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Mapping of the Ocean Technology Ecosystem in Dalmatia

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2023

Contents

- 01** Summary and Overview

- 02** Background, purpose, and delimitations

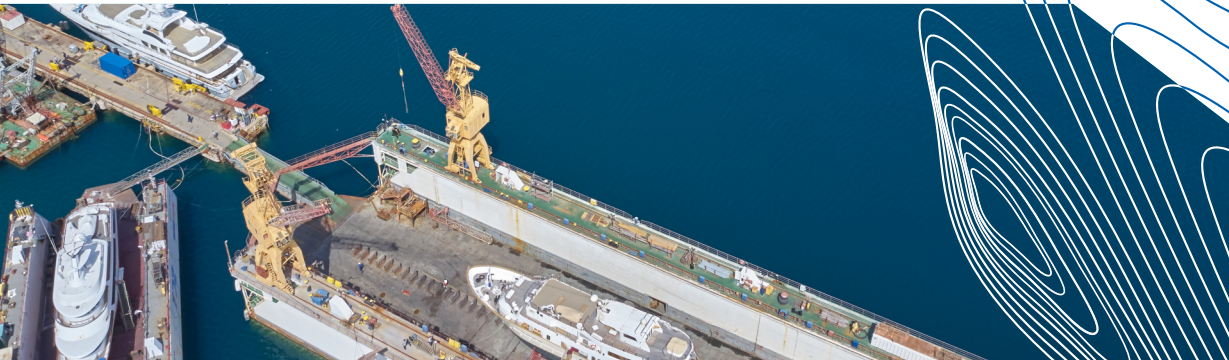
- 03** Companies

- 04** R&D community

- 05** Clusters, networks, and forums

- 06** Public Actors

01 Summary & Overview



Executive summary

This report gives an overview of actors in the ocean technology ecosystem in Dalmatia. Ocean technology is in this report defined as “technologies for the development of the maritime and marine industries”.

In addition to the ocean technology companies, the report also summarizes the region's R&D environments and their test-lab infrastructure, hubs, competence, networks and forums.

This report will be updated on regularly.

Companies developing and selling ocean technology

We have identified **119** ocean technology companies in Dalmatia, **78** of which operate within the maritime sector, and **41** within the marine sector.

The **119** ocean technology companies had a total revenue of **526,67 M EUR** and employ **4569** employees as of 2022.

72 of the identified ocean technology companies are located in Split-Dalmatia county, the remaining **47** in municipalities along the coastline of Dalmatia-Zadar county, Dubrovnik-Neretva county, and Šibenik-Knin county.

Public actors

We have identified **10** public actors operating within the ocean technology space, including municipalities and county authorities.

R&D actors and test infrastructures

In addition to the research and development conducted in the identified **119** companies, we have identified **7** main performers of R&D related to ocean technology in Dalmatia; **University of Split (UNIST)**, **Croatia Hydrographic Institute (HHI)**, **Institute of Oceanography and Fisheries (IOR)**, **University of Dubrovnik (UNIDU)**, **University of Zadar (UNIZD)**, and **Development Innovation Center ALUTECH** and **Ruder Bošković Institute (RBI)**.

In addition to the R&D performed by the named actors, some identified ocean technology companies also conduct their own R&D projects. Of the **119** identified companies, **13** actors have, as of the beginning of the year 2023 **21,51 M EUR** of R&D projects ongoing.

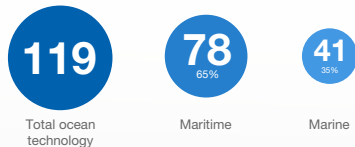
Clusters, networks and forums

We have identified **9** entities working with issues related to ocean technology in Dalmatia, including **3** clusters, **6** networks.

The listed entities have ocean technology as focus area, either fully or partly.

Key figures of the ocean technology ecosystem in Dalmatia

119 ocean tech companies, 78 maritime companies, 41 marine companies



526,67 M EUR

(2022)
in revenue in ocean tech
companies

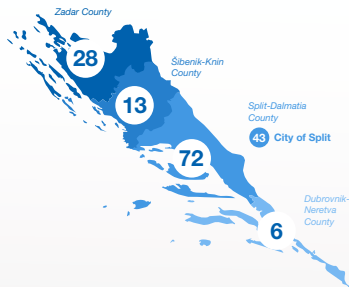
4.569

(2022)
employees in ocean tech
companies

Ocean technology related R&D infrastructure entities in Dalmatia

2X Center of Excellence for Science and Technology & Center for interdisciplinary marine and maritime research
1X Maritime Innovation Center
12X Laboratories
2X Innovation hubs
1X Research station
1X Institute for marine and coastal research

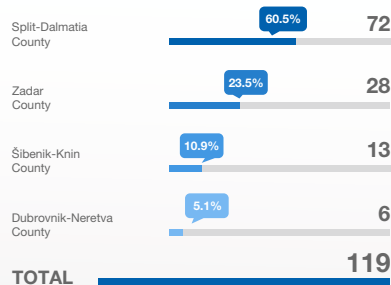
72 of 119 companies are located in Split-Dalmatia county



21,51 M EUR

awarded to companies for
ongoing projects

Distribution of Ocean Technology companies according to their location in Dalmatia



02 Background, Purpose & Delimitations



About the report

Title: Mapping of Ocean Technology ecosystem in Dalmatia

Written by: University of Split, Science and Innovation Department

Graphic design: Imperativ d.o.o.

Project Period: July - December 2023

About University of Split: UNIST is a comprehensive scientific and teaching / educational institution, consisting of 11 Faculties, 1 Academy of Arts and 4 Departments. The focus of the research work carried out is on disciplines characterized by natural, cultural, historical, social, economic and other features of the region as a part of the Croatian Adriatic and the Mediterranean region as a whole.

University of Split
Ruđera Boškovića 31
21000 Split

+385 21 558 212
utt@unist.hr

Background and purpose

This mapping report is generated as a derivative of Initiative OTIMEDT Initiative (Ocean Technology Innovation Market Exchange for Dalmatia and Trøndelag).

The lack of adequate mapping of the blue sector hinders the analysis of the current situation in the Dalmatian region and the identification of potential areas of cooperation.

The University of Split acts within following strategic areas:

- Scientific excellence for academic and societal impact
- Contribute to the development of society by supporting creativity, innovation and entrepreneurship
- Make science and art widely attractive and recognizable
- Open science and digital transformation

This mapping will provide a good basis for proposing measures that will contribute to achieving the goal of increasing Croatia's innovative power in ocean technology through closer cooperation between the actors in Dalmatia.

Methodology

This report gives an overview of the key players in the ecosystem for ocean technology in Dalmatia. In this context, ocean technology is defined as technologies for the development of the maritime and marine industries.

The overview is structured along three dimensions:

- **Type of ocean technology:** Ocean technology is segmented into marine and maritime technology.
- **Sub-sectors within maritime and marine technology:** See p. 13 and 14 for all sub-sectors and definitions.
- **Stakeholder groups active within these sub-sectors:** Includes companies (startups and established companies), R&D actors, clusters, public actors, networks and forums

Three information sources are used creating this report:

- Structuring existing knowledge about the ecosystem by interviewing key stakeholders in the ecosystem. For details, see p. 9.
- Using FINA info BIZ database of technology companies in Croatia and Croatian Chamber of e-commerce. Desk research by use of publicly available information sources such as information from company web sites, Croatian Registar of Shipping, Court Registry, media publications and other available public records.

The information in this report is quality assured to an extent that has been practically feasible within a very limited time frame. The University of Split makes no guarantee that the content of this report is free from factual errors and/or incomplete information. The report will be updated on a regularly. This report focuses exclusively on companies and institutions directly related to the discussed industries and may exclude other companies.

Mapping report information sources

Interview with the working group

- Structuring existing knowledge about the ecosystem by interviewing key stakeholders in the ecosystem.
- 5 interviews have been conducted in September of 2023.

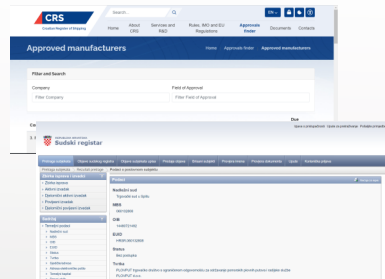
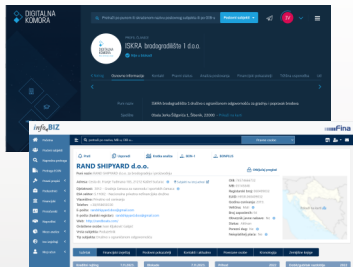
Info Biz Database

- Using FINA infoBIZ 2.0 and Croatian Chamber of Commerce databases of technology companies in Croatia to identify ocean technology companies relevant for this mapping.
- 119 companies are the subject of this mapping report analysis.

Desk research

- Desk research uses publicly available information from different sources such as Court Registry, Croatian Register of Shipping (CRS), Google, company homepage, etc.

Name	Role/Company	Date
Eli Marušić	Pomorski fakultet Split - PFST	19.09.2023
Marija Stupalo	Salona Var d.o.o.	19.09.2023
Katja Božić	Plovput d.o.o.	19.09.2023
Branko Lubina	"PCE" Marine Electronic Center	19.09.2023
Merica Slišković	Pomorski fakultet Split - PFST	19.09.2023



Ocean Technology – definitions used in this report

This report shows an overview of the players in the ecosystem for ocean technology in Trøndelag. Ocean technology is defined as **technologies** for the development of the maritime and marine industries.

- **The maritime industry includes** business that design, develop, build, deliver, maintain, own, operate, and sell ships, equipment, and specialized services for all vessels and other.
- **The marine industry includes:** fisheries, aquaculture, fish processing, biology, ocean research and the supplier industry.

The overview is structured along three main dimensions:

01 Type of Ocean Technology

Ocean technology is segmented into marine and maritime technology. Companies and actors can be placed within both marine and maritime technology if they are active in both industries.

02 Subsectors within the marine and maritime technology

Both marine and maritime technology is further segmented into sub-sectors based on what is communicated as their core technology/service. Some companies may deliver technologies and services applicable to more than one subsector. If that is the case, they will be included in multiple subsectors within this mapping report.

03 Stakeholder groups active within these subsectors

Includes companies (startups and established companies), R&D actors, public actors, clusters, networks and forums.

