

SDG PROGRESS REPORT

on **SDG-14 LIFE BELOW WATER**



SDG PROGRESS REPORT

ISTANBUL MEDENIYET
UNIVERSITY

**Istanbul Medeniyet University
Sustainability Office**

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SDG Icons

<https://www.un.org/sustainabledevelopment/news/communications-material/>

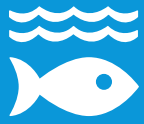
Sustainable Development Report Maps

<https://dashboards.sdgindex.org/profiles/turkey>

SDG Statics

<https://unstats.un.org/sdgs/report/2023/progress-midpoint/>

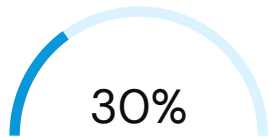
<https://sdgs.un.org/goals>



The world's oceans – their temperature, chemistry, currents and life – drive global systems that make the Earth habitable for humankind. How we manage this vital resource is essential for humanity as a whole, and to counter balance the effects of climate change. Over three billion people depend on marine and coastal biodiversity for their livelihoods. However, today we are seeing 30 percent of the world's fish stocks overexploited, reaching below the level at which they can produce sustainable yields.

Oceans also absorb about 30 percent of the carbon dioxide produced by humans, and we are seeing a 26 percent rise in ocean acidification since the beginning of the industrial revolution. Marine pollution, an overwhelming majority of which comes from land-based sources, is reaching alarming levels, with an average of 13,000 pieces of plastic litter to be found on every square kilometre of ocean.

The SDGs aim to sustainably manage and protect marine and coastal ecosystems from pollution, as well as address the impacts of ocean acidification. Enhancing conservation and the sustainable use of ocean-based resources through international law will also help mitigate some of the challenges facing our oceans.



30% ocean water is 30% more acidic than pre-industrial times

200.000 SPECIES

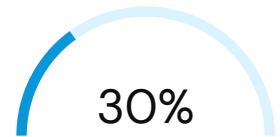
number of species found to live in the oceans



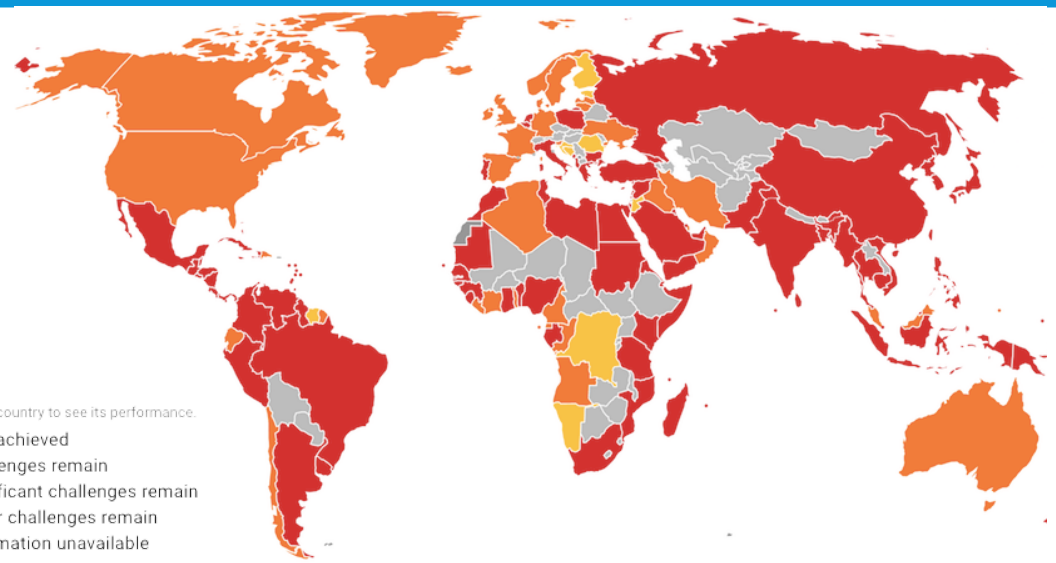
1 in 5 fish caught comes from illegal fishing

