PRU
PÎRÎ REİS UNIVERSITY

2025

SUSTAINABLE DEVELOPMENT GOALS REPORT

14 LIFE BELOW WATER

SDG 14

Life Below Water

2024–2025 Academic Year and 2025 Financial Year



Piri Reis University
sustainability.pirireis.edu.tr

PRU
PÎRÎ REİS UNIVERSITY

PUBLICATION
Piri Reis University
SDG 14: Life Below Water Report
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SCOPE
2024-2025 academic year and 2025 financial year (1 September 2024 – 31 December 2025); ongoing practices are also covered.

COMPANION PUBLICATIONS
Piri Reis University Sustainability Report 2025 and the other 16 SDG reports prepared according to the THE Impact Rankings indicators.

PREPARED BY
Sustainability Research and Application Center
Directorate of Quality and Strategy Development

LAYOUT AND VISUAL DESIGN
Directorate of Information Technologies

CONTACT
Postane Mah. Eflatun Sk. No:8, 34940 Tuzla / Istanbul, Türkiye
bilgi@pirireis.edu.tr · +90 216 581 0050

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This report presents Piri Reis University's policies, practices, research and activities under SDG 14, structured according to the THE Impact Rankings indicators and supported by evidence. Links in the indicator section lead to publicly available evidence; internal documents are available on request.



INSTITUTIONAL PROFILE

Piri Reis University at a Glance

Piri Reis University (PRU) is a foundation university established by the Turkish Maritime Education Foundation (TÜDEV), which was founded in 1993 by leading representatives of the maritime sector with the support of the İMEAK Chamber of Shipping; the University acquired legal personality upon the publication of Law No. 5733 in the Official Gazette on 8 February 2008. Its roots go back to the TÜDEV Maritime Education Centre, which trained 2,034 officers between 1995 and 2012.

Guided by its vision "to be a specialised university that is a pioneer in Türkiye and respected worldwide, adding value to the sector by striving for excellence in education and research in every maritime-related field", PRU explicitly commits in its mission to educating individuals who have embraced the Sustainable Development Goals; "Social Responsibility, Sustainability and Environmental Awareness" and "Respect for Diversity and Human Rights" are among the institution's core values.

The University provides education through its Faculties of Maritime Studies, Engineering, Economics and Administrative Sciences, Law, and Arts and Sciences, its Maritime Vocational School and its Graduate Institute, on the Sea Campus and the Preparatory Campus on the Marmara Sea coast in Tuzla. The Sea Campus was designed as a BREEAM-certified "Green Campus" and features a trigeneration plant, greywater and rainwater recovery systems and seawater-based cooling infrastructure.

PRU is the only Turkish foundation university that is a member of the International Association of Maritime Universities (IAMU). It was granted institutional accreditation under the YÖKAK Institutional Accreditation Programme on 21 March 2025, and its Maritime Simulators Centre was accredited by The Nautical Institute as an approved Dynamic Positioning (DP) Training Centre on 22 October 2024.

Piri Reis University in Numbers

6,330
total students (2025): 2,171 associate degree, 4,004 undergraduate, 155 postgraduate

210
full-time academic staff (+109 hourly-paid lecturers)

168
full-time administrative staff

5 + 1 + 1
faculties, vocational school and graduate institute

15
maritime simulators (including 3 full-mission bridges)

6
research and application centres (PRUSAM, DENEKAM, PUSEM, etc.)

42
student clubs, 1,996 club members

5 + 4
national and international patent applications in 2025

29%
share of women among students placed in 2025-26 (2014-15: 14%)

Source: Institutional Self-Evaluation Report (KİDR) 2025 (as of 31 December 2025) and sustainability.pirireis.edu.tr. The share of women is based on the table of placed students published on the sustainability website.

SUSTAINABILITY GOVERNANCE

Our Sustainability Approach and Reporting

Piri Reis University's 2023-2027 Strategic Plan is structured in alignment with the United Nations Sustainable Development Goals (SDGs). For each SDG, the sustainability website publicly sets out the links with the Strategic Plan objectives (excellence of the learning environment, research quality, industry–university cooperation, institutional culture and becoming the best university in maritime) together with additional actions.

The Sustainability Research and Application Center (PRUSAM), established in 2024, works on energy management, decarbonisation, sustainable port operations and digitalisation in line with Net Zero targets; the Center's regulation lists the preparation of the sustainability report and similar outputs among its duties. The Social Contribution Commission, chaired by the Rector, and the Quality Coordination Office contribute to monitoring sustainability activities and disseminating them across the institution.