Ocean Technology – definitions used in this report

Maritime Industry

Type of players ➤



Research

Universities
Research institutes
Corporate R&D Units
Other public entities performing R&D



Equipment, design and services

Companies that produce and deliver software, mechanical and electrical equipment for ships and services within ship design and other technological services



Building/ modification

Companies (shipyards) that build, repair and maintain a broad range of vessels for Croatian and international shipping companies

★ Most of the identified companies belong to this value chain step



Operations

Shipping companies which operations are specialized towards specific markets such as deep sea, short sea, passenger traffic, aquaculture, fishery, ocean research, offshore wind and oil and gas

Marine Industry

Type of players ➤



Research

Universities
Research institutes
Corporate R&D Units
Other public entities performing R&D



Supplier industry

Companies that deliver services and equipment for fisheries and aquaculture, such as control systems, breeding, vaccines, feed, fishing gear, sonars and other process technologies



Aquaculture, fisheries and processing

Companies which are in the business of production from marine resources, either through fishing or aquaculture, seaweed and algae production or processing of the raw materials

★ Most of the identified companies belong to this value chain step



Distribution and sales

Companies operating distribution of products from the production and processing step of value chain to the relevant market segments

Maritime technology broken down into sub-sectors with description

Maritime technology

Construction of ships/vessels and floating structures

Construction of all types of commercial, passenger, and special purpose ships as well as offshore and inshore constructions.

Technical consultancy

Consultancy services within maritime engineering, ship design and construction, cybernetics, asset management, risk management etc.

Drones and autonomy

Development of subsea, aerial and surface drones with multiple applications in various maritime industries and other autonomy solutions for maritime applications

Software

Software for navigation, chartplotting, education, tracking systems, fleet management, ship design, asset management And other apps for maritime applications.

Propulsion and maneuvering

Equipment and systems connected to the propulsion, dynamic positioning and maneuvering of ships and other floating units. Includes actuators and valve control systems, hybrid propulsion system, foil technology, hydraulics, thrusters etc.

Technical equipment

Electrical and mechanical equipment such as control systems, sensors, ocean communication systems, positioning Technical equipment systems, cargo handling and other deck operations and monitoring solutions for maritime applications.

R&D

R&D within maritime technology.

Subsea equipement

Products and components which are designed for subsea use.

Marine technology broken down into sub-sectors with description

Marine technology

Technical equipment and installations

Electrical and mechanical equipment and installations such as water filtration, treatment and cleaning systems, subsea imaging and monitoring, climate regulation systems, and other farming tools used in conventional and landbased aquaculture.

Software

Software for feeding assistance, process and production controlling, live analysis and data collection, and other software solutions for aquaculture.

Technical advisory

Technical advisory services for marine business areas such as aquaculture, marine engineering, certification services, and software and process support.

Farming technologies

Targeted technology and facilities for both open sea and land-based fish farming, including offshore farming solutions and land-based RAS facilities.

Fish health, environment and R&D

Various products and services aimed at fish health preservation and monitoring and environment conservation, in addition to vaccination, genetics and stem fish research, tracking services for escaped farmed fish, and related advisory services.

Seafood farming and processing

Cultivation of various types of fish and shellfish species and processing by using advanced technologies.

Four stakeholder groups are included in the mapping



Companies

- Companies (startups, scaleups, and established companies) that operate within one or more of the described sectors on page 14 and 15, with a head quarter or sub-divisions in Dalmatia.
 - Major shipping companies, shipyards, traditional aquaculture and fishing companies are included.
-



R&D community

- Public and private performers of R&D within one or more of the described sectors with head quarter in Dalmatia.
 - R&D infrastructure located in Dalmatia. Infrastructure is defined as equipment, resources and related services that the research, development and innovation community use to conduct research and innovation.
 - R&D projects performed by the identified companies, financed nationally or by the European Union.
-



Clusters, networks, and forums

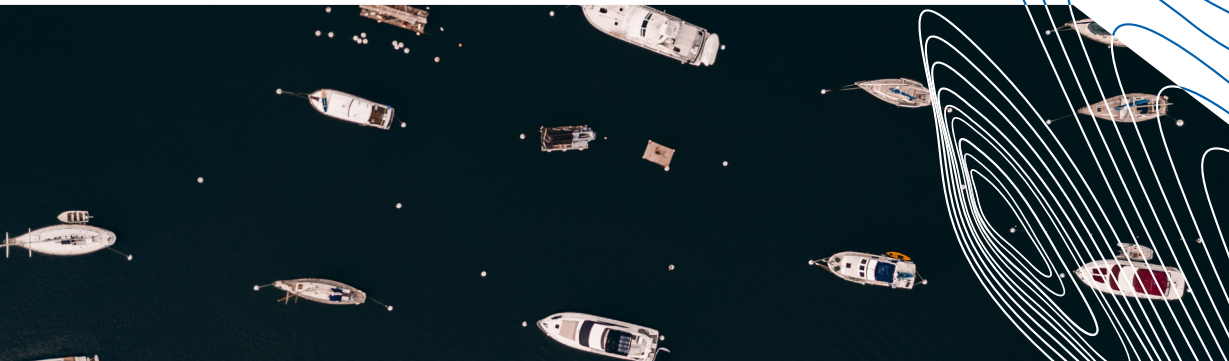
- Clusters, networks and forums working with issues related to ocean technology in Dalmatia.
 - Only formal clusters, networks or forums were considered for inclusion.
-



Public actors

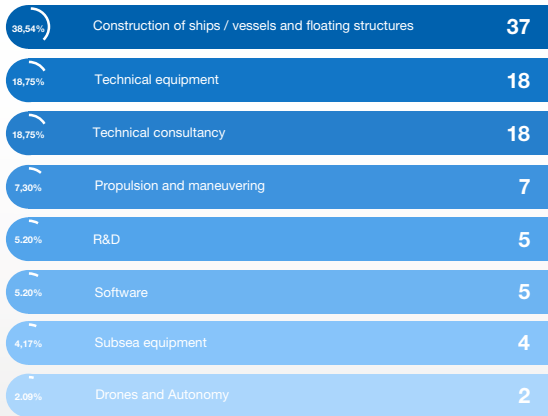
- Public actors that provide public funding for research and innovation activities for ocean technology companies.
 - Public actors involved in concrete ocean technology research and innovation projects, as users, context makers etc.
-

03 Companies



78 maritime technology companies in Dalmatia in 2023

Number of companies in the each subsector in Dalmatia

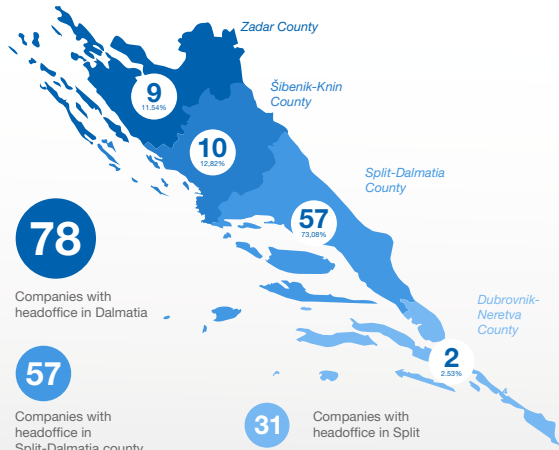


TOTAL no. of maritime companies

(78 unique) **96**

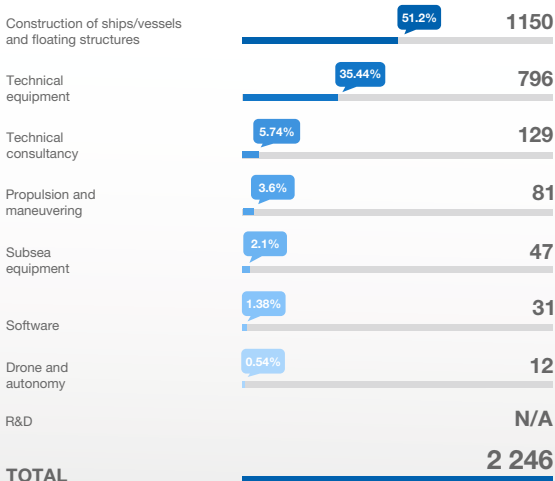
Companies can belong to more than 1 subsector, therefore the total number of companies displayed is higher

Map of Dalmatia with information about companies locations



2246 employees in the identified maritime technology companies in Dalmatia

Total maritime employees per subsector



Radež d.o.o. employs 13.40% of the total number of employees

Number of employees obtain from infoBiz 2.0 database and the numbers represent snap shot of the workforce in 2022

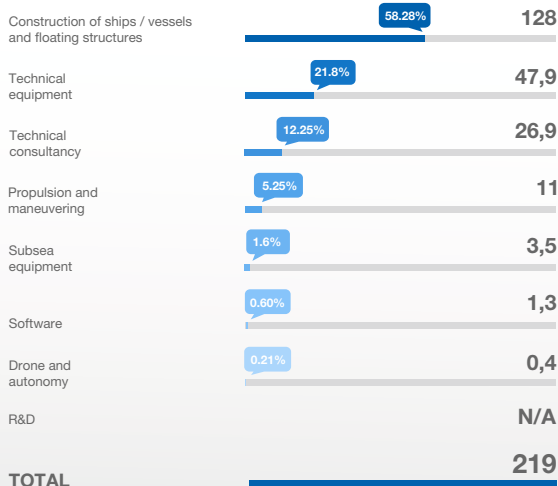
Since companies can be active in more than one subsector, the company's employees are only counted toward the company's main subsector

Top 20 employers

Company	Sector	No. of employees
Radež d.d.	Technical equipment	301
Plovput d.o.o.	Technical equipment/Technical consultancy/R&D	252
Iskra brodogradilište 1 d.o.o.	Construction of ships/vessels and floating structures	168
Brodograđevna industrija Split	Construction of ships/vessels and floating structures	140
Brodotrogir Cruise d.o.o.	Construction of ships/vessels and floating structures	135
Pomgrad inženjering d.o.o.	Construction of ships/vessels and floating structures	131
Rand shipyard d.o.o.	Construction of ships/vessels and floating structures	94
Navalis d.o.o.	Construction of ships/vessels and floating structures	92
Dalstroj d.o.o.	Technical equipment	61
Brzoglas d.o.o.	Construction of ships/vessels and floating structures	54
Sifleks d.o.o.	Construction of ships/vessels and floating structures	53
Thome Croatia d.o.o.	Technical consultancy (maritime)	45
Global offshore engineering d.o.o.	Technical equipment/Subsea equipment/Technical Consultancy	43
Nuić nautika d.o.o.	Construction of ships/vessels and floating structures/R&D	37
Marana d.o.o.	Subsea equipment	37
Prima Navis d.o.o.	Construction of ships/vessels and floating structures	34
Adria Winch d.o.o.	Technical equipment	31
Pakleni otoci d.o.o.	Construction of ships/vessels and floating structures	31
Nauta Lamjana d.o.o.	Construction of ships/vessels and floating structures	27
Capax d.o.o.	Technical consultancy	26
Pomorski centar za elektroniku d.o.o.	Technical equipment/Software	25