3 BILLION

people depend on marine and coastal biodiversity for their livelihoods



30% of carbon dioxide produced by humans is absorbed by the ocean

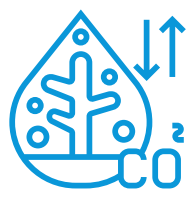


Legend
Click on a country to see its performance.
● SDG achieved
● Challenges remain
● Significant challenges remain
● Major challenges remain
● Information unavailable

3 R&D LABS are researching aquatic ecosystem damage prevention



filtering systems for wastewater



transnational ocean biodiversity research

1 R&D LAB is researching for maintaining aquatic ecosystems and their biodiversity



reduce plastic waste to prevent pollution of water ecosystems



Water Discharge Guidelines and Standards

Istanbul Medeniyet University cleans the wastewater inside the campus areas using certain **filtering systems** before discharging it. For instance, we have oil filters installed in the dishwashing sites in our campus kitchen and other facilities to prevent the oily wastewater from polluting the discharged water. These filters are regularly cleaned and the oil waste collected are delivered to ISTAC Inc., an affiliation of Istanbul Metropolitan Municipality that is in charge of waste management.

Wastewater from campus use is collected by the **wastewater network** and dispatched to the treatment facilities of Istanbul Water and Sewerage Administration (İSKİ), which is in charge of treating wastewater using various systems from preliminary treatment to advanced biological treatment so that wastewater is eliminated without environmental damage and water resources, Istanbul Strait, and the Marmara Sea are protected from the threat of wastewater.

Actions to Reduce Plastic Waste

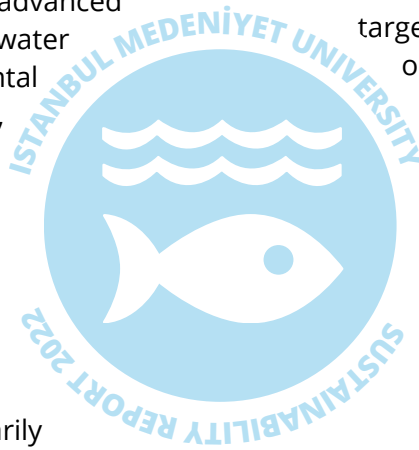
Istanbul Medeniyet University primarily follows a policy of reducing consumption to reduce waste. Therefore, certain strategies have been implemented to gradually **reduce single-use plastics in the campus areas**. For instance, our contract with the catering service provider for our lunch services contains a clause on serving meals in chinaware and using metal cutlery. Thanks to these practices, we prevent the use of single-use plastics in eating utensils and thereby reduce plastic waste generation in all our campus areas.

In 2019, Istanbul Medeniyet University joined the "Zero Waste" program carried out under the auspices of the Presidency of the Republic of Turkey as part of the **"Zero Waste Regulation"** to contain waste in line with the sustainable development goals and to leave a clean Turkey for future generations. Issues such as reducing the generation of waste and chiefly of plastic, which greatly damages aquatic, terrestrial, and aerial ecosystems, and recycling plastic waste

form an integral part of our university's vision. In this context, we removed the waste bins from the university's indoor areas and started to collect and sort recyclable waste and chiefly plastic waste in six categories. Plastics that are thus saved from becoming garbage are delivered to the relevant municipal authorities for recycling.



Istanbul Medeniyet University carries out practices that will contribute to the plastic reduction targets throughout Turkey. For example, in order to contribute to the goal of the **Packaging Waste Control Regulation** of 2017, which aims to reduce the annual use of plastic bags per capita by no more than 40, cloth bags are distributed to our staff members, which can be used as an alternative to plastic bags, every year.



IMU Cloth Bags Distributed to Our Staff Members

“**1342**
CLOTH BAGS
distributed to staff members to
reduce using plastic bags”

Thanks to all such measures to reduce plastic use and waste, IMU aims to prevent plastics from polluting natural areas and water resources and thus to avoid the death of organisms in the aquatic ecosystem due to plastics and microplastics.

