14.3.4 Technologies Towards Aquatic Ecosystem Damage Prevention (Direct Work)

2024/2025

Initiative: Outreach Workshop with Abu-Qir Bay Fishermen on Antifouling Paints, Environmental Risks, and Alternative Solutions

Biofouling is the accumulation of bacteria, algae, and sessile invertebrates on submerged surfaces. It can increase hull resistance, reduce vessel maneuverability and operational efficiency, and contribute to corrosion and maintenance costs. Conventional antifouling paints may contain toxic compounds, including copper-based substances, which can negatively affect marine organisms and aquatic ecosystems.

In October 2023, students from the College of Fisheries and Aquaculture Technology, Arab Academy for Science, Technology and Maritime Transport (AASTMT), launched an environmental awareness initiative promoting eco-friendly antifouling paints as alternatives to conventional products used by fishermen. The initiative engaged 15 fishermen and involved 4 fishing boats at Abu Qir fishing port. The students introduced their study, aiming to raise awareness of environmentally responsible hull protection and reduce the potential impacts of harmful chemicals on marine ecosystems. The activity supports marine environmental protection by encouraging sustainable fishing practices and promoting alternatives that can help balance vessel performance, economic efficiency, and the conservation of marine resources.



Initiative: Antifouling paints: Environmental hazards and alternatives

On Saturday, December 21, 2024. In line with Global Efforts toward Environmental Stewardship and Sustainable Development Goals, College of Fisheries and Aquaculture Technology students actively participated in the "By Fisher to Fisher" Program

On Saturday, 21 December 2024, students and staff members of the College of Fisheries and Aquaculture Technology (CFAT), Arab Academy for Science, Technology and Maritime Transport (AASTMT), participated in the "By Fisher to Fisher" program, under the broader "Green & Clean" campaign. The initiative was implemented under the auspices of the

Egyptian Ministry of Environment and Banque du Caire, with supervision from Global Stars Company, and focused on environmental protection and supporting fishing communities.

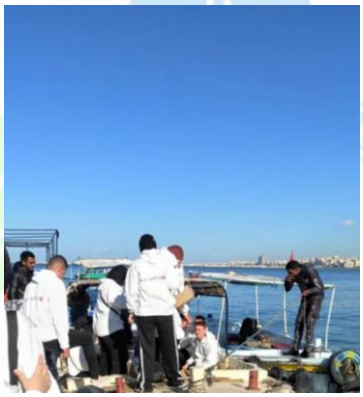
Beyond the harbor cleanup and waste recycling activities at Alexandria's Eastern Harbor fishing port, CFAT's participation helped promote environmental awareness among fishermen and encourage more sustainable fishing practices. Through direct engagement with the fishing community, the initiative provided an opportunity to communicate the importance of responsible fishing practices, protecting juvenile fish and avoiding the capture of undersized fish, reducing discarded fishing gear and marine litter, and maintaining clean fishing grounds.

The program also highlighted the importance of fishermen's participation in protecting marine resources, reducing pollution from fishing activities, and supporting the long-term sustainability of fisheries and the blue economy.

The activity was provided free of charge to participating fishermen as a community environmental awareness initiative, with no participation fees.

The initiative combined practical harbor cleanup and waste recycling with direct environmental awareness engagement targeting the fishing community, reinforcing the role of AASTMT and CFAT in promoting responsible fisheries practices and marine environmental stewardship.





College of Fisheries and Aquaculture Technology-Alexandria | AASTMT

College students participated in the “Green Innovation Week” under the organization of the Academy of Scientific Research and Technology in cooperation with the Union of Arab Scientific Research Councils, the Arab Organization for Agricultural Development, the Islamic World Organization for Education, Culture and Science, and the Arab Forum for Circular Economy and Green Growth under the title “Green Innovation Week.”

Within the framework of the interest of the Faculty of Fisheries and Aquaculture Technology at the Arab Academy for Science, Technology and Maritime Transport in achieving the sustainable development goals (especially Goal 14: Life Below Water) and the trend towards the blue economy, two students (Ahmed El-Mallah and Habiba Nasser) of the college

participated in the “Green Innovation Week” under the organization of the Academy of Scientific Research and Technology in cooperation with the Union of the Arab Scientific Research Councils, the Arab Organization for Agricultural Development, and the Islamic World Educational, Scientific and Cultural Organization. The Arab Forum for Circular Economy and Green Growth, titled “Green Innovation Week,” was held from 8 to 10 July 2024 at the headquarters of its Alexandria office. The forum reviewed three axes: the circular economy and its importance in recycling agricultural waste; the orange economy, related to marketing research outputs by the Academy of Scientific Research and Technology; and Alexandria is green with innovation. The third axis is "Alexandria is Green with Innovation." An exhibition was also held featuring the most important research outputs in innovation for universities and research centers in the governorates of Beheira, Matrouh, and Alexandria, as well as a review of university students’ graduation projects. The students participated in two research projects: eco-friendly antifouling paints and bioplastic production from marine algae. The projects directly related to aquatic damage prevention.