Total revenue of 219 M EUR for the 78 identified maritime technology companies

Total maritime revenue in M EUR per subsector



Providers of construction of ships and floating structures constitute 58.29% of total revenue

Since companies can be active in more than one subsector, the company's revenue is only counted toward the company's main subsector

Top 20 earners

Company	Sector	Revenue (in T EUR)
Pomgrad inženjering d.o.o.	Construction of ships/vessels and floating structures	26.120
Brodograđevna industrija Split d.o.o.	Construction of ships/vessels and floating structures	25.120
Iskra brodogradilište 1 d.o.o.	Construction of ships/vessels and floating structures	20.440
Capax d.o.o.	Technical consultancy	13.210
Plovput d.o.o.	Technical equipment/Technical Consultancy/R&D	12.220
Radež d.d.	Technical equipment	11.460
Thome Croatia d.o.o.	Technical consultancy	7.320
Navalis d.o.o.	Construction of ships/vessels and floating structures	6.800
Adria Winch d.o.o.	Technical equipment	6.670
Brodotrogir cruise d.o.o.	Construction of ships/vessels and floating structures	6.420
Rand shipyard d.o.o.	Construction of ships/vessels and floating structures	5.400
Oštro d.o.o.	Construction of ships/vessels and floating structures	5.300
Cummins Adriatic d.o.o.	Propulsion and maneuvering	5.180
Nulić nautika d.o.o.	Construction of ships/vessels and floating structures/R&D	4.290
Marinetek Adriatic d.o.o.	Technical equipment/Technical consultancy/R&D	4.290
Gumis d.o.o.	Propulsion and maneuvering	3.880
Dalstroj d.o.o.	Technical equipment	3.650
Sifleks d.o.o.	Construction of ships/vessels and floating structures	3.480
Cronomar d.o.o.	Technical consultancy	3.390
Brzoglas d.o.o.	Construction of ships/vessels and floating structures	3.260
Marana d.o.o.	Subsea equipment	2.860

Overview of maritime technology companies in Dalmatia

Construction of ships / vessels and floating structures

AGENA MARIN d.o.o.
 BIMES d.o.o.
 BRODOGRAĐEVNA INDUSTRIJA SPLIT
 BRODOGRADILIŠTE FILIPI d.o.o.
 BRODOTROGIR CRUISE d.o.o. ■
 BRZOGLAS d.o.o.
 CARBO CAT d.o.o. ■
 DAMOR d.o.o.
 DUNKIĆ d.o.o.
 GAMIK d.o.o. ■
 GIBALTAR - NAUTIKA d.o.o.
 GORING d.o.o.
 GUMENJACI-ORADA d.o.o.
 H2 CATAMARANS d.o.o.
 ISKRA BRODOGRADILIŠTE 1 d.o.o. ■
 KANULA d.o.o.
 LEUT BRAČ j.d.o.o.
 MARAL TECHNOLOGIES d.o.o.
 NAUTA LAMJANA d.o.o.
 NAUTIČKA MILJA d.o.o.
 NAVALIS d.o.o.
 NUIĆ NAUTIKA d.o.o.
 OŠTRO d.o.o.
 PAKLENI OTOCI d.o.o.
 POMGRAD INŽENJERING d.o.o.
 PRIMA NAVIS d.o.o.
 RAMINA-POMORSTVO d.o.o.
 RAND SHIPYARD d.o.o. ■
 RIBAR I MORE d.o.o.
 SALONA GRUPA d.o.o.
 SALONA VAR d.o.o.
 SAVVY SOLUTIONS d.o.o.
 SIFLEKS d.o.o. ■
 ŠKVER KUŠTERA, d.o.o.
 VELUM NAUTICA d.o.o.
 VEN-ZORANA j.d.o.o.
 VINETA d.o.o. (Monachus Boatyard)

Technical consultancy

ADVANCED SOLUTIONS d.o.o. ■
 ARMANIJA d.o.o.
 CAPAX d.o.o.
 CEME-MARINE CONSULTING d.o.o. ■
 CRONOMAR d.o.o.
 GLAVNO REBRO d.o.o.
 GLOBAL OFFSHORE ENGINEERING d.o.o.
 GM TURBO d.o.o.
 MARAL TECHNOLOGIES d.o.o.
 MARINE DESIGN d.o.o.
 MARINETEK ADRIATIC d.o.o..
 OBALA d.o.o.
 OMNIMONT d.o.o.
 PLOVPUT d.o.o.
 PROMAR DESIGN d.o.o.
 RUSKOVIĆ BRODARSTVO d.o.o.
 SOCIUS d.o.o.
 THOME CROATIA d.o.o. ■

Propulsion and maneuvering

ADRIATIC PROPELERI d.o.o. ■
 GUMIS d.o.o.
 MARAL TECHNOLOGIES d.o.o.
 RAMINA-POMORSTVO d.o.o.
 SAJLA COM d.o.o. ■
 SALONA VAR d.o.o.

Technical equipment

ADRIA WINCH d.o.o.
 DALSTROJ d.o.o.
 DANG d.o.o.
 ELMAR ELEKTRONIC d.o.o.
 GLOBAL OFFSHORE ENGINEERING d.o.o.
 JADRAN TEHNIKA d.o.o. ■
 LOCOMARINE d.o.o.
 MARAL TECHNOLOGIES d.o.o.
 MARINE CONSTURCT d.o.o.
 MARINETEK ADRIATIC d.o.o.
 METAL PRODUKT d.o.o. ■
 MULTIPLT d.o.o..
 PLOVPUT d.o.o.
 POMORSKI CENTAR ZA ELEKTRONIKU d.o.o.
 RADEŽ d.o.o.
 SALONA VAR d.o.o.
 TIMEK d.o.o.
 TKV d.o.o.

Subsea equipment

CONNECTOR SUBSEA d.o.o.
 GLOBAL OFFSHORE ENGINEERING d.o.o.
 MARAL TECHNOLOGIES d.o.o.
 MARANA d.o.o.

Software

ELNAV, obrt za usluge ■
 GALIOT AERO d.o.o.
 LOOP j.d.o.o.
 OCULI MARE d.o.o. ■
 POMORSKI CENTAR ZA ELEKTRONIKU d.o.o.

R&D

MARAL TECHNOLOGIES d.o.o.
 MARINETEK ADRIATIC d.o.o.
 NUIĆ NAUTIKA d.o.o.
 PLOVPUT d.o.o.
 SALONA VAR d.o.o.

Drones and autonomy

ALPHA SAGITTARIUS d.o.o. ■
 LOOP j.d.o.o.

■ companies established from 2017 and after
(startups and newly established subdivisions)

Overview of maritime technology companies (1/8) – Construction of ships/vessels and floating structures

Company	Location	Established	Product/service/solution	Number of employees	Revenue (2022) in T EUR
AGENA MARIN d.o.o.	Biograd na moru	2010	Privately owned with a fully equipped shipyard. Creates everything inhouse, from initial idea and conceptual design to prototype development and plug and mold production.	6	992
BIMES d.o.o.	Trogir	1997	Workshop production and assembly of steel structures in shipbuilding.	12	327
BRODOSPLIT d.d.	Split	2001	Construction of all types of commercial and passenger ships and a part of special purpose ships, as well as special steel structures.	140	25.120
BRODOGRADILIŠTE FILIPI d.o.o.	Sukošan	2003	Repair, construction and maintenance of traditional wooden boats.	7	251
BRODOTROGIR CRUISE d.o.o.	Trogir	2018	Primarily focused on the construction of small and medium size cruise vessels.	135	6.420
BRZOGLAS d.o.o.	Kaštel Novi	1998	Production of the vessels from glass reinforced polyester with manual laying technology and vacuum packing.	54	3.260
CARBO CAT d.o.o.	Vodice	2020	Production of vessels, made of fiber-reinforced thermoactive resins, using the vacuum infusion process.	12	271
DAMOR d.o.o.	Kaštel Sućurac	1998	Many years of experience in the production and maintenance of fiberglass boats.	24	2.080
DUNKIĆ d.o.o.	Šibenik	2005	Manufacture and repair of vessels made of fibre reinforced polyester and similar materials by hand lay-up method.	4	322
G.A.M.I.K. d.o.o.	Podstrana	2018	Execution of works on marine structures, Arrangement of harbors, rehabilitation of the coast, wharves, slopes.	16	2.370

Overview of maritime technology companies (1/8) – Construction of ships/vessels and floating structures

Company	Location	Established	Product/service/solution	Number of employees	Revenue (2022) in T EUR
GIBRALTAR - NAUTIKA d.o.o.	Split	2013	Production of ships, production of ship interiors.	1	1,8
GORING d.o.o.	Split	1997	Experience in the field of hull construction and outfitting of ships, as well as in the field of construction supervision.	3	2.620
GUMENJACI-ORADA d.o.o.	Split	2009	Production and service of dinghies. Offer equipment for dinghies; pumps, valves, machete for oars, holders for ropes and towing, handles, consoles and more.	4	55
H2 CATAMARANS d.o.o.	Vranjic	2016	Focused on crafting boats with the latest technology and the highest quality and craftsmanship.	4	1.020
ISKRA BRODOGRADILIŠTE 1 d.o.o.	Šibenik	2018	Leading ship repair yard on the eastern coast of the Adriatic Sea, specialized in repairs of all types of vessels up to 80 m in LOA, and in new build vessels up to 60 meters LOA.	168	20.440
KANULA d.o.o.	Split	2007	Production of dinghy suitable for professionals, which can be sailed comfortably and safely in all weather conditions, while meeting world quality standards. Dinghy production and manufacture and repair of vessels made of glass reinforced polyester and rubberized or plasticized textiles.	6	648
LEUT BRAČ j.d.o.o.	Split	2016	Closely related in marine interior solutions and installations as well as providing different insulation options. Specialists in shipbuilding of unique and exclusive projects.	3	226
MARAL TECHNOLOGIES d.o.o.	Split	2014	Design and manufacturing of hybrid aluminum working boats and floating structures.	N/A	66
NAUTA LAMJANA d.o.o.	Kali	1996	Offers an extensive service to mariners and owners of all types of yachts and sail or motor boats as well as commercial vessels.	27	1.620