The University's Climate Change Mitigation and Action Policy Document (2023-2027) sets out the goal of becoming a carbon-neutral university by 2050. Campus operations are assured through the ISO 50001:2018 Energy Management System (2024-2027), the ISO 9001:2015 Quality Management System and the Zero Waste Certificate (February 2025).

PRU took part in the Times Higher Education (THE) Impact Rankings 2025 with all 17 SDGs and was placed in the 1501+ band overall. Its strongest results were in SDG 14 Life Below Water and SDG 15 Life on Land (401–600), followed by 601–800 in SDGs 6, 8, 12 and 16, 801–1000 in SDGs 5, 9, 11 and 13, 801+ in SDG 2, 1001+ in SDGs 1, 7 and 10 and 1501+ in SDGs 3, 4 and 17. This report series has been prepared separately for all 17 SDGs based on the THE Impact Rankings indicators and is published together with the general Sustainability Report.

Scope of this report

- Reporting period: 2024-2025 academic year and 2025 financial year (1 September 2024 – 31 December 2025). Ongoing practices are also covered.
- Scope: Sea Campus and Preparatory Campus; all academic and administrative units, research centres and student clubs.
- Data sources: activities published on sustainability.pirireis.edu.tr, pirireis.edu.tr and unit subdomains, KİDR 2025, the 2023-2027 Strategic Plan, institutional directives and policies, and final reports of Scientific Research Projects (BAP).
- Structure: Indicators are organised according to the THE Impact Rankings methodology; publicly accessible evidence links are provided under each indicator.

SDG 14 · LIFE BELOW WATER

A university of the seas: protecting marine ecosystems and greening maritime

For PRU, a university founded for maritime education with its campus on the coast of the Sea of Marmara, SDG 14 lies at the heart of its institutional identity. The University carries out education, research and social contribution activities in monitoring and preventing marine pollution, reducing the environmental impacts of maritime activities and increasing ocean literacy in coastal communities.

PRU contributes to the spread of environmentally friendly behaviour in coastal communities through the LEARN4SEA project (2024-2026, five partners) supported by the Interreg NEXT Black Sea Basin Programme, and to the development of green skills in European ports through the Erasmus+ GREENPORT Alliances project (€1.39 million), which it coordinates. On Marmara Sea Day, Underwater Technology programme students and volunteer divers collected underwater litter on the Tuzla coast.

On the research side, topics studied include mucilage formation in the Sea of Marmara (TÜBİTAK 1001 and BAP-2024-08), the detection and removal of heavy metals in seawater, the cleaning of marine surface litter with autonomous vehicles (TÜBİTAK 1501), the recovery of ship exhaust waste heat and sustainable fishing tourism. PRU was placed in the 401-600 band for SDG 14 in the THE Impact Rankings 2025.

35
related activities and practices (all periods)

24
activities in the reporting period (Sep 2024 – Dec 2025)

25
related research projects (BAP, TÜBİTAK, EU)

401–600
THE 2025 SDG 14 band

Highlights of the period

- LEARN4SEA (Interreg NEXT Black Sea) and GREENPORT Alliances (Erasmus+, coordinated by PRU)
- Underwater litter collection on the Tuzla coast with 20 volunteer divers on Marmara Sea Day (1 June 2025)
- TÜBİTAK and BAP projects on mucilage, heavy metals and marine surface litter
- THE Impact Rankings 2025 SDG 14: 401-600 band

THE IMPACT RANKINGS INDICATORS

Indicators, Explanations and Evidence

This section summarises Piri Reis University's policies, practices and activities against the indicators of the Times Higher Education (THE) Impact Rankings methodology for SDG 14. Evidence for each indicator is provided with links.

14.2 Education on aquatic ecosystems

14.2.1 Education on aquatic ecosystems

Experts from the Maritime Vocational School's Underwater Technology programme provided diving training to 15 staff and 63 students (78 people in total). The Faculty of Maritime Studies' education, delivered to IMO STCW standards, covers the protection of the marine environment (MARPOL). The event "Seas of Türkiye and Blue Heritage" and the "Diving at 100 Points in 100 Years" project raised awareness of marine ecosystems.

EVIDENCE

- Diving training for staff and students – https://sustainability.pirireis.edu.tr/etkinlikler/personel-ve-ogrencilere-dalis-egitimi-2/
- "Turkish Seas and Blue Heritage" Event Held (2 May 2025) – https://sustainability.pirireis.edu.tr/etkinlikler/turkiye-denizleri-ve-mavi-miras-etkinligi-gerceklestirildi/
- Diving at 100 sites in 100 years – https://sustainability.pirireis.edu.tr/etkinlikler/100-yilda-100-noktada-dalis/
- Internationalisation – https://pirireis.edu.tr/hakkimizda/uluslararasilasma/

14.2.2 Education on sustainable fisheries and tourism

Project BAP-2024-07 examined the sustainability of traditional fishing and gastronomy tourism opportunities through fieldwork in seven fishing villages. Faculty of Engineering students received an award for a fishing vessel design at the 13th National Ship and Yacht Design Competition.

