



# Goal 14 – Life Below Water



## Our Aim

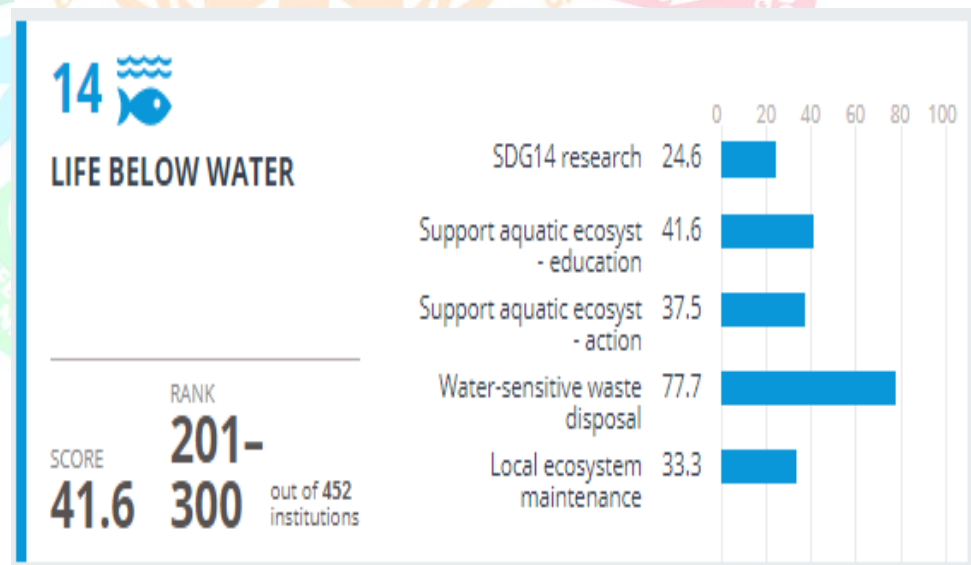
To demonstrate the commitment of AASTMT towards the UN 2030 Agenda, especially preserving the life below water goal (SDG14) through:

- Updating the educational programs to cope with the contemporary ocean-related concerns
- Encouraging research in the field of ocean sustainability and governance
- Community-based initiatives to enhance society's knowledge about pressures and challenges affecting life below water
- Encouraging participation in regional and international ocean-related events, gatherings, and consortiums

## Last Year Recorded

Worldwide 207

Egypt 4





## Our Progress through 20/21

### 14.1 AASTMT students' international achievements in serving SDG14

#### 14.1.1 Participation in the UN Food for All summit in Dubai EXPO-2022:

The inaugural Food for Future Summit & Expo and Global Agtech Expo saw 60+ world leaders, 150+ influential speakers, the world's top startups, innovators, and food revolutionaries unite to collectively inspire new Agtech and food tech solutions through innovative thinking, multi-disciplinary expertise, and collaborative action. The AASTMT team led by our student Moamen Sobh have presented Egypt at the UN – FAO – Enactus unique competition held on the 24<sup>th</sup> of February 2022. They provided two products that made an impact under the umbrella of Mycotech. Mycobrick, which is an organic building material. Mycobrick is classified as class A fireproof; it has no reliance on fossil fuel and is 60 times lighter than conventional brick. MycoPottain, a biodegradable pot that can be used in decoration, help plant nurseries and farmers in the transportation of the tiny seed from the pot to the soil; in addition, it can be used as a fertiliser for the soil after removing the paint and grinding it and friendly for the aquatic life if runoffs went to the sea.





### 14.1.2 Our students are representing Egypt in the UN Ocean Conference Youth and Innovation Forum:

Between June 24-26, 2022, the governments of Portugal and Kenya and the UN Global Compact organised the UN Ocean Conference Youth and Innovation Forum. Two of the AASTMT students were presenting Egypt in the forum. The Forum was an opportunity for youth to contribute to SDG 14 in alignment with the 2022 UN Ocean Conference theme: Scaling up ocean action based on science and innovation for implementing Goal 14: stocktaking, partnerships, and solutions. The Forum was a platform for ocean action and implementing youth-led solutions at scale to address SDG 14 target. The Forum sought to advance and inspire interdisciplinary thinking to address ocean challenges.