Istanbul Medeniyet University Sustainability Office organized a social responsibility project that lasted throughout July to lead people to reduce the amount of plastic waste they produce and live a plastic-free life. Various events organized throughout the month aimed to help people gain habits that will reduce the amount of plastic waste in their daily lives.

Within the scope of these events, IMU Sustainability Office invited people to a month-long **Plastic Free July Challenge** to eliminate single-use plastic products from their lives by making them aware of the amount of plastic waste they produce. In the challenge, information was given every day about the recycling status of a single-use plastic product in our daily lives, and the amount of waste it creates globally. Following each post sharing on the office's social media account, people were offered alternatives that they could use instead of that particular product, with natural ingredients and packaging that do not produce plastic waste. On certain days of the challenge, the Office encouraged people to take the first step towards a plastic-free life by various events such as offering people who brought their own reusable cups free coffee and tea and handing out waxed fabrics by collaborating with Mumowrap. With this project, the Sustainability Office challenged our campus community to remove single-use plastics from their lives and challenged the entire public through social media by saying "Are you up for a plastic-free life?" and invited everyone to a plastic-free life starting from this month. Thus, via the events organized, both awareness was raised on waste management and a social change was initiated through changes in consumer habits.

In addition to posts shared on social media, the Sustainability Office hosted Prof.Dr. Murat KAZANCI, who is a faculty member of IMU Biomedical Engineering Department and working on producing different alternatives to plastic, as the speaker in the online seminar "**Manufacturing and Development of Ecofriendly Bioplastics as an Alternative to Petrochemical Products**", which was open to public participation.

In the seminar participants were informed about various bioplastic materials manufactured from organic substances which can prevent plastic waste generation to reduce ecological footprint and be used as alternatives to plastics. The potential contribution of bioplastic use to waste management process and ecological cycle by reducing pollution was also discussed.

Also, the current situation in global plastic pollution was pointed out by giving statistics such as an average of one trillion plastic bags are manufactured around the world each year and 79% of the plastics are non-recyclable. The consequences of unrecycled plastics were also underlined by mentioning that they find their way to the seas and oceans, creating gigantic waste islands. The projects conducted in IMU in bioplastic manufacturing were introduced in the last part of the seminar.

The "Plastic-Free July" events organized by the Sustainability Office was ended by sharing informative content that evaluated the effects of habit changes for a plastic-free life for a month on global warming, oceans and seas and landfill and invited people to maintain these habits throughout their lives.



PLASTICFREE July

20 Challenge a friend to go plastic free

21 Get your drink in a reusable cup

22 Prefer a plastic-free bamboo pen or pencil

23 Switch to bar soap instead of plastic-wrapped liquid soap

24 Decline plastic straws or prefer reusable straws

25 Use wooden or bamboo cloth pins instead of plastic ones

26 Choose food without plastic wrap

27 Shop with your own reusable containers from waste-free stores

28 Lunch in your own reusable container

29 Prefer non-plastic eco-friendly bags for your shopping

30 Choose paper/fabric options to protect your food

31 Measure the impact of your change and keep living plastic-free!

July 2022

IMU "PlasticFree July" Challenge

PLASTICFREE July

Get your drink in a reusable cup

Prefer a plastic-free bamboo pen or pencil

Switch to bar soap instead of plastic-wrapped liquid soap

Decline plastic straws or prefer reusable straws

Use wooden or bamboo cloth pins instead of plastic ones

Choose food without plastic wrap

Shop with your own reusable containers from waste-free stores

Lunch in your own reusable container

Prefer non-plastic eco-friendly bags for your shopping

Choose paper/fabric options to protect your food

31 July 2022

IMU "Plastic Free July" Impact Assessment List



Istanbul Medeniyet University leads numerous public institutions, research institutions, universities, local schools, and NGOs toward numerous goals that would help us achieve the objective of conserve and sustainably use the oceans, seas and marine resources for sustainable development.