Overview of maritime technology companies (1/8) – Construction of ships/vessels and floating structures

Company	Location	Established	Product/service/solution	Number of employees	Revenue (2022) in T EUR
NAUTIČKA MILJA d.o.o.	Kaštel Gomilica	2011	Manufacture of recreational, commercial and public boats made of reinforced polyester with hand lay-up technology. The boats are made of fiberglass, that is, of modern materials that guarantee quality and durability.	7	414
NAVALIS d.o.o.	Podstrana	2000	Provides reliable engineering solutions in ship construction and piping, offshore and inshore constructions.	92	6.800
NUIČ NAUTIKA d.o.o.	Kaštel Sućurac	2013	Manufacture, repairing and maintenance of boats and yachts and other products made of fibre reinforced thermosetting resins.	37	4.290
OŠTRO d.o.o.	Gustirna	2010	Building aluminum ships for Norway market including full services together with partners from: engineering, hull production, engines installation, electrical installations, hydraulic installation, pipe installation, assembly of isolation, furniture assembly, etc.	4	5.300
PAKLENI OTOCI d.o.o.	Split	2004	Production of boats, ranging from 25 to 50 feet, designed for heavy-duty and professional commercial usage.	31	2.840
POMRAD INŽENJERING d.o.o.	Split	2003	Construction company with headquarters in Split, specialized in all kinds of marine construction works. Field of action: Ports, Marinas, Quays and berths, submarine pipelines and outfalls, civil engineering and other works, shipyards.	131	26.120
PRIMA NAVIS d. o. o.	Trogir	2011	Specializes in the manufacture of ship and metal structures, electro-installations and electro-welding works on ships and land installations.	34	467
RAMINA-POMORSTVO d.o.o.	Split	1997	Production of small sailboats with a length up to 3.6 meters.	5	190
RAND SHIPYARD d.o.o.	Kaštel Sućurac	2019	Pioneering producer of innovative and modern sports boats.	94	5.400

Overview of maritime technology companies (1/8) – Construction of ships/vessels and floating structures

Company	Location	Established	Product/service/solution	Number of employees	Revenue (2022) in T EUR
RIBAR I MORE d.o.o.	Danilo Biranj	2005	Repairing, designing and building yachts from modern materials.	N/A	23
SALONA GRUPA d.o.o.	Solin	2009	Building performance cruiser yacht that would match racing performance of the best racers on the market, as well as provide comfortable cruising abilities.	5	2.530
SALONA VAR d.o.o.	Solin	1997	Manufacturing of heavy-duty aluminum vessels.	17	971
SAVVY SOLUTIONS d.o.o.	Split	2003	Production of modular electric watercraft with infinite customisation possibilities.	2	36
SIFLEKS d.o.o.	Split	2017	Execution and creation of tasks and works in shipbuilding. Precision welding and construction, as well as other tasks and works.	53	3.480
ŠKVER KUŠTERA, d.o.o.	Kraj (Pašman)	2000	Small ship building.	7	407
VELUM NAUTICA d.o.o.	Omiš	2002	Creating completely new structural solutions made of glass-reinforced polyester.	11	643
VEN-ZORANA j.d.o.o.	Split	2013	Small ship building. Production of the monohull powercrafts with cabin and outboard engines.	6	182
VINETA d.o.o. (Monachus Boatyard)	Gornji Muć	2009	Products of boats and yachts using modern technology and traditionally reliable manufacturing methods with the use of modern materials, and with semi-custom construction.	10	1.060

Overview of maritime technology companies (2/8) – Technical consultancy

Company	Location	Established	Product/service/solution	Number of employees	Revenue (2022) in T EUR
ADVANCED SOLUTIONS d.o.o.	Split	2017	Develop and design innovative, modern and high quality technical services in the maritime sector, applying technologically advanced and economically efficient solutions.	3	281
ARMANIJA d.o.o.	Split	2004	Design and engineering for the shipbuilding industry.	7	156
CAPAX d.o.o.	Šibenik	2008	Consulting services and project management for new builds and refits, yacht surveys, preventive maintenance and safety management for luxury yachts.	26	13.210
CEME-MARINE CONSULTING d.o.o.	Podstrana	2017	Consulting services in the maritime industry. Covers requirements for various types of ships, yachts and special structures: Ships (BSV, DSV, MPV, tankers, passenger ships, etc.) Yachts.	N/A	N/A
CRONOMAR d.o.o.	Šibenik	2009	Providing collaboration with globally oriented companies, associations, clusters, educational institutions, R&D sector, and individuals with knowledge and skills in this area.	7	3.390
GLAVNO REBRO d.o.o.	Solin	2006	Shipbuilding consultancy. Contacts with yards, project management. Great experience in boat, yacht and ship design.	1	41
GLOBAL OFFSHORE ENGINEERING d.o.o.	Brač, Sutivan	2014	Cover all phases of the project cycle, from idea and design, drawings and supporting documentations, through manufacturing and commissioning to operational support and maintenance services.	43	2.800
GM TURBO d.o.o.	Split	1998	Offers design, engineering and consulting in shipbuilding, a wide range of services for workboats and yachts up to 40 meters.	5	801
MARAL TECHNOLOGIES d.o.o.	Solin	2014	Mechanical engineering company experienced in (re)manufacturing, maintenance and repair of professional marine equipment.	N/A	66
MARINE DESIGN d.o.o.	Kaštel Staffilić	2007	Designing, projecting and consulting in shipbuilding.	7	529

Overview of maritime technology companies (2/8) – Technical consultancy

Company	Location	Established	Product/service/solution	Number of employees	Revenue (2022) in T EUR
MARINETEK ADRIATIC d.o.o.	Šibenik	2005	Consultancy in the construction of nautical tourism port.	18	4.290
OBALA d.o.o.	Split	1996	Specialized consulting and design organization for maritime construction	12	483
OMNIMONT d.o.o.	Vodice	1997	Naval Architecture and Design Yacht company. OMNIMONT d.o.o. have the skills and knowledge to offer a world class Naval Architectural and engineering service and an unmatched depth of experience with all hull form types, propulsion systems, concepts, and structural materials.	2	57
PLOVPUT d.o.o.	Split	1998	Plovput d.o.o. is a limited liability company 100% owned by the Republic of Croatia. Installation of navigation safety facilities on waterways in internal sea waters and the territorial sea of the Republic of Croatia and ensuring their proper operation.	252	12.220
PROMAR DESIGN d.o.o.	Kaštel Novi	2006	Company experienced in designing all types of vessels.	3	103
RUSKOVIĆ BRODARSTVO d.o.o.	Dubrovnik	2006	Offers various marine surveying services.	2	193
SOCIUS d.o.o.	Split	2011	Provides consultancy and services in the field of shipbuilding, ship management, Oil & Gas, energy, transportation and defense.	9	358
THOME CROATIA d.o.o.	Zadar	2017	Wide range of comprehensive and innovative marine services.	45	7.320

Overview of maritime technology companies (3/8) – Propulsion and maneuvering

Company	Location	Established	Product/service/solution	Number of employees	Revenue (2022) in T EUR
ADRIATIC PROPELERI d.o.o.	Bibinje	2018	Manufacture of ship's propellers diameter up to 1600 mm. specialized in diagnostics, repair, modification and optimization of marine propellers for all types of vessels.	12	991
GUMIS d.o.o.	Solin	2012	Metal machining and rubber molding company. Provides specialised engineering and manufacturing services in small or large volumes and also supplies standard engineering components such as vibration dampers and engine mounts, rubber and silicone membranes and gaskets, shaft couplings with rubber inserts in any shape, size or material.	24	3.880
MARAL TECHNOLOGIES d.o.o.	Solin	2014	Spin-off of a mature mechanical engineering company processing to design and construction of aluminum working boats and floating structures.	N/A	66
RAMINA-POMORSTVO d.o.o.	Split	1997	Specialized company for masts, rigging of sailboats and sailboats. We produce custom-made aluminum masts from sparcraft components.	5	190
SAJLA COM d.o.o.	Vodice	2017	Specializes in masts, rigging of sailboats and everything related to sailboats.	5	325
SALONA VAR d.o.o.	Solin	1997	Manufacturing propeller shaft up to 8 meter cones for propeller shafts up to 6 meters (using a hydraulic copier). Desings and manufactures aluminum parts and constructions to order such as water tanks and various fuel tanks, pontoons, barges, boarding ramps and equipment for hybrid boats.	17	971

Overview of maritime technology companies (4/8) – Technical equipment

Company	Location	Established	Product/service/solution	Number of employees	Revenue (2022) in T EUR
ADRIA WINCH d.o.o.	Split	1996	Worldwide supplier of deck machinery. The custom designed AW winches, are built to meet demanding technical characteristic and extreme weather conditions in harsh environments.	31	6.670
DALSTROJ d.o.o.	Split	1997	Production of various kinds of deck machinery to different hosting and anchor handling equipment.	5	3.650
DANG d.o.o.	Split	1997	Manufacture of Zn and Al anodes for anticorrosive protection for application in shipbuilding.	5	442
ELMAR ELECTRONIC d.o.o.	Split	1996	Electrical engineering and electronics, ship equipment, maintenance and service.	18	2.700
GLOBAL OFFSHORE ENGINEERING d.o.o.	Brač, Sutivan	2014	Recognised company for innovative and efficient subsea technologies and equipment production.	43	2.800
JADRAN TEHNIKA d.o.o.	Ostrvica	2019	Deals with mechanical engineering and related activities. Provides support through the maintenance and overhaul of their work equipment, especially in the shipping and construction industries. Example is construction of ship deck crane.	2	88
LOCOMARINE d.o.o.	Zadar	2009	Manufactures ship computers and monitors and WIFI/LAN systems yacht router and ship router.	1	138
MARAL TECHNOLOGIES d.o.o.	Solin	2014	Mechanical engineering company experienced in (re)manufacturing, maintenance and repair of professional marine equipment.	N/A	66
MARINE CONSTRUCT d.o.o.	Split	2008	Provides tailored marine equipment for a number of specialist markets.	15	773

