (Form 3)
4- Proposed Structure of the State of the Marine and Coastal Environment in the State of Libya

Annex 1: Agenda

Link to Agenda

Annex 2: List of Participants

Link to List of Participants

Annex 3: Workshop Outputs

ورشة عمل تحديد المؤشرات ذات الأولوية لتقييم حالة البيئة البحرية بدولة ليبيا

الإسكندرية، ١١-١٢ سبتمبر ٢٠١٨

تقييم ورشة العمل

القضية المحورية للتقرير

التنمية المستدامة والتغيرات المناخية

القضايا الرئيسية

1- تلوث البيئة البحرية
2- التنوع الحيوي
3- الزحف العمراني و التطور الحضري
4- ضعف الإدارة وعدم وجود استراتيجية متكاملة للمناطق الساحلية
5- ضعف الوعي البيئي/ السلوك البيئي السليم

Overarching environmental issue

Sustainable development and climate change

Main Environmental issues

1- Pollution of the marine environment
2- Biodiversity
3- Urban planning and urban development
4- Poor management and lack of integrated strategy for coastal areas
5- Poor environmental awareness / environmental behavior

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الإسكندرية، ١١-١٢ سبتمبر ٢٠١٨

تقييم ورشة العمل

القضية الرئيسية

فقد التنوع البيولوجي

القضايا الفرعية

1- تفتت الموائل الطبيعية
2- الأنواع الغازية
3- التنمية العشوائية الغير مخططة
4- التلوث البحري ← زي، الصرف
5- التغير المناخي
6- الاستغلال المفرط للموارد الطبيعية البحرية

Main Environmental Issue

Loss of biodiversity

Sub Issues

1- Fragmentation of natural habitats
2- Invasive Species
3- Unplanned development
4- Marine pollution: Oil Pollution, Sewage
5- Climate Change
6- Over-exploitation of marine natural resource

القضية: تلوث البيئة البحرية

①

القوى الدافعة	الضغوط	الحالة	التأثير	الاستجابة
- غياب الأمن	- الهجرة القصرية - انتشار العشوائيات	- تغيير في التوزيع الديموجرافي - تلوث بصري	- تدني مستوى الخدمات - الضغط علي الموارد	- مراجعة بعض القوانين
- سوء الإدارة	- زيادة التلوث بالصرف الصحي - زيادة التلوث الصناعي - زيادة التلوث النفطي - زيادة تلوث المخلفات الصلبة	- تلوث بيئي عام - زيادة تركيز الملوثات	- تلوث هواء - تلوث مياه - تلوث التربة	- برامج توعويه في التنمية

- ضعف تنفيذ التشريعات / القوانين	•	- تدهور التنوع الحيوي • • - تأثر الإنتاجية السمكية •	- Loss disbalance - Invasive SP. - In dangerous species - QUL - QUN	- الالتزام في تنفيذ الاتفاقات الدولية / الإقليمية •

القضية:التنوع البيولوجي

②

القوى الدافعة	الضغوط	الحالة	التأثير	الاستجابة
- غياب الأمن •	- الافراط في الصيد - اللجوء للممارسات الغير السليمة في الصيد •	- تدهور الإنتاجية السمكية - تدهور الموائل البيئية	- نقص الإنتاجية البيولوجية	- مراجعة التشريعات
- الوضع الاقتصادي	- التلوث البحري - التغير في هيكل النشاط الاقتصادي •	- الإضرار بالمخزون الأحيائي البحري - زيادة الحرف المرتبطة بالبيئة الساحلية	- اختلال بعض المهن الحرفية	- برامج التوعية - الالتزام بالاتفاقيات الدولية
- ضعف المعرفة والوعي البيئي			- تدهور الموارد البحرية Degradation	- تفعيل التنسيق بين الإدارات/ المؤسسات المعنية - توفير وتوجيه الدعم المالي للتنمية البيئية والأنشطة المصاحبة

القضية: لزحف العمراني والتطور الحضري

③

القوى الدافعة	الضغوط	الحالة	التأثير	الاستجابة
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•				
•				

Issue: Pollution of the marine environment

①

Driving forces	Pressure	State	Impact	Response
Lack of security	- Forced migration - Spread of slums	- Change in demographic distribution - Visual pollution	- Low level of services - Pressure on resources	- Review laws
	- Increased pollution of sewage - Increase industrial pollution - Increase oil pollution - Increased pollution of solid waste	General environmental pollution increased concentration of Contaminants	- Air pollution - Water pollution - Soil pollution	- Awareness programs in development
Bad management		- Degradation of biodiversity - Fish productivity affected	Loss disbalance Invasive Species. Endangered species QUL QUN	- Commitment to the implementation of international /regional agreements

Issue: Biodiversity

②

Driving forces	Pressure	State	Impact	Response
- Lack of security	- Over fishing - Usage of unacceptable unregulated fishing methods	- Degradation of fish productivity - Degradation of habitats	- Lack of biological productivity	- Review legislation
- Economic situation	- Marine pollution - Change in the structure of economic activity	- Damage to marine biological stocks - Increased crafts associated with the coastal environment	- The imbalance of some crafts	- Awareness Programs - Commitment to international conventions
- Weak knowledge and environmental awareness			- Degradation of marine resources Degradation	- Activate the coordination between the concerned departments /institutions - Provide guidance and financial support for environmental and development activities