[https://aast.edu/en/sdg/goals.php?menutab=16&unit\\_item=1214&page\\_id=121400005](https://aast.edu/en/sdg/goals.php?menutab=16&unit_item=1214&page_id=121400005)

## 14.2 Teaching

### 14.2.1 Directing the graduation project topics in the relevant specialisations to serve SDG14:

On Sunday, 22 May 2022, during the AASTMT Industrial Advisory Committee (IAC) meetings, a group of students in the Department of Marine Engineering Technology of The College of Maritime Transport and Technology (CMTT) at the AASTMT headquarters in Abu Qir presented

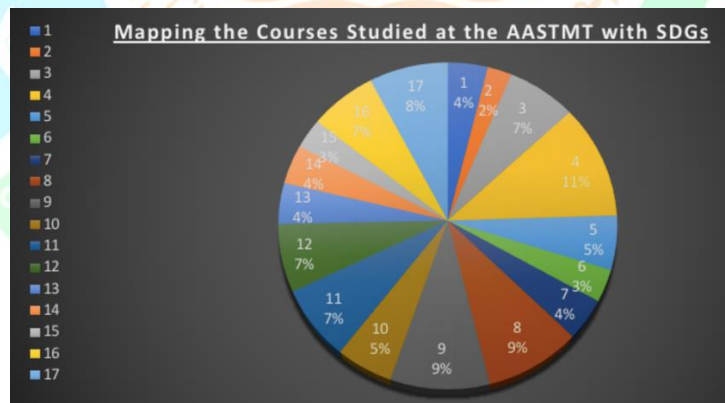


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their graduation project. Its theme was a land-based ballast water management system in the presence of their supervising lecturers, namely engineer Mustafa Abdul Ghaffar and engineer Mohammed Shawky. The presenters were Khaled Hazaa, Mustafa Hisham Qisheh and Youssef Sami, Youssef Hamed, Mohammed Khalil, Walid Mohammed, and Bilal Amer. The students did an exciting presentation reflecting their efforts on the global environmental issues related to marine life preservation in line with UN SDG 14 direction. The audience praised the marine environmental research figures for the students' practical experience, and the project results were shared with the attendees.



### 14.2.2 About 4% of the AASTMT courses are dedicated to covering SDG 14 aspects



[https://aast.edu/en/sdg/goals.php?menutab=3&unit\\_item=1214&page\\_id=121400007](https://aast.edu/en/sdg/goals.php?menutab=3&unit_item=1214&page_id=121400007)



## 14.3 Initiatives

### 14.3.1 AASTMT recycling program

AASTMT perceives the unfavourable effect of plastic waste, from creation through to removal. Plastic contamination can destructively affect Aquatic life, and the College is looking to diminish plastic use and wastage nearby. The accompanying activities have been received to advance this point with staff and understudies:

Single-use plastics in catering (food bundling, dispensable coffee cups, cutlery) have been supplanted with compostable catering supplies in all College food outlets to lessen plastic waste nearby.

Reusable cups are given to AASTMT staff during staff acceptances to decrease single-utilize dispensable cup wastage. These can likewise be bought from grounds retail outlets, and limits are offered to clients when reusable cups are used. Single-use cups cause an extra charge to urge a transition to reusable cups.

Conferencing and Occasions use reusable crystals to serve water, killing waste from recently used plastic-filtered water. The group also produces cleaned water nearby, further diminishing waste by evading the need to purchase indispensable water bundling. Water stations have been introduced all through the grounds for use by understudies and staff to support bottle reuse.

AASTMT intends to keep diminishing waste by investigating new items and administrations to help decrease plastics utilisation and waste. To achieve this, AASTMT adopted a garbage segregation strategy and has distributed categorized trash bins on all its campuses; the following pictures are from Abu-Qir Campus.

[http://www.aast.edu/en/research/contenttemp.php?page\\_id=47300116](http://www.aast.edu/en/research/contenttemp.php?page_id=47300116)





### 14.3.2 AASTMT Hosts International events that support ocean conservation

#### 14.3.2.1 IAMU AGA21 26<sup>th</sup> -28<sup>th</sup> October 2021

The 21st AGA and IAMUC 21 were hosted by the Arab Academy for Science, Technology, and Maritime Transport (AASTMT), in the beautiful city of Alexandria, Egypt. The theme of the AGA21 IAMUC is “Innovation and Sustainability of Maritime Industry in the Scope of **Blue Economy and Green Concept**”.