Overview of maritime technology companies (4/8) – Technical equipment

Company	Location	Established	Product/service/solution	Number of employees	Revenue (2022) in T EUR
MARINETEK ADRIATIC d.o.o.	Šibenik	2005	Authorized representative for the production and sale of all marine equipment of the Marinetek brand and offers a wide range of pontoons, ranging from light wooden pontoons to heavy waves, as well as a wide selection of standard and safety equipment for pontoons and marinas.	18	4.290
METAL PRODUKT d.o.o.	Danilo Biranj	2017	Offers products for the nautical industry made of stainless steel or hot-dip galvanized steel.	23	1.050
MULTIPLJET d.o.o.	Zadar	1996	Rope and cord production.	5	128
PLOVPUT d.o.o.	Split	1998	Plovput d.o.o. is a limited liability company 100% owned by the Republic of Croatia. Installation of navigation safety facilities on waterways in internal sea waters and the territorial sea of the Republic of Croatia and ensuring their proper operation.	252	12.220
POMORSKI CENTAR ZA ELEKTRONIKU d.o.o.	Split	1998	Naval combat information and weapon control systems C3I systems Naval internal and external communication systems Secure communication devices and systems Ship's inertial navigation, hydro-acoustic and radio-navigation systems	25	921
RADEŽ d.d.	Blato	1996	Manufacture of ship equipment and steel structures. manufactures marine equipment for customers around the world.	301	11.460
SALONA VAR d.o.o.	Solin	1997	Manufacturing propeller shaft up to 8 meter cones for propeller shafts up to 6 meters (using a hydraulic copier). Desings and manufactures aluminum parts and constructions to order such as water tanks and various fuel tanks, pontoons, barges, boarding ramps and equipment for hybrid boats.	17	971
TIMEK d.o.o.	Split	1997	Production of all types of slings (bragi), made of steel ropes, as well as chain slings.	4	438
TKV d.o.o.	Zadar	1996	Rope and cord factory. The production program of the company is divided into the retail line, comprising consumer goods, and the wholesale line, custom-made products, and specialized applications in shipbuilding.	17	1.060

Overview of maritime technology companies (5/8) – Software

Company	Location	Established	Product/service/solution	Number of employees	Revenue (2022) in T EUR
ELNAV, obrt za usluge i trgovinu	Split	2021	Develops systems with state of the art technology to keep the ships safe Improving the safety of navigation.	N/A	128
GALIOT AERO d.o.o.	Split	1997	Provides dedicated software package special designed for large and small Ship Management Companies working all over the world. Galiot Maritime System with integrated inexpensive bidirectional asynchronously data transfer application is effective fleet maintenance management tool where office (superintendents) has up-to-date information about all ship activities.	3	310
LOOP j.d.o.o. (NECOGI)	Kaštel Lukšić	2013	AI tool to help underwater nature. Solving the problems of underwater and beach litter, vegetation and animal migration by using drones and AI computer vision.	9	407
OCULI MARE d.o.o.	Split	2019	Sutononomous mooring monitoring system. Marine Eye is an innovative mooring and marina monitoring system that combines mechanical-gravity and optical sensors with advanced software solutions for the detection of moorings and leaving moorings.	3	86
POMORSKI CENTAR ZA ELEKTRONIKU d.o.o.	Split	1998	Integration of electronic systems (hardware and software) of different manufacturers and technologies.	25	921

Overview of maritime technology companies (6/8) – R&D

Company	Location	Established	Product/service/solution	Number of employees	Revenue (2022) in T EUR
MARAL TECHNOLOGIES d.o.o.	Solin	2014	Innovative products and solutions for mariculture (fish feeding system, net cleaners, fish spawning systems, multifunctional hybrid vessels).	N/A	66
MARINETEK ADRIATIC d.o.o.	Šibenik	2005	Development of innovative blue technologies for marine superstructure.	18	4.290
NUIČ NAUTIKA d.o.o.	Kaštel Štafilić	2013	Research and development of new type of vessels that do not pollute the environment, the so-called hybrid.	37	4.290
PLOVPUT d.o.o.	Split	1998	Plovput d.o.o. is a limited liability company 100% owned by the Republic of Croatia. Carrying out research and design in order to carry out tasks from one's own activity.	252	12.220
SALONA VAR d.o.o.	Solin	1997	Innovative solutions for maintenance and repair of marine equipment.	17	971

Overview of maritime technology companies (7/8) – Subsea Equipment

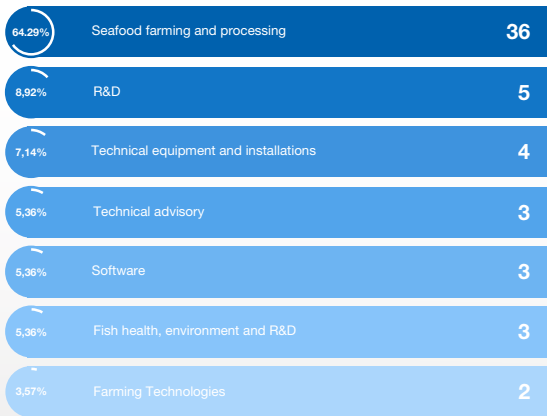
Company	Location	Established	Product/service/solution	Number of employees	Revenue (2022) in T EUR
CONNECTOR SUBSEA d.o.o.	Split	2016	Supplies novel, reliable and cost-effective solutions for subsea and deepwater projects and has a proven track record from some of the world's most demanding subsea environments.	10	653
GLOBAL OFFSHORE ENGINEERING d.o.o.	Brač, Sutivan	2014	Provides subsea and subsurface technologies, innovative solutions and services in many aspects of oil and gas service equipment engineering.	43	2.800
MARANA d.o.o.	Klis	1997	Production of ocean buoys and subsea probes.	37	2.860
MARAL TECHNOLOGIES d.o.o.	Solin	2014	Innovative products and solutions for mariculture (fish feeding system, net cleaners, fish spawning systems, multifunctional hybrid vessels).	N/A	66

Overview of maritime technology companies (8/8) – Drones and autonomy

Company	Location	Established	Product/service/solution	Number of employees	Revenue (2022) in T EUR
ALPHA SAGITTARIUS d.o.o	Split	2018	Engineering design, manufacturing and consulting firm focused on smart autonomous unmanned systems. Product range consists of proprietary hardware and software solutions and associated services for unmanned systems combining artificial intelligence, modular design and green technologies.	3	64
LOOP j.d.o.o. (NECOGI)	Kaštel Sućurac	2013	AI tool that uses computer vision and drones to help solve problems of underwater and beach litter, vegetation, and animal migration. With over 10,000 images trained on a powerful neural network, Necogi detects underwater garbage, tracks plant growth, and visualizes animal migration. Customizable and easy to use, Necogi is a powerful tool for fighting pollution.	9	407

Marine technology companies in Dalmatia in 2023

Total marine number of companies per subsector

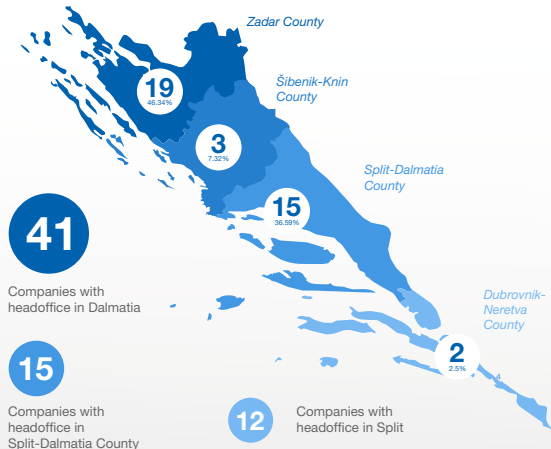


TOTAL no. of marine companies

(41 unique) **56**

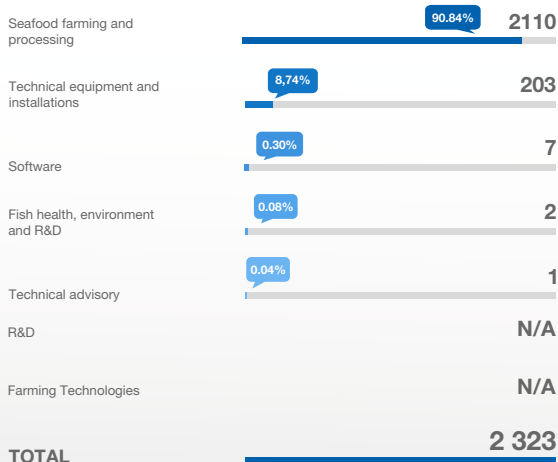
Please note that companies can belong to more than 1 subsector, therefore the total number of companies displayed is higher

Map of Dalmatia with information about companies locations



2323 employees in the identified marine technology companies in Dalmatia

Total marine employees per subsector

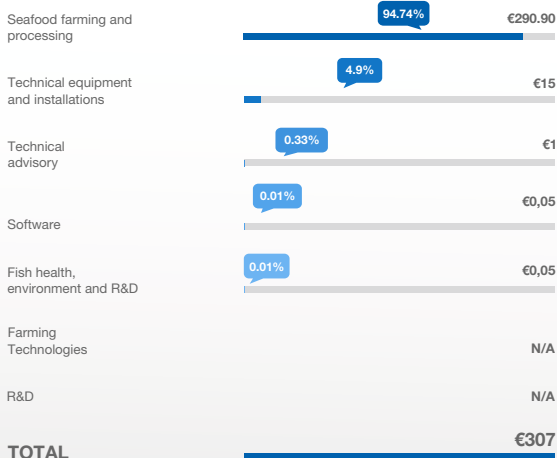


Top 20 employers

Company	Sector	No. of employees
Cromaris d.o.o.	Seafood farming and processing / R&D	489
Sardina d.o.o.	Seafood farming and processing	340
Conex trade d.o.o.	Seafood farming and processing	223
Pelagos net farma d.o.o.	Seafood farming and processing	132
Jadran-tuna d.o.o.	Seafood farming and processing	104
Centaurus d.o.o.	Seafood farming and processing / R&D	101
Marikomerc d.o.o.	Seafood farming and processing	91
Mardešić d.o.o.	Seafood farming and processing	90
Kali tuna d.o.o.	Seafood farming and processing	81
Kornat Ittica d.o.o.	Seafood farming and processing	59
Mišlov d.o.o.	Seafood farming and processing	59
Arbacommerce d.o.o.	Seafood farming and processing	55
Teši tunolov d.o.o.	Seafood farming and processing	49
Ancora commerce d.o.o.	Seafood farming and processing	44
Seashell d.o.o.	Seafood farming and processing	31
San-žak d.o.o.	Seafood farming and processing	20
Marina njiva d.o.o.	Seafood farming and processing	20
Marinex & Co, d.o.o.	Seafood farming and processing	19
Adriatic farming d.o.o.	Seafood farming and processing	19