EVIDENCE

- Seafood and culinary heritage in fishing villages: sustainable gastronomic tourism opportunities – https://sustainability.pirireis.edu.tr/etkinlikler/balikci-koylerinde-deniz-urunleri-ve-lezzet-mirasi-surdurulebilir-gastronomik-turizm-firsatlari/
- 13th National Ship and Yacht Design Competition concluded (6 December 2024) – https://muhendislik.pirireis.edu.tr/haberler/13-ulusal-gemi-ve-yat-tasarim-yarismasi-sonuclandi/

14.3 Actions to protect aquatic ecosystems

14.3.1 Events to conserve marine and water resources

On 1 June 2025, as part of Tuzla Municipality's Marmara Sea Day, Underwater Technology students and 20 volunteer divers collected underwater solid waste on the Tuzla coast. Within LEARN4SEA, a Clean Sea Session, a marine drone demonstration and stakeholder events were organised.

EVIDENCE

- Marmara Sea Day sea clean-up (1 June 2025) – https://pirireis.edu.tr/haberler/piri-reis-universitesi-marmara-deniz-gunu-kapsaminda-deniz-temizligi-etkinligine-katildi/
- Social Contribution – Events – https://pirireis.edu.tr/hakkimizda/toplumsal-katki/etkinlik/
- Clean Sea session (16 May 2025) – https://prusam.pirireis.edu.tr/etkinlikler/temiz-deniz-oturumu/
- Marine drone demonstration (11 April 2025) – https://prusam.pirireis.edu.tr/etkinlikler/deniz-dronu-demonstrasyonu/

14.3.3 Conservation of aquatic biodiversity

LEARN4SEA carries out joint learning activities aimed at protecting biodiversity and reducing pollution in the Black Sea.

EVIDENCE

- LEARN4SEA (15 January 2025) – https://sustainability.pirireis.edu.tr/etkinlikler/learn4sea/

14.3.4 Work to reduce the environmental impact of maritime activities

GREENPORT Alliances (Erasmus+, coordinated by PRU) targets green skills and emission reduction in port services and was presented at the European Shipping Summit in Brussels in March 2025. The Green Fuels for Green Shipping workshop and the Green Transformation in Maritime Summit addressed alternative fuels.

Under the BAP programme, an Organic Rankine Cycle using ship exhaust waste heat, the reduction of ship resistance with hull ducts and the electrification of small boats (MAR-DEC) have been developed.

EVIDENCE

- GREENPORT Alliances – European Shipping Summit (March 2025) – https://pirireis.edu.tr/haberler/greenport-alliances-projesi-avrupa-denizcilik-zirvesinde-yerini-aldi/
- Green Fuels for Green Shipping workshop (20-21 March 2025) – https://pirireis.edu.tr/haberler/green-fuels-for-green-shipping-sempozyumu-piri-reis-universitesinde-gerceklestirildi/
- 2nd Green Transformation in Maritime Summit (24 December 2025) – https://pirireis.edu.tr/haberler/ii-denizcilikte-yesil-donusum-zirvesi-piri-reis-universitesinde-gerceklestirildi/
- Scientific Research Projects (BAP) – https://pirireis.edu.tr/hakkimizda/projeler/bilimsel-arastirma-projeleri/

14.4 Marine- and water-sensitive waste management

14.4.1 Water discharge and pollution prevention

On campus, greywater and rainwater are treated and reused, fats in kitchen wastewater are retained by grease separators, and hazardous waste is collected separately at source in accordance with the Waste Directive.

Seawater used for cooling in the trigeneration system is returned to the sea without chemical additives under the deep-sea discharge project approval of 14 March 2024. The Continuous Wastewater Monitoring System (SAİS) cabin at the discharge point continuously measures pH, temperature, dissolved oxygen, conductivity and flow and transmits the data online to the Ministry of Environment, Urbanisation and Climate Change.

EVIDENCE
- Treatment system – https://sustainability.pirireis.edu.tr/etkinlikler/aritma-sistemi-2/
- Grease separator – https://sustainability.pirireis.edu.tr/etkinlikler/yag-ayirici/
- Waste Directive – https://pirireis.edu.tr/wp-content/uploads/2026/06/PIRI-REIS-UNIVERSITESI-ATIK-YONERGESI.pdf
- Internal document: SAİS cabin photos and deep-sea discharge approval (available on request)

14.4.3 Commitment to protecting the seas

The Climate Change Mitigation and Action Policy Document covers SDG 14; the SDG 14 target page on the sustainability website defines additional actions such as reducing marine pollution, marine protected areas and beach clean-ups.