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المؤشرات

القضية الرئيسية	القضايا الفرعية	المؤشرات	الجهة/مصدر البيانات
① تلوث البيئة البحرية	1- تلوث الصرف الصحي	1- Eutrophication 2- WQI (Water Quality Index)	مصادر رسمية فاعلة (دوريه) (الجهات الحكومية) 1- مصلحة الإحصاء / التعداد 2- مركز بحوث الأحياء البحرية 3- الهيئة العامة للبيئة 4- المعهد الليبي للنفط
	2- التلوث النفطي	Total hydro canbones	مصادر داعمة (الجامعات) مراكز البحوث
	3- التلوث الصناعي	3- نسبة الصرف الصحي/ حضاري / المعالج / أجمالي كمية الصرف علي البيئة البحرية	

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	4- تحديد الأماكن الساخنة	Periodic c loads ↓ ↓ Bio. Chem.	
	5- القمامة البحرية	المؤشرات البيولوجية (العد البكتيري / أنواع البكتريا)	
		معدل توالد القمامة البحرية على الشواطئ معدل توالد القمامة الطافية معدل توالد القمامة في القاع معدل تواجد القمامة البحرية بالكائنات	

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المؤشرات

القضية الرئيسية	القضايا الفرعية	المؤشرات	الجهة/مصدر البيانات
② التنوع البيولوجي	- فقد التوازن البيولوجي - فقد التنوع البيولوجي	- اعداد الكائنات الشائعة (أمثلة منها السلاحف) - اعداد الكائنات النافقة	مؤشرات التنوع البيولوجي

	- الأنواع المهددة بالانقراض - السلالات الغازية (الدخيلة)	- Red list - تواجد سلالات غريبة علي البيئة - Black list	
	- الصيد الجائر - الصيد العشوائي - الممارسات الخاطئة	- مؤشر المقارنة التعاقبي - حجم الإنتاج السمكي - عدد محاضر الصيد أثناء فترة الحظر - عدد المراكب الميكانيكية - عدد الأنواع الأكثر استهلاكاً من قبل السكان - عدد الأنواع المهددة	

المؤشرات

القضية الرئيسية	القضايا الفرعية	المؤشرات	الجهة/مصدر البيانات
③ الزحف العمراني	- التخطيط العشوائي - البناء العشوائي	- مساحة الجزء المعمور - نسبة مساحة الأراضي المبنية بالمخالفة أمام إجمالي المنطقة الساحلية	
	- ضعف البنية التحتية	- نسبة السكان المتصلين بشبكة مياه الشرب وخدمات الصرف الصحي - عدد محطات الكهرباء المنشآة بالمناطق الساحلية	

	- تغير الأنشطة الاقتصادية	- نسبة التوسع في شبكات الطرق بالمنطقة الصناعية - نسبة توزيع الأنشطة الاقتصادية بالمنطقة الساحلية - التغير النسبي للأنشطة الاقتصادية	

Indicators

Main Environmental issues	Sub Environmental Issues	Indicators	Data Sources
① Pollution of the marine environment	1- Sewage contamination	1- Eutrophication 2- WQI (Water Quality Index)	- Effective official sources (periodically) (government agencies) 1- Statistics Department /Census 2- Marine Biology Research Center 3- Environment Public Authority 4- Libyan Petroleum Institute
	2- Oil Pollution	Total hydro canbones	Supporting Sources (Universities) Research Centers

	3- Industrial pollution	Sewage rate / Civilization / processor/ total amount of discharge to the marine environment	
	4- Identify hot spots	Periodic c loads ↓ ↓ Bio. Chem.	
	5- Marine garbage	Biological indicators (bacterial count / bacterial species)	

		Rate of marine litter production on beaches - Rate of floating garbage collection - Rate of reproduction of garbage at the bottom - Average incidence of marine litter in organisms	

Indicators

Main Environmental issues	Sub Environmental Issues	Indicators	Data Sources
② Biodiversity	- Loss of biological balance - Loss of biodiversity	- Number of common organisms (Example; turtles) - Number of dead Habitat	Biodiversity indicators
	- Endangered species - Invasive species	- Red list - The presence of exotic strains in the environment - Black list	

	- Overfishing - Random Catch - Malpractice	- Consecutive comparison index - Volume of fish production - Number of fishing records during the embargo period - Number of mechanical vessels - Number of species most consumed by the population - Number of threatened species	

Indicators

Main Environmental issues	Sub Environmental Issues	Indicators	Data Sources
③ Urban crawling	- Random planning - Random construction	- Percentage of Urban areas - Percentage of built-up area in violation of the total coastal area	
	- Weak infrastructure	- Percentage of population connected to drinking water network and sanitation services - Number of power stations established in coastal areas	

	- Change in economic activities	- Extent of expansion of road networks in the industrial area - Distribution of economic activities in the coastal region - Relative change of economic activities	