Total revenue of 307 M EUR for the 41 identified marine technology companies

Total marine revenue per subsector



Providers of seafood farming and processing constitute 94.74% of total revenue

Since companies can be active in more than one subsector, companies' revenue is only included in the company's main subsector

Top 20 earners

Company	Sector	Revenue (in T EUR)
Cromaris d.d	Seafood farming and processing	94.240
Sardina d.o.o.	Seafood farming and processing	32.520
Conex trade d.o.o.	Seafood farming and processing	21.710
Marikomerc d.o.o.	Seafood farming and processing	18.320
Cenaturus d.o.o.	Seafood farming and processing / Software	17.170
Pelagos net farma d.o.o.	Seafood farming and processing	17.030
Kornat Ittica d.o.o.	Seafood farming and processing	15.940
Jadran-tuna d.o.o.	Seafood farming and processing	14.440
Kali tuna d.o.o.	Seafood farming and processing	10.840
Mardešić d.o.o.	Seafood farming and processing	8.330
Arbacommerce d.o.o.	Seafood farming and processing	7.550
Ancora commerce d.o.o.	Seafood farming and processing	5.020
Mišlov d.o.o.	Seafood farming and processing	3.870
Canicula d.o.o.	Seafood farming and processing	2.910
Martinović-fish d.o.o.	Seafood farming and processing	2.900
Marinex & Co d.o.o.	Seafood farming and processing	2.680
Teši tunolov d.o.o.	Seafood farming and processing	2.020
San-žak, d.o.o.	Seafood farming and processing	1.770

Overview of marine technology companies in Dalmatia

Seafood farming and processing

ADRIA OCTOPUS d.o.o.
ADRIATIC FARMING d.o.o. ■
 AKVAKULTURA d.o.o.
 ANCORA COMMERCE d.o.o.
 ARBACOMMERCE d.o.o.
 BEK-PUŠNICA d.o.o.
 CANICULA d.o.o.
 CENTAURUS d.o.o.
 CONEX trade d.o.o.
 CROMARIS d.d.
 DAJNA KORNATI d.o.o.
 FRESH FISH d.o.o.
 FRIŠKINA d.o.o.
 HAMA d.o.o.
 JADRAN-TUNA d.o.o.
 KALI TUNA d.o.o.
KAMENO DOBA d.o.o. ■
 KLISMAR SPLIT d.o.o.

KORNAT ITTICA d.o.o.
 LIMBORA d.o.o.
 MARDEŠIĆ d.o.o.
 MARIKOMERC d.o.o.
 MARIKULTURA FORTICA d.o.o.
 MARINA NJIVA d.o.o.
 MARINEX & CO d.o.o.
 MARTINOVIĆ-FISH d.o.o.
 MIŠLOV d.o.o.
 NONOS DYO d.o.o.
 PADRELE RIBA d.o.o.
 PELAGOS NET FARMA d.o.o.
 PLANKTON TRADE d.o.o.
 RIBA MLJET d.o.o.
 SAN-ŽAK d.o.o.
 SARDINA d.o.o.
 SEASHELL d.o.o.
 TEŠI TUNOLOV d.o.o.

Farming Technologies

MARAL TECHNOLOGIES d.o.o.
 SALONA VAR d.o.o.

Technical equipment and installation

ACCIONA ENERGIJA d.o.o.
 GIS AQUA AUSTRIA GmbH
 MARAL TECHNOLOGIES d.o.o.
 MIAB d.o.o.
 SALONA VAR d.o.o.

Software

AKVAKULTURA d.o.o.
 BEDALOV d.o.o.
 MARIKOMERC d.o.o.

Technical Advisory

AKVAKULTURA d.o.o.
 CRONOMAR d.o.o.
 MARAL TECHNOLOGIES d.o.o.

Fish health, environment and R&D

MARIKOMERC d.o.o.
 MARAL TECHNOLOGIES d.o.o.
UNDERWATER ACOUSTICS d.o.o. ■

R&D

BEDALOV d.o.o.
 CENTAURUS d.o.o.
 CROMARIS D.D.
 MARAL TECHNOLOGIES d.o.o.
 SALONA VAR d.o.o.

Overview of marine technology companies (1/6) – Seafood farming and processing

Company	Location	Established	Product/service/solution	Number of employees	Revenue (2022) in T EUR
ADRIA OCTOPUS d.o.o.	Biograd na moru	1997	Sea fishing.	12	1.330
ADRIATIC FARMING d.o.o.	Zadar	2018	Marine aquaculture california trout raised at sea.	19	639
AKVAKULTURA d.o.o.	Zadar	2012	In addition to its own fish food warehouse (map) and logistics, Akvakultura provides its customers with the delivery of fish food directly to the farm.	1	1.010
ANCORA COMMERCE, d.o.o.	Dugopolje	1997	Company for fishing, trade and processing of sea fishing products. The production facility in Dugopolje is responsible for the complete production of fresh and frozen products.	44	5.020
ARBACOMMERCE, d.o.o.	Zadar	1998	Processing tons of small blue fish, primarily sardines and anchovies. Modern plant for fish processing.	55	7.550
BEK-PUŠNICA d.o.o.	Kaštel Stari	2009	Production of smoked fish by using the traditional method of processing, natural smoking, without using additives and unnatural additives.	6	731
CANICULA d.o.o.	Gizdovac	2011	Deals with salting and fish processing in accordance with Mediterranean customs.	N/A	2.910
CENTAURUS d.o.o.	Solin	2009	Company that deals with distribution, retail and export of fresh and frozen fish and delicatessen products from the sea in the HoReCa segment.	101	17.170
CONEX TRADE d.o.o.	Čaprice	2003	Leader in the territory of the Republic of Croatia in the fishing and fish processing sector. The only company in the Mediterranean that owns a line for freezing in brine according to the IQF system, with a capacity of 6 tons per hour. Production processes consist of salting, IQF freezing, marinating and canning sardines.	223	21.710

Overview of marine technology companies (1/6) – Seafood farming and processing

Company	Location	Established	Product/service/solution	Number of employees	Revenue (2022) in T EUR
CROMARIS d.d.	Zadar	2009	Leader in the production and processing of premium Mediterranean fish of the highest quality and the sixth company in the breeding of sea bass and sea bream in the world in terms of production volume, and at the same time the fastest growing company with a trend of further growth.	489	94.240
DAJNA KORNATI d.o.o.	Murter	2005	Deals with the purchase, import, export and processing of fish, in addition to the production and packaging of its own original products and their retail sale.	1	100
FRESH FISH d.o.o.	Lovište	1998	Is engaged in breeding and selling sea bream and sea bass from the Adriatic Sea.	6	640
FRIŠKINA d.o.o.	Klis	1998	For growing fish and shellfish. The primary activity is mariculture, i.e. the breeding of marine fish, where they follow the highest standards.	4	1.140
HAMA d.o.o.	Bogomolje	2000	White fish breeders.	4	180
JADRAN-TUNA d.o.o.	Biograd na moru	1997	Growing and exporting bluetail tuna. The most modern system for freezing small bluefish IQF -CO2. The cold store has a capacity of 3,000 tons. The company owns fishing vessels, logistics vessels and farm service vessels.	104	14.440
KALI TUNA, d.o.o.	Kali	1996	Creates, manufactures and delivers high quality, fresh and frozen mariculture and fishery products that will anticipate and meet consumer needs.	81	10.840
KAMENO DOBA d.o.o.	Raslina	2018	Fish farm. Breeding and processing of fish. Space is a very important factor for the quality of fish, lower density in breeding cages for fish means a greater proportion of natural food, and enables better and healthier development.	6	417
KLISMAR SPLIT d.o.o.	Split	1995	White fish breeders.	8	626
KORNAT ITTICA d.o.o.	Pakoštane	2014	Breeding of white fish in Croatia.	59	15.940

Overview of marine technology companies (1/6) – Seafood farming and processing

Company	Location	Established	Product/service/solution	Number of employees	Revenue (2022) in T EUR
LIMBORA, d.o.o.	Tkon	1996	For growing and trading fish and shellfish.	2	298
MARDEŠIĆ d.o.o.	Dugi Otok	2005	Long tradition of processing blue fish located in Sali on Dugi otok.	90	8.330
MARIKOMERC, d.o.o.	Pločnik	1997	Processor and distributor of frozen fresh smoked, dried, marinated and salted seafood products.	91	18.320
MARIKULTURA FORTICA d.o.o.	Pag	2003	Sea fishing.	N/A	N/A
MARINA NJIVA d.o.o.	Kali	1996	Sea fishing.	20	1.100
MARINEX & CO, d.o.o.	Split	1998	Deals with fishing, fish and shellfish farming.	19	2.680
MARTINOVIĆ-FISH d.o.o.	Ugljan	1996	Company that grows, transports and sells indigenous Adriatic fish while applying the most modern world knowledge and technologies in the production cycle.	9	2.900
MIŠLOV d.o.o.	Poličnik	2001	Catch, processing and wholesale of blue fish and fishery products on the domestic and international market. In order to preserve the freshness of the caught fish, we start cooling it on the ship and deliver it to the production plant and other destinations with our own refrigerated trucks. Processing includes freezing with the IQF system (individual freezing of fish), salting and marinating sardines and anchovies.	59	3.870
NONOS DYO d.o.o.	Ston	2011	Center for mariculture.	3	387