The Waste Management Policy (POL.KLT.08, 15 September 2025) commits to protecting the seas, water resources and natural ecosystems in waste management.

EVIDENCE
- Climate Change Mitigation and Action Policy Document (2023-2027) – https://sustainability.pirireis.edu.tr/wp-content/uploads/2024/11/Iklim-Degisikligi-Mucadelesi-ve-Eylemi-Politika-Belgesi.pdf
- SDG target pages on the sustainability website – https://sustainability.pirireis.edu.tr/ska/
- Waste Management Policy (POL.KLT.08) – https://sustainability.pirireis.edu.tr/politika/atik-yonetimi-politikasi/

14.5 Protection of local aquatic ecosystems

14.5.2 Monitoring the health of aquatic ecosystems

A TÜBİTAK 1001 project examined the interaction of maritime transport and fishing in mucilage formation in the Sea of Marmara, and project BAP-2024-08 is investigating mucilage parameters in a controlled environment. BAP projects have developed a fluorescence sensor measuring iron ions in seawater and studied the removal of dyes and heavy metals from seawater in the Tuzla shipyard area.

EVIDENCE
- TÜBİTAK Projects – https://pirireis.edu.tr/hakkimizda/projeler/tubitak-projeleri/
- Scientific Research Projects (BAP) – https://pirireis.edu.tr/hakkimizda/projeler/bilimsel-arastirma-projeleri/

14.5.4 Community collaboration for aquatic ecosystems

Joint activities for the protection of marine ecosystems have been carried out with Tuzla Municipality, the Union of Marmara Municipalities and the LEARN4SEA partners (CERONAV-Romania, BDCA-Bulgaria, LEPL NEA-Georgia and Shabla Municipality).

EVIDENCE
- Social Contribution – Events – https://pirireis.edu.tr/hakkimizda/toplumsal-katki/etkinlik/

ACTIVITIES AND EVENTS

Our Activities under SDG 14



2nd Green Transformation in Maritime Summit Held at Piri Reis University!

24 December 2025

The 2nd Green Transformation in Maritime Summit, organised by the İMEAK Chamber of Shipping, was held on 24 December 2025 in the Rıdvan Kartal Conference Hall of Piri Reis University. Addressing sustainability, green transformation and carbon-neutral targets in the maritime sector, the summit brought together representatives of the public sector, academia and industry.

SDG 7 SDG 9 SDG 13 SDG 14

Source: https://sustainability.pirireis.edu.tr/etkinlikler/ii-denizcilikte-yesil-donusum-zirvesi-piri-reis-universitesinde-gerceklestirildi/



Various Dimensions of the Law of the Sea Decisions

2 October 2025 • Faculty of Law

The International Symposium on “Various Dimensions of Law of the Sea Decisions”, to be jointly organised on 2 October 2025 by our University’s Faculty of Law and the Ankara University National Research Center for the Law of the Sea, will be held in person in the Seminar II hall of the Piri Reis University Sea Campus.

SDG 14 SDG 16

Source: https://hukuk.pirireis.edu.tr/etkinlikler/various-dimensions-of-the-law-of-the-sea-decisions/



Second edition of the LEARN4SEA newsletter published!

11 July 2025 • PRUSAM – Sustainability Research and Application Center

The 2nd edition, dated June 2025, of the newsletter prepared within the #LEARN4SEA Project – Innovative Joint Learning for Environmentally Friendly Behaviour of Communities in the Black Sea Basin – has been published. Within the LEARN4SEA project, we continue our activities to raise awareness of pollution in the Black Sea basin.

SDG 14 SDG 4 SDG 17

Source: https://prusam.pirireis.edu.tr/etkinlikler/learn4sea-bulteninin-2-baskisi-yayinlandi/



Piri Reis University Took Part in a Sea Cleanup Event as Part of Marmara Sea Day

3 June 2025

As part of the “Marmara Sea Day” events organised by Tuzla Municipality, a sea cleanup aimed at raising environmental awareness and drawing attention to the protection of the seas was held on 1 June 2025 on Tuzla Beach. Piri Reis University, the Underwater Cleaning and Awareness Movement Association (STH) and the Derinlere Saygı Diving Community took an active part in the event.