Leading the Technologies towards Aquatic Ecosystem Damage Prevention

Developing technologies to prevent aquatic ecosystem damage is an important field for our institution. In this context, IMU Science and Advanced Technology Application and Research Center (IMU BILTAM) contains two [R&D Laboratories](#) researching the technologies that can prevent the aquatic ecosystem pollution and reduce the aquatic ecosystem damage.

An R&D laboratory was established under leadership of Prof.Dr. Erkan ŞAHİNKAYA to conduct research on the optimization of the simultaneous nitrification and denitrification process in an intermittently aerated membrane bioreactor to treat wastewater.

BILTAM also has another R&D laboratory led by Asst.Prof.Dr. Senem TEKSOY BAŞARAN, conducting research on maximizing energy conservation potential by wastewater treatment and organic matter recovery with super fast membrane bioreactor (SFMBR) process.

Maintaining Ecosystems and their Biodiversity

Protecting and maintaining ecosystems and biodiversity is crucial for the Earth's future. Being aware of the importance of the issue, our university established an [R&D laboratory](#) in BILTAM under the leadership of Prof.Dr. Turgay ÇAKMAK to conduct research on determining the coastal microalgae and cyanobacterial diversity of Horseshoe island, creating a culture collection, and evaluation of the general biotechnological characteristics of cultured species.

Technologies Towards Aquatic Ecosystem Damage Prevention

Prof.Dr. Erkan ŞAHİNKAYA, a faculty member of IMU Bioengineering Department, served as a consultant in the design and planning of the DOSAB **wastewater recycling facility** in the scope of engagement with the industry on developing technologies towards aquatic ecosystem damage prevention and contribute to protection of seas and streams and the life inside. DOSAB Wastewater Recycling Facility received the **best application award** in the 'Be Friends with the Environment Good Application Awards Competition' organized by Bursa Metropolitan Municipality in 2022 in order to highlight the good applications in the field of environment and to increase environmental awareness. Water scarcity and increasing water pressure in the world have brought the recycling of wastewater and the use of these waters as a new resource to the agenda.

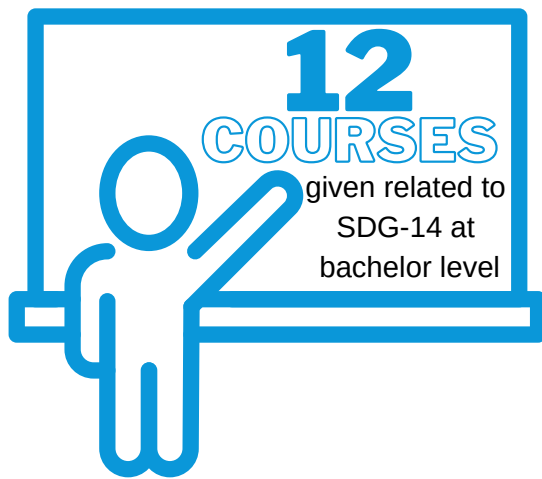
One of the most effective methods for water sustainability is Wastewater Recycle Systems. With the help of these systems, purified wastewater from enterprises and treatment plants can be brought to a quality that can be reused in enterprises by using advanced treatment techniques. Thanks to this facility, within a year; nearly 4 million cubic meters of treated water is put into production again, protecting underground water resources, standing out as environmentally friendly and sustainable production, and making participating companies preferred in the international arena.



DOSAB Wastewater Recycling Facility

LEARNING

Learning processes are key in achieving SDGs. Thus, universities play a critical role both by training professionals who will prioritize SDGs in their future practices and by increasing local, national, and global capacity to successfully achieve SDGs. As Istanbul Medeniyet University, we are aware of our critical role and therefore, we primarily inform our students, the leaders and decision-makers of the future, about the Sustainable Development Goals through course contents, co-curricular activities and student club activities and strengthen their awareness. For this purpose, each of our faculties and departments prepares SDG-related course contents, including courses that address the Sustainable Development Goals holistically, as well as specific contributions that can be made by the expertise of the relevant professional field in which they provide training. In 2022, 12 bachelor degree courses related to SDG-14 were given at IMU. Some of these are listed below.



