



الجمهورية التونسية
وزارة الفلاحة والموارد المائية والصيد البحري



Referat

21 AVR 2025

The second national Training on Ecohydrology and microplastic PLASTICTRAIN, in Tunisia

Main theme: Plastic monitoring of anthropized lagoons under climate changes effects-Case of Ghar El Melh DEMOSITE

Host: The National Institute of Marine Sciences and Technologies (INSTM), Tunisia

Partners: Institut de Recherche pour le Développement (IRD)
UNESCO-IHP, Ecohydrology (Paris, France)

Date: May 14th – 15th, 2025

Location: The National Institute of Marine Sciences and Technologies, Tunisia

Training rationale and objectives

In a context of rapid urbanization, plastic pollution constitutes one of the main contemporary environmental threats, seriously affecting marine and terrestrial ecosystems worldwide. This problem is closely linked to socio-economic growth, notably the intensification of human activities in coastal areas, which play a key role in local economies through tourism and fishing. However, plastic pollution in these regions not only threatens marine biodiversity, but also weakens the livelihoods of communities dependent on these ecosystems. Among these pollutants, microplastics (size $\varnothing < 5$ mm) are receiving particular attention due to their persistence in the environment, their ability to transport contaminants, and their integration into marine food webs. In the Mediterranean, plastic pollution is reaching worrying proportions; although it represents only 1% of global waters, the Mediterranean concentrates approximately 7% of microplastics produced globally.

In Tunisia, particularly in coastal areas with high anthropogenic pressure, studies on the distribution and characteristics of microplastics in hydrological-lagoon-coastal reservoirs, remain unknown, which hinders the understanding of local environmental impacts and curbs the development of appropriate Ecohydrological-based solutions.

The objectives of the PLASTICTRAIN course

The river downstream lagoons and salt lakes in Tunisia represent an important part of the coastal landscape and constitute most of the permanent natural water bodies in wetlands. These are remarkable for their biodiversity and their heritage importance, both natural and cultural. However, these ecosystems have long suffered from the harmful effects of various anthropogenic activities, such as excessive fishing, the discharge of domestic, industrial, agricultural and aquaculture waste and the construction of dams. These effects are further magnified by the impact of climate change. Ghar El Melh lagoon, situated in the Northeast of Tunisia and labelled UNESCO demosite, is experiencing an extremely rapid degradation of its environmental conditions: beach retreat, water quality deterioration, plastic pollution, marine submersion, biodiversity decrease, etc.

The objective of the proposed **PLASTICTRAIN training** course is to communicate about ecohydrological principles and practical solutions to preserve Ghar El Melh ecosystem throughout a trans disciplinary, scientific approach to achieve water quality and biodiversity monitoring, and sustainable development of activities in this demonstration site.

Topics

The training will be focused essentially on:

- The principle of the microplastic monitoring in marine and coastal environment
- In situ sampling and measurements
- The water quality monitoring and the field survey
- The microplastic identification in the marine ecosystems

Expected outcomes

- **Strengthen Scientific Expertise:** Provide participants with advanced knowledge and hands-on training in microplastic sampling, analysis, and ecohydrological mitigation approaches.
- **Enhance technical skills:** Develop participants' competencies in microplastic identification using stereomicroscopy and FTIR spectroscopy, ensuring precise characterization of pollutants in marine environments.
- **Promote data-driven environmental management:** Equip trainees with data collection and management skills to improve scientific reporting and inform marine conservation policies.
- **Foster an ecohydrological approach:** Explore how ecohydrological principles can help mitigate microplastic pollution by integrating natural water regulation processes into marine ecosystem management.
- **Support sustainable marine conservation:** Contribute to the long-term monitoring and reduction of microplastic pollution in Tunisia's coastal ecosystems through capacity-building and research-driven solutions.

Target group: The target candidates for this training course are early-career scientists working in the environmental, water and agricultural sector, institutions, non-governmental conservation organizations, protected areas authorities, central and local government.

The detailed agenda will be sent later to selected candidates.

Important dates: *27 April, 2025* deadline of the applications for the training course.

Application: CV & Motivation letter to be sent to Dr. Sana Ben Ismail



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