Overview of marine technology companies (1/6) – Seafood farming and processing

Company	Location	Established	Product/service/solution	Number of employees	Revenue (2022) in T EUR
PADRELE RIBA d.o.o.	Zadar	2012	Carrying out retail, wholesale and processing of fishery products.	12	1.020
PELAGOS NET FARMA d.o.o.	Zadar	2013	One of the leading producers and exporters of high quality tuna. Equipped the fishing fleet and built the aforementioned cold storage and anchovy processing plant.	132	17.030
PLANKTON TRADE d.o.o.	Metković	1998	Company that has respectable equipment on land and at sea, with its own fleet, and uses the most modern technological process in production, which ensures maximum fish health. With this, Plankton trade d.o.o. actually and formally acquired the status of a European company, certified according to the HACCP standard.	3	312
RIBA-MLJET d.o.o.	Babino Polje	2003	Marine aquaculture. deliver the most natural, healthy and best tasting fish by using the method of nature and scientific innovations.	8	1.380
SAN-ŽAK, d.o.o.	Biograd na moru	1998	Sea fishing.	20	1.770
SARDINA d.o.o.	Postira	1996	Engaged in catching, processing and preserving fish and growing mariculture products on its farms. With a centuries-old business tradition, is one of the leading Croatian companies in the fishing and fish processing sector, with a strong emphasis on the export of its products. and fish oil.	340	32.520
SEASHELL d.o.o.	Okrug Gornji	2016	Modern cultivation of autochthonous species. Norway's SMARTFARM farming technology is unique in the shellfish farming system in the world, and here it is applied with the most modern technology and constant supervision by experts. Grows, processes and sells autochthonous Adriatic fish and shellfish, guaranteed without GMOs.	31	1.210
TEŠI TUNOLOV, d.o.o.	Pločnik	1996	For catching, farming, processing, fish trade and catering. From fishing by own fleet in the Adriatic Sea (FAO zone 37) using seine nets, transport with own refrigerated trucks, to processing in a new factory with the most modern technology.	49	2.020

Overview of maritime technology companies (2/6) – Farming technologies

Company	Location	Established	Product/service/solution	Number of employees	Revenue (2022) in T EUR
MARAL TECHNOLOGIES d.o.o.	Split	2014	Innovative products and solutions for mariculture (fish feeding system, net cleaners, fish spawning systems, multifunctional hybrid vessels).	N/A	66
SALONA VAR d.o.o.	Solin	1997	Leader in innovative solutions for maintenance and repair of mariculture equipment.	17	971

Overview of maritime technology companies (3/6) – Technical equipment and installations

Company	Location	Established	Product/service/solution	Number of employees	Revenue (2022) in T EUR
ACCIONA ENERGIJA d.o.o.	Split	2013	Water treatment sector through the design, construction and operation of drinking water treatment plants, wastewater treatment plants, reverse osmosis desalination plants and tertiary treatment for water reuse, and has increased its focus on services for cities.	149	1.190
GIS Aqua Austria GmbH	Split	2008	Provides sustainable environment-friendly solutions in waste water treatment, drinking water treatment and desalination.	8	7.840
MARAL TECHNOLOGIES d.o.o.	Split	2014	Innovative products and solutions for mariculture (fish feeding system, net cleaners, fish spawning systems, multifunctional hybrid vessels).	N/A	66
MIAB d.o.o.	Šibenik	1998	Perform all types of work related to the construction, commissioning and maintenance of buildings in drinking and waste water systems, as well as energy systems, assembly of mechanical and electrical equipment, automatic control and regulation of technological systems, as well as measurements in water supply systems.	46	6.000
SALONA VAR d.o.o.	Solin	1997	Leader in innovative solutions for maintenance and repair of mariculture equipment.	17	971

Overview of maritime technology companies (3/6) – Technical advisory

Company	Location	Established	Product/service/solution	Number of employees	Revenue (2022) in T EUR
AKVAKULTURA d.o.o.	Zadar	2012	Complete consulting in the process of breeding white marine fish (creating a feeding strategy, veterinary and sanitary monitoring of fish, drawing up HACCP for the needs of the farm and related facilities, making an economic justification study for the needs of the farm).	1	1.010
CRONOMAR d.o.o.	Šibenik	2009	Croatian company in Norwegian ownership, based in Šibenik. Supports innovation in the maritime / marine sector by providing collaboration with globally oriented companies, associations, clusters, educational institutions, R&D sector, and individuals with knowledge and skills in this area.	7	3.390
MARAL TECHNOLOGIES d.o.o.	Split	2014	Professional marine equipment. Private company specialized in development and manufacturing of custom made mechanical engineering solutions for marine industry. Spin-off of a mature mechanical engineering company, its services range from technical advisory, R&D and manufacturing of specialised equipment for seafood farming.	N/A	66

Overview of maritime technology companies (4/6) – Software

Company	Location	Established	Product/service/solution	Number of employees	Revenue (2022) in T EUR
AKVAKULTURA d.o.o.	Zadar	2012	Development of software for detecting the size of fish in cages.	1	1.010
BEDALOV d.o.o.	Kaštel Sućurac	2016	Research & development company committed to bringing solutions that help researchers. working on scientific and technological projects in the field of smart structure recognition in digital imaging for research purposes, as well as on the interfaces in medical bionics. Karmen studio is an aquaculture AI Fish & Nets video inspection software. Karmen studio's algorithm is one of the world's Most advanced aquaculture video analysis solution.	7	52
MARIKOMERC, d.o.o.	Poličnik	1997	Software with an apparatus for ATP swabs with which we will control the hygienic process much more strictly, for the purpose of food safety, to later introduce certificates and standards for higher product quality.	N/A	18.320

Overview of maritime technology companies (5/6) – Fish health, environment and R&D

Company	Location	Established	Product/service/solution	Number of employees	Revenue (2022) in T EUR
MARAL TECHNOLOGIES d.o.o.	Split	2014	Professional marine equipment. Private company specialized in development and manufacturing of custom made mechanical engineering solutions for marine industry. Spin-off of a mature mechanical engineering company, its services range from technical advisory, R&D and manufacturing of specialised equipment for seafood farming.	N/A	66
MARIKOMERC, d.o.o.	Poličnik	1997	Innovation in the food safety process, software with an apparatus for ATP swabs with which we will control the hygienic process much more strictly, for the purpose of food safety, to later introduce certificates and standards for higher product quality.	91	18.320
UNDERWATER ACOUSTICS d.o.o.	Nečujam	2018	Founded to improve an innovative product - an ultrasonic antifouling device which is used for separate fouling of algae, shells and other marine organisms on ship hulls. The first version of the product has already been developed and contains the latest technology and an innovative approach to the fouling section on ship hulls. The subject of this company's business is the adaptation of that developed innovative product market and the placing on the market of two new versions of Algae Away 2 and Algae Away 4. In addition to the production of ultrasonic equipment, the company deals with underwater acoustic measurements, 3D prediction and actual modeling of underwater sound propagation, and consulting in shipbuilding.	2	49

Overview of maritime technology companies (6/6) – R&D

Company	Location	Established	Product/service/solution	Number of employees	Revenue (2022) in T EUR
BEDALOV d.o.o.	Kaštel Sućurac	2016	Bedalov d.o.o. is a Croatian research & development company committed to bringing solutions that help researchers. working on scientific and technological projects in the field of smart structure recognition in digital imaging for research purposes, as well as on the interfaces in medical bionics. Karmen studio is an aquaculture AI Fish & Nets video inspection software. Karmen studio's algorithm is one of the world's most advanced aquaculture video analysis solution.	7	52
CENTAURUS d.o.o.	Solin	2009	Centaurus is a company that deals with distribution, retail and export of fresh and frozen fish and delicatessen products from the sea in the HoReCa segment.	101	17.170
CROMARIS d.d.	Zadar	2012	Improving the production process, developing our products and meeting the highest standards of quality, food safety, environmental protection and aquaculture sustainability.	489	94.240
MARAL TECHNOLOGIES d.o.o.	Split	2014	Professional marine equipment. Private company specialized in development and manufacturing of custom made mechanical engineering solutions for marine industry. Spin-off of a mature mechanical engineering company, its services range from technical advisory, R&D and manufacturing of specialised equipment for seafood farming.	N/A	66
SALONA VAR d.o.o.	Solin	1997	Water treatment sector through the design, construction and operation of drinking water treatment plants, wastewater treatment plants, reverse osmosis desalination plants and tertiary treatment for water reuse, and has increased its focus on services for cities.	17	971

Example of important development partners and customers for ocean technology companies in Dalmatia

Maritime and coastal passenger transport

Company	Location	Revenue M EUR
Kapetan Luka – Krilo, obrt za prijevoz	Šibenik	10,38
G & V Line ladera d.o.o.	Zadar	4,40
More Yacht Club d.o.o.	Trogir	4,13
Ivan cruising d.o.o.	Jesenice	2,74
Javorak d.o.o.	Jesenice	2,42
Eleganza crusing d.o.o.	Podstrana	2,13
Providnost d.o.o.	Jesenice	2,10
Trogir-maritime d.o.o.	Trogir	2,08
Ercegović Lanterna d.o.o.	Jesenice	2,01
Krilo shipping company d.o.o.	Jesenice	1,86

Maritime and coastal transport of goods

Company	Location	Revenue M EUR
Tankerska plovdba d.d.	Zadar	94,24
Tankerska next generation d.d.	Zadar	17,03
Atlanska plovdba d.d.	Dubrovnik	15,94
Jadroplov d.d.	Split	10,84
Medservis d.o.o.	Šibenik	2,90
Brodsko upravljanje d.o.o.	Split	2,68
Pločanska plovdba d.o.o.	Ploče	1,38
Brodske građevine d.o.o.	Solin	1,21
Nave Maris d.o.o.	Vrgorac	1,14
Jadranska plovdba d.o.o.	Mršane	0,64

Location of listed development partners and customers



04 R&D Community



Universities and institutes with R&D

University of Split (UNIST)

University of Split, with attractive and modern study programs, follows current science and higher education trends. The University consists of 11 faculties and over 180 study programs conducted in the fields of social sciences, humanities, arts, natural, technical, biotechnical, medical, and biomedical sciences.

The University's research for this project focuses on scientific areas concerning disciplines characterized by biological, biomedical, cultural, historical, social, economic, and other features of the region as a part of the entire Croatian Adriatic and Mediterranean region. That involves the research and protection of oceanography and fishing, Adriatic botany and zoology, island and coastal economy, Adriatic tourism, maritime law, nautical science, naval architecture, and a range of other specific, all of which distinguish the University of Split, not only in Croatia but also beyond its borders.