The 21st Annual General Assembly (AGA 21) is the International Association of Maritime Universities (IAMU) annual meeting. The IAMU Conference (IAMUC), held annually as part of the AGA, brings together experts and official representatives of IAMU member universities from all over the world to discuss, exchange, and share recent progress and future trends in maritime education, training, research and other matters within the scope of IAMU.

<https://aga21.aast.edu/en/home>





### 14.3.2.2 MARLOG 11 20th -22nd March 2022

The conference theme was “Towards a sustainable blue economy”. Blue economy seeks to promote economic growth while at the same time ensuring the environmental sustainability of the oceans and coastal areas. Blue economy has diverse components, including established traditional ocean industries such as maritime transport, fisheries, and new fields, such as offshore renewable energy, seabed extractive activities, aquaculture, and marine biotechnology.

The conference topics were:

- **Blue Economy** Management Technology
- Innovative investments in the blue economy
- **Blue economy:** Maritime transport and Ports services
- Smart innovations for the blue economy
- Challenges and opportunities of Blue Economy
- **Blue Economy:** Environmental Prospective

<https://marlog.aast.edu/archive/2022/en/home.html>

<https://marlog.aast.edu/archive/2022/en/introduction.html>

## 14.4 Research

### 14.4.1 TouMali research project

The overall project goal is to reduce the proportion of waste from coastal tourism in North-African states (Algeria, Egypt, Morocco and Tunisia) and to recycle and reuse the unavoidable waste to reduce overall marine and beach littering sustainably. Primary activities are the development and implementation of a coastal monitoring program; the definition of a pollution





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baseline as well as marine litter pollution assessments; the evaluation of solid waste management and current mitigation measures; the analysis, implementation and monitoring of legal, organisational, financial and technical solutions and measures with local, regional and national actors; and the provision of capacity building and awareness raising in the regions.



### 14.4.2 AASTMT funds research projects serving SDG14, like the “Blue Carbon project” (May 2021 - in progress)

Coastal ecosystems are critical to maintaining human well-being and global biodiversity. In particular, mangrove forests provide numerous benefits and services that are essential for climate adaptation and resilience, where it helps mitigate climate change by sequestering and storing significant amounts of carbon (blue carbon) from the atmosphere and oceans. To explicitly address the role of blue carbon ecosystems in climate change mitigation and human wellbeing through policy, regulatory, finance, or other mechanisms, the carbon stock in these ecosystems and the current or potential carbon emissions from changes to those ecosystems must be quantified. In light of the limited studies in the literature that connects the recent reliable estimates of carbon emissions and their relation to the mangroves on the Egyptian Red Sea coast, the overall objective of this project is to facilitate development in the area, restore mangrove ecosystems, enhance ecosystem services (including carbon sequestration), promote sustainable mangrove related income, and act as a model for future projects. This project aims to create a carbon inventory for mangrove beds at selected locations along the Red Sea coast of Egypt.

[https://aast.edu/en/scientific-research/projects/project.php?uid=16&proj\\_id=21](https://aast.edu/en/scientific-research/projects/project.php?uid=16&proj_id=21)





### **14.4.3 Knowledge exchange in sustainable Fisheries management and Aquaculture in the Mediterranean region**

FishAqu (Knowledge Exchange in sustainable Fisheries management and Aquaculture in the Mediterranean region) is a project, co-financed by the European Commission through the Erasmus+ programme, in the area of Capacity Building in the field of Higher Education.

The aim of the project is to develop capacities of practitioners and academics working on fisheries management and aquaculture in Egypt, in line with the directives of the Bologna process and the strategies of European Policy Cooperation (Education and Training 2020 framework) in order to launch a master degree programme on fisheries and aquaculture in Egypt.