SDG 14

Source: https://sustainability.pirireis.edu.tr/etkinlikler/piri-reis-universitesi-marmara-deniz-gunu-kapsaminda-deniz-temizligi-etkinligine-katildi/



Clean Sea session

16 May 2025 • PRUSAM – Sustainability Research and Application Center

At the session we held at the Piri Reis University Environmental Information Centre (EIC) on 16 May 2025, we discussed sea cleaning with representatives of our University’s student clubs. At this meeting, where activities carried out within the LEARN4SEA project were also discussed, we talked about activities we could carry out in October 2025, when the University’s 2025-2026 academic year begins. We once again observed the commitment to protecting our seas among the student clubs of Piri Reis University, Türkiye’s first and only maritime-themed university.

SDG 14 SDG 12

Source: https://prusam.pirireis.edu.tr/etkinlikler/temiz-deniz-oturumu/



“Turkish Seas and Blue Heritage” Event Held

2 May 2025 • DETAM – Maritime History Research and Application Center

Piri Reis University hosted an important event strengthening its vision in the maritime field. The programme titled “Turkish Seas and Blue Heritage” featured a presentation by Prof. Dr. Harun Özdaş, Head of the Department of Marine Sciences at the Dokuz Eylül University Institute of Marine Sciences and Technology. The event comprehensively addressed the historical, cultural and scientific heritage of Turkish seas, and participants were informed about blue heritage awareness. Sharing information on many important topics such as maritime history, underwater research and conservation work, Prof. Dr. Özdaş particularly inspired young seafarers.

SDG 14 SDG 4 SDG 11

Source: https://sustainability.pirireis.edu.tr/etkinlikler/turkiye-denizleri-ve-mavi-miras-etkinligi-gerceklestirildi/



Marine drone demonstration

11 April 2025 • PRUSAM – Sustainability Research and Application Center

The marine drone (Smartium) procured by Piri Reis University within the LEARN4SEA project was demonstrated on 11 April 2025 to guests attending the 2nd Meeting of the #LEARN4SEA Project – Innovative Joint Learning for Environmentally Friendly Behaviour of Communities in the Black Sea Basin. Our guests watched and appreciated the capabilities of the Smartium marine drone in different sea states. The Smartium marine drone is a remote-controlled vehicle used to collect pollution from the sea surface.

SDG 14 SDG 9

Source: https://prusam.pirireis.edu.tr/etkinlikler/deniz-dronu-demonstrasyonu/



PRU stakeholders event

11 April 2025 • PRUSAM – Sustainability Research and Application Center

On 11 April 2025, Piri Reis University (PRU) hosted on its campus a coordination meeting with stakeholders as part of the 2nd Meeting of the #LEARN4SEA Project – Innovative Joint Learning for Environmentally Friendly Behaviour of Communities in the Black Sea Basin. During the 2-hour meeting, the educational video developed within the LEARN4SEA project was screened, the project's objectives were explained, and stakeholders' views were gathered in a highly interactive setting. It was gratifying to see that all stakeholders gave strong support to this project, which aims to protect the Black Sea and its basin.

SDG 14 SDG 17

Source: https://prusam.pirireis.edu.tr/etkinlikler/pru-paydaslar-etkinligi/



2nd LEARN4SEA meeting

10 April 2025 • PRUSAM – Sustainability Research and Application Center

Piri Reis University (PRU) hosted the 2nd Meeting of the #LEARN4SEA Project – Innovative Joint Learning for Environmentally Friendly Behaviour of Communities in the Black Sea Basin – in Istanbul, Türkiye, on 10-11 April 2025. Over two days, the project partners presented their project activities, reported on their progress and received feedback from the other partners. Joint work was carried out on the steps to be taken to ensure excellence in the project outputs. In addition to the project partners, the event brought together experts, volunteer ambassadors and university students interested in environmental protection from across the Black Sea Basin, and discussions were held with invited stakeholders on the activities and tools to be developed during the project.

SDG 14 SDG 4 SDG 17

Source: https://prusam.pirireis.edu.tr/etkinlikler/learn4sea-2-toplantisi/



Batumi event

16 January 2025 • PRUSAM – Sustainability Research and Application Center

The National Environmental Agency (NEA) hosted the Kick-off Meeting of the #LEARN4SEA Project – Innovative Joint Learning for Environmentally Friendly Behaviour of Communities in the Black Sea Basin – in Batumi, Georgia, on 4-5 September. In addition to the project partners, the event brought together experts and stakeholders interested in environmental protection from across the Black Sea Basin. Over two days, the project partners presented the project activities and held discussions with invited stakeholders on the activities and tools to be developed during the project.