[College of Fisheries and Aquaculture Technology-Alexandria | AASTMT]

Participation of Faculty Members and Male and Female Students of the Academy’s Faculty of Fisheries and Aquaculture Technology on Tuesday, April 30, 2024, in the Workshop for the Project: Curriculum Development for the Sustainable Blue Economy Study toward the Achievement of Ocean Decade in Tunisia, Egypt, and Jordan / BLUE-ERA

Faculty members and male and female students from the Academy’s Faculty of Fisheries and Aquaculture Technology participated on Tuesday, April 30, 2024, in the workshop for the project: Curriculum Development for the Sustainable Blue Economy Study toward the Achievement of Ocean Decade in Tunisia, Egypt, and Jordan / BLUE-ERA. This workshop aimed to introduce the concept of the blue economy and identify stakeholders' requirements for the master’s program. This workshop will produce key recommendations that help shape the content of the proposed master’s study program, which will reflect the professional ideas and aspirations of our academic and professional community. The workshop brought together the European partners (France, Greece, and Italy) and the Arab partners (Jordan, Tunisia, and Egypt), in a dialogue platform to exchange ideas and experiences, and enhance cooperation and mutual understanding between the parties.






College of Fisheries and Aquaculture Technology-Alexandria | AASTMT

MARLOG 14 – International Maritime and Logistics Conference: Environmental Sustainability in Coastal and Port Areas

Date: 23–25 February 2025
Location: Hilton Green Plaza Hotel, Alexandria, Egypt
Organizer: Arab Academy for Science, Technology and Maritime Transport (AASTMT)
AASTMT Role: Conference organizer and host of scientific research presentations
Conference Theme: Artificial Intelligence Implementations – Towards Shaping the Future of the Digital World

The Arab Academy for Science, Technology and Maritime Transport (AASTMT) organized the 14th International Maritime and Logistics Conference (MARLOG 14) in Alexandria from 23 to 25 February 2025.

The conference's scientific contributions included research presentations on environmental sustainability in coastal and port areas. These included research on wave and solar energy applications for sustainability in coastal zones, with a case study of Alexandria Port, and research on reducing emissions from marine diesel engines through alternative fuel technologies in green port applications. These scientific contributions addressed environmental challenges associated with port and maritime activities and explored technological approaches to reducing environmental impacts and supporting more sustainable coastal and port infrastructure. The conference provided a scientific platform for presenting research on environmental sustainability in coastal and marine areas.



marlog.aast.edu
MARLOG 14

The TouMaLi Research Project is a Comprehensive, Multi-Year Initiative Scheduled to run from 2021 to 2025

Reducing marine litter in Northern Africa—specifically in countries like Algeria, Egypt, Morocco, and Tunisia—is essential for protecting the region's rich marine ecosystems. The strategy involves implementing sustainable waste management practices, promoting recycling, and encouraging reuse to minimize environmental impact. Key actions include coastal monitoring to track pollution levels, conducting comprehensive pollution assessments, and reviewing existing waste management systems to identify areas for improvement. It also involves implementing legal and technical solutions through close collaboration with local stakeholders, as well as capacity building programs and raising public awareness about marine conservation. In August 2021, a collaborative effort was initiated through the TouMaLi project, launched by the University of Rostock, the Leibniz Institute for Baltic Sea Research Warnemünde (IOW), the Arab Academy for Science, Technology, and Maritime Transport (AASTMT), and other partners. This project aims to combat tourism-related marine litter in Egypt, Morocco, Tunisia, and Algeria. Local partners include AASTMT and various Egyptian ministries, with approximately 4.2 million euros in funding from Germany's BMU, supported by ZUG gGmbH. Ultimately, this initiative is dedicated to advancing Sustainable Development Goal 14—life below water—by addressing the pressing issue of marine litter, especially plastics, to preserve ocean health for future generations.



TouMaLi research project (2021-2025)
TouMaLi research project (2021-2025)
TouMaLi research project (2021-2025)
TouMaLi research project (2021-2025)
Toumali partners
Toumali Pdf
Toumali.org
Parliament Committee Visits Alexandria's Beaches: Strengthening the Fight Against Marine Litter | toumali.org

Cooperation between the Arab Academy for Science, Technology & Maritime Transport (AASTMT) and the Lakes and Fish Resources Protection and Development Agency (LFRPDA)

In the framework of cooperation between the Arab Academy for Science, Technology & Maritime Transport (AASTMT) and the Lakes and Fish Resources Protection and Development Agency (LFRPDA), on 15 Jul. 2024, the College of Fisheries and Aquaculture Technology (CFAT) at AASTMT started to supervise three research projects supported by the General Fisheries

Commission for the Mediterranean (GFCM) of the Food and Agriculture Organization of the United Nations. These research projects focus on assessing fish stocks of economically significant species, including NIS in the Egyptian Mediterranean, monitoring discards, bycatch, and vulnerable species.



College of Fisheries and Aquaculture Technology-Alexandria | AASTMT