Faculty	Course
Arts and Humanities	FEL458 - Bioethics and Environmental Philosophies
Education Sciences	SNE009 - Environmental Education
Engineering and Natural Sciences	INS058 - Water Resources Engineering
	INS461 - Water Supply and Environmental Health
	BYM416 - Micropollutants, Treatment and Effects on Human Health
Law	HUK342 - Environmental Law
Political Sciences	ULİ462 - Environmental Problems and the World
Tourism	TİŞ224 - Sustainable Tourism

IMU Cinema Club and Psychology Club Social Responsibility Team collaborated in organizing a **documentary screening** in our Aşık Paşa Conference Hall on April 27, 2022 to discuss the human impact on marine life. The participants of the event watched the documentary [“Seaspiracy”](#) about global destruction of the oceans directed by Ali Tabrizi, who started off with plastic waste in the seas and has brought to light many other problems in our seas in his research. The documentary screening aimed to instill awareness in our students toward nature and particularly toward understanding life from the perspective of marine species. “There is a garbage truck load of plastic dumped every minute into the ocean and over 150 billion tonnes of microplastics are already there – they [the microplastics] now outnumber the stars in the milky way.” is one of the claims of the documentary to draw attention to marine pollution. The documentary reveals that most of the plastic danger is caused by fishing nets regularly discarded into the sea as a result of fishing activities, highlighting that 46 percent of waste in the Great Pacific Garbage Patch is made up of fishing nets. Another point underlined in the documentary is the claim of an article published in Science journal in 2006 that the species richness in the oceans and seas will decline due to destructive fishing and that “the oceans will be empty of fish by 2048”. Following the screening, the audience shared their thoughts with the awareness they gained and made a psychological evaluation of the movie. The discussion led all to the same crucial conclusion: it is a duty for all of us to protect seas and oceans and create a more sustainable world!



The academic staff members of our university carry out research on reducing marine pollution; protecting and improving marine and coastal ecosystems; minimization of ocean acidification; sustainable fishing; conservation of coastal and marine areas; eliminating subsidies that contribute to overfishing; increasing the economic benefits from the sustainable use of marine resources; increasing scientific knowledge, research, and technologies on ocean health; supporting small-scale fishers; and implementing the international law of sea, publish the results of their research and share them with other researchers, decision-makers, stakeholders, and the public as a foundation for policies toward achieving SDGs.

The project titled **[“Determination of Horseshoe Island Coastal Microalgae and Cyanobacteria Diversity, Creation of Culture Collection and Evaluation of General Biotechnological Characteristics of Cultured Species”](#)**

led by Prof.Dr. Turgay ÇAKMAK, faculty member of the Faculty of Engineering and Natural Sciences at IMU is supported by TUBITAK as part of 1001 TUBITAK Industrial R&D Projects Support Program. With their high bioenergy output and value-added chemical compounds, microalgae have great potential for the biotechnology industry. Their fast adaptation ability facilitated them to rule several ecosystems including freshwater, marine, brackish, and alkaline water systems, hot spring water resources, caves, and deserts where light and water present. Covered by snow and glaciers which represents one of the hardest environmental conditions for living organisms, Antarctica is not an exception and hosts several algal species. This research aims to understand the distribution and composition of the snow microalgae of Dismal Island (68°05'S-68°51'W) and Horseshoe island (67°51'S-67°12'W), to create a psychrophilic- psychrotolerant microalgae culture collection, and to determine the general biotechnological properties of the isolated strains. The microalgae culture collection purified within the scope of the project and preserved by cryopreservation was made available on a website (www.imuasya.org).