SDG 14 SDG 17

Source: https://prusam.pirireis.edu.tr/etkinlikler/batum-etkinligi/



13th National Ship and Yacht Design Competition concluded

6 December 2024 • Faculty of Engineering

The 13th National Ship and Yacht Design Competition, organised by the Ship, Yacht and Services Exporters' Association (GYHİB) under the coordination of the Ministry of Trade, has concluded. At the award ceremony of the competition on "Fishing Vessel Design", university designers received their awards. In this year's competition, the 13th, 35 students from different universities competed with 14 projects. Ozan Cem Çiçek, our student in the Piri Reis University Department of Naval Architecture and Marine Engineering, received the Chamber of Naval Architects and Marine Engineers (GMO) Special Award for his project "Essox".

SDG 14 SDG 9

Source: https://muhendislik.pirireis.edu.tr/haberler/13-ulusal-gemi-ve-yat-tasarim-yarismasi-sonuclandi/



The effect on Turkish maritime law of the fundamental principles governing judicial decisions on international law of the sea

14 October 2024 • DHUAM – Maritime Law Research and Application Center

On 14-18 October 2024, an international field study was carried out within TÜBİTAK 3005 Project No. 123K801, "The Effect on Turkish Maritime Law of the Fundamental Principles Governing Judicial Decisions on International Law of the Sea", organised by Project Leader Asst. Prof. Dr. Sevda Keskin, researcher Res. Asst. Şeyma Kuş, and project scholarship holders Res. Asst. Nil İrem Saray and undergraduate student Eylül Nilsu Gökmen. During the project's field study abroad, the International Court of Justice in The Hague and the International Tribunal for the Law of the Sea in Hamburg were visited.

SDG 14 SDG 16

Source: https://dhuam.pirireis.edu.tr/haberler/uluslararasi-deniz-hukukuna-iliskin-yargi-kararlarina-hakim-temel-ilkelerin-turk-deniz-hukukuna-etkisi/

RESEARCH AND PROJECTS

Research Projects Related to SDG 14

Below are research projects related to SDG 14 that were assessed as highly or moderately relevant to sustainability. They were compiled from final reports of Scientific Research Projects (BAP) and from BAP, TÜBİTAK and EU project records. 10 featured projects out of 25 are shown.

BAP-2024-07 · BAP · 2023-2024 (1st call)

Seafood and Culinary Heritage in Fishing Villages: Sustainable Gastronomic Tourism Opportunities

Asst. Prof. Dr. Uğur KAÇAN · Maritime Vocational School (MVS)

Fieldwork was carried out in seven fishing villages on the Aegean, Marmara and Black Sea coasts, and a thematic content analysis was conducted using in-depth interviews with 18 participants and observation data. The findings were grouped under the themes of traditional fishing, sustainability awareness, economic difficulties, gastronomic heritage, tourism potential, infrastructure deficiencies, the role of women and the tension of modernisation. Supporting women's labour, environmental awareness and local development through holistic strategies is recommended, and women's cooperative models are proposed.

OUTPUTS

Article in Journal of Tourism & Gastronomy Studies; A digital book based on local recipes and narratives is planned

SDG 14 SDG 8 SDG 5 SDG 11 SDG 12

BAP-2023-03 · BAP · 2022-2023

Design of a Waste Heat-Driven Organic Rankine Cycle System for Ships

Prof. Dr. Cüneyt EZGİ · Faculty of Maritime Studies

In the context of IMO emission rules, electricity generation by organic and inorganic Rankine cycles driven by the exhaust waste heat of ships' main and auxiliary diesel engines was analysed thermodynamically. Cycle/exergy efficiencies, net power and irreversibilities were calculated for dry, wet and isentropic working fluids; R718 (water), with ODP=0 and GWP=0, was found to be one of the most suitable fluids at high turbine inlet temperatures.

OUTPUTS

Ezgi C., Kepekci H. (2024), 'Thermodynamic Analysis of Marine Diesel Engine Exhaust Heat-Driven Organic and Inorganic Rankine Cycle Onboard Ships', Applied Sciences 14(16):7300 (SCIE, Q1); A chapter was submitted to the Springer book 'Energy Rationality and Management for Decarbonization'

SDG 7 SDG 13 SDG 14

BAP-2021-02 · BAP · 2021-2022

Preparation of Polycaprolactone Composite Biofilms for Dye Adsorption

Prof. Dr. Musa KAMACI · Maritime Vocational School (MVS)

For the removal of dyes that cause water pollution, chitosan-containing iron particles were prepared and dispersed in polycaprolactone (PCL) at different ratios to produce composite biofilms. The biofilms were characterised by FT-IR and tested for the adsorptive removal of the cationic dye methylene blue from aqueous media with respect to pH, temperature, adsorbent amount, contact time and concentration. Approved budget TRY 56,050.