Objectives are:

- initiate a masters degree study program competence-based curriculum in response to Egyptian Vision 2030 giving higher priority and importance to the sector of fisheries and its relation to Egyptian food security
- implement a new Collaboration Platform to support the learning and academic environments
- involve researchers and practitioners into communication and dissemination and establish their joint participation in the educational process and research
- upgrade facilities and services of Egyptian universities through modern equipment, international relations and student counselling/guidance
- improve the internationalisation and modernization of Egyptian universities in terms of research, scientific, technological and service (student counselling/guidance)
- integrate decision makers, academic staff, NGOs, labour marketing together.

[https://aast.edu/en/research/contenttemp.php?page\\_id=47300106](https://aast.edu/en/research/contenttemp.php?page_id=47300106)

### **Case Study: TouMaLi research project**

In August 2021, the University of Rostock and the Leibniz Institute for Baltic Sea Research Warnemünde (IOW), together with the Arab Academy for Science, Technology and Maritime Transport (AASTMT) and other partners including think tanks as well as universities and ministries from the project region, started a research project on Marine Litter caused by the tourism industry in Egypt, Morocco, Tunisia and Algeria called TouMaLi. Arab Academy for Science, Technology and Maritime Transport (AASTMT) participate in this research as the local project partner in Egypt. Complimentary the Egyptian Ministries for Environment, Local development



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and Tourism are involved. The project aims to develop and establish sustainable waste management solutions in the tourism sector to protect the marine ecosystems of the Middle East and North African (MENA) region. The German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) is funding the project with about 4.2 million euros from the "Funding Programme against Marine Litter". "Zukunft – Umwelt – Gesellschaft (ZUG) gGmbH" supports the Federal Ministry in implementing its funding policy aims.

The Mediterranean Sea is one of the most polluted marine environments in the world. According to the European Parliament, about 730 tonnes of litter are discharged daily, most of which consists of plastics. So far, monitoring of inputs and research on the exact impacts and long-term effects are limited. However, negative impacts on marine wildlife have already been proven.

The countries belonging to the MENA region, Egypt, Algeria, Morocco and Tunisia, have a very high plastic waste generation. This is partly caused by tourism, which significantly contributes to local waste generation. A consortium of ten institutions from science think tanks and private companies will address this challenge in the TouMaLi research project. The German partner consortium includes next to the University of Rostock and the Institute for Baltic Sea Research, also three companies with an excellent reputation, named Adelphi gGmbH, BlackForest Solutions and the Landbell Group. The project's objective is to minimise the share of tourism waste in the target regions. This will be achieved by implementing the framework conditions needed to avoid and recycle waste as much as possible, thereby sustainably reducing the total amount of marine litter.

Therefore, the project's subject is developing an assessment system for marine litter pollution based on monitoring beach litter and evaluating current waste disposal. Adding to that is the analysis, implementation and monitoring of legal, organisational, financial and technical solutions and measures with local, regional and national actors. Awareness-raising is another crucial activity to achieve long-term, self-sustaining monitoring by local actors.

The project implementation focuses on designated pilot regions in the project countries, which are to become exemplary for more comprehensive national implementation after the end of the project.

AASTMT, as the academic and scientific arm of the Arab League with seven sites in Egypt and the headquarter located in Alexandria, the most populated touristic city on the Mediterranean, is



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looking forward to effectively cooperating with the University of Rostock and all partners to achieve the different objectives and outcomes of the project. We target to involve all national stakeholders in the tourism and waste management sector for the project's great success. Additionally, all national and international stakeholders engaged in the area that aims to target the issue of marine litter are invited to participate in the project activities.



In March and April 2022, the Arab Academy and the IOW teams, supported by several local students and volunteers, surveyed several beaches around Alexandria and Marsa Matruh. The beaches sampled were a mix of private and public beaches. Furthermore, marinas were also examined to gain more knowledge about the overall pollution status and to assess litter emissions. Regarding beach pollution, more than 25.000 litter pieces were collected and analysed. A preliminary assessment of the sources of pollution indicates that many of the plastic bags, candy wrappers, straws and food packaging originate from tourism and beach users.



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<https://toumali.org/en/partners>

[https://toumali.org/sites/toumali.org/files/documents/toumali\\_factsheet\\_eng.pdf](https://toumali.org/sites/toumali.org/files/documents/toumali_factsheet_eng.pdf)

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<https://toumali.org/en/node/126>