OUTPUTS

Writing of a publication is ongoing (an internationally indexed journal is planned)

SDG 6 SDG 14 SDG 12

BAP-2020-02 · BAP · 2020-2021

Reducing Ship Resistance by Means of Channels Opened in the Ship Hull

Prof. Dr. Ahmet TAŞDEMİR · Faculty of Maritime Studies

The effect of channels opened in the hull to reduce ship resistance (and hence the required engine power) was investigated through CFD (computational fluid dynamics) analyses and experiments in the AF100 wind tunnel. After the channels were found to increase viscous resistance on NACA12 profiles, the study focused on bluff prismatic bodies. For a prismatic model with three 40 mm-wide channels, total resistance was found to decrease by up to 40% according to CFD and by up to 37% according to the experiments (around 30% on average); numerical and experimental results agreed within a deviation of 6–23%.

OUTPUTS

The report states that work on one publication, one presentation and one patent application is ongoing

SDG 14 SDG 13 SDG 7 SDG 9

BAP-2020-07 · BAP · 2020-2021

Development of a Polymeric Fluorescent Sensor for the Removal of Heavy Metals from Seawater

Asst. Prof. Dr. Musa KAMACI · Maritime Vocational School (MVS)

A fluorescent sensor containing polycaprolactone (PCL) and ZnO quantum dots was developed for the determination of heavy metal ions (particularly Fe3+) in seawater. The sensor's selectivity towards a large number of metal ions was examined, and it was found to show high selectivity and sensitivity for Fe3+ (LOD 0.333–0.410 µM).

OUTPUTS

Writing of an article based on the project outputs is reported to have begun

SDG 14 SDG 6 SDG 3

BAP-2020-09 · BAP · 2020-2021

Investigation of the Removal of Dyes and Heavy Metals from Seawater in the Tuzla Shipyards Region Using Rice Husk Ash

Prof. Dr. Özgül TAŞPINAR · Chemistry R&D Laboratory; students of the Department of Naval Architecture and Marine Engineering (GMİM)

A dark-coloured polluted water sample taken from a shipyard in Tuzla was treated with rice husk ash (RHA), a waste material, and rendered clear and colourless. The results were documented by FTIR and photographs; it was concluded that RHA and the nanostructured calcium silicate to be produced from it could be effective in the treatment of ship/shipyard wastewater. Work has begun on establishing infrastructure for this purpose in the Chemistry R&D Laboratory.

OUTPUTS

Spring 2022 MF428 graduation thesis (Mustafa Bozkurt, Ahmet Alparslan Kuzucu); An international journal/conference publication is in preparation

SDG 14 SDG 6 SDG 12

BAP-A-2025-01-01 · BAP Infrastructure · 2024-2025 (1st call)

Feasibility and Roadmap for the Electrification of Small Boats for the Decarbonisation of the Sea of Marmara (MAR-DEC)

SDG 13 SDG 14 SDG 7

BAP-A-2025-01-05 · BAP Infrastructure · 2024-2025 (1st call)

Performance and Emission Modelling of a Hydrogen-Assisted Combustion Application in a Diesel Engine

SDG 13 SDG 7 SDG 14 SDG 3

BAP-2025-02-03 · BAP · 2024-2025 (2nd call)

Use of Polyamide-6 (PA-6) and Polyacrylonitrile (PAN) Composite Nanofibres in Oil–Water Separation

SDG 6 SDG 14 SDG 12

BAP-A-2024-02 · BAP Infrastructure · 2024-2025 (2024 BAP Infrastructure call)

Design of a Rim-Driven Propeller Propulsion System for Small Electric Boats

SDG 7 SDG 13 SDG 14 SDG 9

ANNEX

SDG 14 Activity Inventory

The table below lists all activities associated with SDG 14 during and before the reporting period that are publicly available on the university's websites. The links serve as evidence.

Date	Activity	Unit	SDG
24 December 2025	2nd Green Transformation in Maritime Summit Held at Piri Reis University!		7 9 13 14
2 October 2025	GREENPORT Project featured at international conference	DENEKAM – Maritime Economics Research and Application Center	9 13 14 17
2 October 2025	Various Dimensions of the Law of the Sea Decisions	Faculty of Law	14 16
11 July 2025	Second edition of the LEARN4SEA newsletter published!	PRUSAM – Sustainability Research and Application Center	14 4 17
4 June 2025	European Maritime Safety Agency (EMSA) inspection	Faculty of Maritime Studies	14 4
3 June 2025	Piri Reis University Took Part in a Sea Cleanup Event as Part of Marmara Sea Da y		14
16 May 2025	Clean Sea session	PRUSAM – Sustainability Research and Application Center	14 12
2 May 2025	"Turkish Seas and Blue Heritage" Event Held	DETAM – Maritime History Research and Application Center	14 4 11
11 April 2025	Marine drone demonstration	PRUSAM – Sustainability Research and Application Center	14 9
11 April 2025	PRU stakeholders event	PRUSAM – Sustainability Research and Application Center	14 17
10 April 2025	2nd LEARN4SEA meeting	PRUSAM – Sustainability Research and Application Center	14 4 17
24 March 2025	"Green Fuels for Green Shipping" Workshop Held at Piri Reis University		7 13 14
20 March 2025	"Green Fuels for Green Shipping" event by our PRU-ILAWS Club and the Shippi ng and Ocean Law Group	ÖDEK – PRU-ILAWS Club	13 14 7
20 March 2025	Green Fuels for Green Shipping	Faculty of Law	13 14 7
30 January 2025	"Green Fuels and Technologies Session" jointly organised by the İMEAK Chamb er of Shipping and Piri Reis University	PRUSAM – Sustainability Research and Application Center	7 13 14 17
16 January 2025	Batumi event	PRUSAM – Sustainability Research and Application Center	14 17

Date	Activity	Unit	SDG
15 January 2025	LEARN4SEA	PRUSAM – Sustainability Research and Application Center	9 4 14 17
15 January 2025	BLUE4SEA	PRUSAM – Sustainability Research and Application Center	14 4 17
9 December 2024	National Symposium on the Law of the Sea through International Judicial Decisions	Faculty of Law	14 16
6 December 2024	13th National Ship and Yacht Design Competition concluded	Faculty of Engineering	14 9
25 October 2024	Joint event of our Sea Ambassadors Club with the “Dart Society Team”	ÖDEK – Sea Ambassadors Club	14
14 October 2024	The effect on Turkish maritime law of the fundamental principles governing judicial decisions on international law of the sea	DHUAM – Maritime Law Research and Application Center	14 16
12 October 2024	Advanced Maritime Seminars: water treatment systems on ships	Faculty of Maritime Studies	14 6
2 October 2024	Green Transformation in Maritime Summit held under the leadership of the İMEAK Chamber of Shipping	PRUSAM – Sustainability Research and Application Center	13 14 7
10 May 2024	Safety at sea: public order, security and law	DHUAM – Maritime Law Research and Application Center	14 16
10 May 2024	Law of safety, public order and security at sea – ILAWS	ÖDEK – ILAWS Club	16 14
1 February 2024	International Law of the Sea Decisions Project	Faculty of Law	14 16
30 May 2023	Work carried out and decisions taken at the 2022-2023 meetings of the IMO LEG, MSC and MEPC Committees, and the IMO London Convention of 15 December 2021	DHUAM – Maritime Law Research and Application Center	14 16 13
30 May 2023	Work carried out and decisions taken at the 2022-2023 meetings of the IMO LEG, MSC and MEPC Committees / Conduct barring the right to limit liability under the 1976 London Convention in light of the IMO interpretative resolution of 15 December 2021	Faculty of Law	14 13 16
17 May 2022	Work carried out at the 2021-2022 meetings of the IMO LEG, MSC and MEPC Committees	DHUAM – Maritime Law Research and Application Center	13 14 16
28 February 2022	Climate change in the Mediterranean	Faculty of Law	13 14
4 December 2019	The political and legal importance of the Arctic region and its assessment from Türkiye’s perspective	DHUAM – Maritime Law Research and Application Center	13 14 16
8 May 2019	Marine accidents from a legal perspective	Faculty of Law	14 8
29 April 2019	Assessment of coastal structures in terms of environmental legislation	Faculty of Law	14 11 15
	Climate Change Mitigation and Action Policy Document		7 11 12 13 14 15 17

CONCLUSION

Conclusion and Assessment

With its maritime specialisation and campus on the Marmara coast, PRU makes one of its strongest contributions in SDG 14 through continuously monitored marine discharge (SAİS), the LEARN4SEA project and GREENPORT Alliances, which it coordinates, the Marmara Sea Day underwater clean-up and research on mucilage and heavy metals. The 401–600 band in the THE Impact Rankings 2025 reflects this expertise.

Development areas include a policy on sourcing seafood served on campus sustainably, an action plan to reduce plastic waste and a programme to monitor the health of local marine ecosystems regularly, together with community awareness work on overfishing and illegal fishing.



PÎRÎ REİS UNIVERSITY

SDG 14: Life Below Water

Piri Reis University · Sustainable Development Goals Report · 2024–2025 Academic Year and 2025 Financial Year

Piri Reis University, Postane Mah. Eflatun Sk. No:8, 34940 Tuzla / Istanbul, Türkiye
sustainability.pirireis.edu.tr · www.pirireis.edu.tr