UNIST has a center of Excellence, laboratories, and digital innovation hub that are active in the blue technology field:

- Center of Excellence for Science and Technology (STIM-REI)
- Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture (FESB)
 - Laboratory for naval architecture
- Faculty of Maritime Studies (PFST)
 - Laboratory for testing polymer and conventional sliding bearings
- BlueDIH

Hydrographic Institute of the Republic of Croatia (HHI)

Hydrographic Institute of the Republic of Croatia (HHI) carries out hydrographic activity of interest to the Republic of Croatia, which includes scientific research activities and activities as well as development and professional activities related to the safety of navigation in the Adriatic, hydrographic-geodetic surveying of the Adriatic, marine geodesy, design and production of maritime charts and publications, oceanological research, research underwater geology and publishing and printing.

The institute is authorized to develop the navigation safety service in the Adriatic within the framework of the world navigation safety system, in cooperation with the Ministry of the Sea, Transport and Infrastructure, port authorities, port authorities, the Croatian Navy, the institution for the maintenance of maritime waterways and hydrographic institutes and offices of maritime countries of the world, in accordance with the recommendations: International Hydrographic Organization(IHO), International Maritime Organization (IMO), International Association of Marine Aids to navigation and lighthouse authorities (IALA).

The Croatian Hydrographic Institute has two research ships (Hidra and Palagruža) and a small boat, which are intended for carrying out hydrographic activities.

Universities and institutes with R&D

Institute of Oceanography and Fisheries (IOR)

The Institute of Oceanography and Fisheries (IOR) was founded in 1930 as the first national scientific institution dedicated to marine research. The scientific activity of the Institute has been multidisciplinary from the beginning, encompassing biological, chemical, and physical oceanography as well as sedimentology, fishery, and mariculture.

The primary focus of the Institute of Oceanography and Fisheries is to conduct scientific research through projects funded by the Croatian Science Foundation. Those research aims to uncover the complex interactions that shape the marine environment and to better understand the functioning of the ecosystem in order to create measures for the protection of the Adriatic and its resources for sustainable exploitation.

In addition, numerous projects funded by the European Commission or different commercial entities, enable us to carry out monitoring of populations and stocks of marine organisms, biotope mapping, initial assessments of the marine environment, and various studies on environmental state and impacts. The data collected through long-term research by the Institute's scientists provide a significant foundation for the implementation of European directives for the management and protection of surface waters and the marine environment, and the common fisheries policy.

IOR consists of 8 laboratories:

- Laboratory of Physical Oceanography
- Laboratory for Chemical Oceanography and Sedimentology of the Sea
- Laboratory for Plankton and Shellfish Toxicity
- Laboratory of Marine Microbiology
- Laboratory for Benthos
- Laboratory for Ichthyology and Coastal Fishery
- Laboratory of Fisheries Science and Management of Pelagic and Demersal Resources
- Laboratory for Aquaculture

University of Dubrovnik (UNIDU)

The University of Dubrovnik bases its long-term sustainable development on the promotion of the highest moral and social standards, the improvement of existing and the launch of new high-quality study programs adapted to the social needs of the local community and the Republic of Croatia and the standards of the European Union, educational excellence, lifelong education, scientific research and artistic creativity. International recognition, social responsibility, environmental awareness and systematic encouragement of the inclusion of both students and teaching and non-teaching staff as the bearers of all key activities and processes at the University.

Today, the University of Dubrovnik consists of six departments: the Department of Economics and Business, the Department of Maritime Studies, the Department of Electrical Engineering and Computing, the Department of Applied Environmental Science, the Department of Communication Sciences and the Department of Arts and Restoration, and it also has several separate study programmes.

UNIDU has department, insitute, laboratory that are active in the ocean technology field:

- Department for aquaculture
- Institute for Marine and Coastal Research
- Laboratory for Intelligent Autonomous Systems (LARIAT)

Universities and institutes with R&D

Development Innovation Center ALUTECH

The Development and Innovation Center, an institution for starting entrepreneurship, research and development, was founded by the County of Šibenik and Knin. The Central Agency for Financing and Contracting approved funds for its arrangement and equipment within the framework of the IPA program. In addition to EU funds, the project is co-financed by Šibenik-Knin county.

Mariculture Development Center:

- The purpose of establishing the Mariculture Development Center is to advance and improve the quality and quantity of mariculture products in an environmentally sustainable way, strengthen the knowledge and professionalism of shellfish and fish farmers, develop innovation potential and encourage further processing, and improve the marketing of mariculture products, especially Šibenik mussels, in Croatia and abroad.

University of Zadar (UNIZD)

University of Zadar is the largest integrated University in the Republic of Croatia, which includes 25 university departments.

The University of Zadar expresses its fundamental task through the set mission. Relying on international orientation, Mediterranean origins and high ethical standards, the image of the future of the University of Zadar as an important stakeholder in the creation of new knowledge and the initiator of innovative processes in the environment was designed.

In order to organise and promote scientific-research activities the University has founded one scientific-research center as its constituent units for which operates in the sphere of the blue economy sector.

UNIZD has a center for interdisciplinary research and a department that is active in the blue technology field:

- The Center for Interdisciplinary Marine and Maritime Research (CIMMAR)
- Department of Ecology, Agronomy and Aquaculture

Ruđer Bošković Institute (RBI)

The Ruđer Bošković Institute is regarded as Croatia's leading scientific institute in the natural and biomedical sciences as well as marine and environmental research. The Institute, with its research capacities, knowledge and scientific excellence, has assumed the role of linking science with the business sector of the Republic of Croatia.

The laboratories carry out research in oceanography, aquatic chemistry, radioecology, geochemistry, biogeochemistry, bioelectrochemistry, environmental electrochemistry, ecotoxicology, aquaculture and fish pathology, ecological modeling and environmental informatics. The scale of research problems spans from nanoscience to satellite oceanography.

Although the headquarters of RBI are located outside of counties that are subject of the mapping report, the Institute has part of the largest division located in Šibenik.

The Division of Marine and Environmental Research (DMER)

- Marinska research station (located in Šibenik)

Overview of most relevant ocean technology related R&D infrastructure in Dalmatia

University of Split (UNIST)

- Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture (FESB)
 - Laboratory for naval architecture
- Center of Excellence for Science and Technology (STIM-REI)
- Laboratory for testing polymer and conventional sliding bearings (PFST)

University of Dubrovnik (UNIDU)

- Institute for Marine and Coastal Research
Laboratory for Intelligent Autonomous Systems (LARIAT)

Development Innovation Center Alutech

- Mariculture Development Center

Ruđer Bošković Institute (RBI)

- The Division of Marine and Environmental Research (DMER)
 - Marinska research station (located in Šibenik)

Institute of Oceanography and Fisheries (IOR)

- Laboratory of Physical Oceanography
- Laboratory for Chemical Oceanography and Sedimentology of the Sea
- Laboratory for Plankton and Shellfish Toxicity
- Laboratory of Marine Microbiology
- Laboratory for Benthos
- Laboratory for Ichthyology and Coastal Fishery
- Laboratory of Fisheries Science and Management of Pelagic and Demersal Resources
- Laboratory for Aquaculture

Overview of Ocean Technology related R&D infrastructure in Dalmatia 1/2 – Ocean Technology research centers

Infrastructure	Company/ Institution	Location	Description
AgriFood Croatia	AgriFood Croatia Hub	Šibenik	<p>AgriFood Croatia is an innovation hub that brings together research, business and public stakeholders in Croatia for the common pursuit of digital transformations in the aquaculture, agriculture and food related sectors.</p> <p>The mission of AgriFood Croatia is to contribute towards achieving the vision outlined in the EU Declaration of 'A smart and sustainable digital future for European agriculture and rural areas' and strengthen the national and European technological infrastructure.</p>
BlueDIH	University of Split	Split	<p>BlueDIH is one-stop-shops that helps companies become more competitive with regard to their business/production processes, products or services using digital technologies, by providing access to technical expertise and experimentation, so that companies can "test before invest".</p> <p>We are focused on blue-green sector with technical expertise in High Performance Computing (HPC) and Artificial Intelligence (AI) while nurturing digital skills for the benefit of whole society.</p>
Center of Excellence for Science and Technology (STIM-REI)	University of Split	Split	<p>STIM-REI, a project of the Center of Excellence for Science and Technology - Integration of the Mediterranean Region (STIM) connects research (R), innovation (I) and education (E) through three project elements based on the international excellence of scientists and the choice of research directions of key importance for needs of society.</p> <p>Includes research into the dynamics of pollution forecasts, monitoring the impact of climate change on the coastal area and life in the sea through the characterization of biologically active substances and biofilms.</p>
Center for Interdisciplinary Marine and Maritime Research (CIMMAR)	University of Zadar	Zadar	<p>CIMMAR is an organizational unit within the University of Zadar that is fully independent and separate from the academic department hierarchy. Its long-term purpose and strategy is to embody the following six foundational principles: The Adriatic Sea has a central and defining presence within Croatian and regional culture, society, and economy in the past, present, and future; The Adriatic Sea provides ecosystem services that have incalculable value to and continuous presence within Croatian and regional culture, society, and economy; The health of the Adriatic Sea and its sustainability should remain a top priority in all planning decisions for the future of the region; Maintaining the health and functioning of the Sea requires an active program of scientific research, using modern scientific tools, knowledge, and infrastructure. The requisite research must be interdisciplinary, and involve a synergistic interaction among all natural sciences, social sciences, humanistic sciences. The requisite research must also be transparent and available to planners and stakeholders, so that it can be immediately put to positive use for the benefit of the Adriatic Sea.</p>
iNavis Maritime Innovation Center	Trokut Šibenik	Šibenik	<p>iNavis – Croatian national resource centre for energy, environmental, marine and maritime research and business innovation in Šibenik. iNavis is an innovation center that gathers and connects entrepreneurs and institutions from the maritime sector. These are companies from the fields of shipbuilding, transport, energy, propulsion machinery, ICT technologies in maritime, innovation, sea and underwater research, and other activities related to the sea. iNAVIS provides advisory, institutional and financial support to all the above-mentioned types of subjects and companies, and actively participates in the initiation and implementation of joint projects. A large part of the companies - tenants of the innovation center are based exclusively on knowledge, high technologies, innovations, and are oriented towards the world market.</p>

Overview of Ocean Technology related R&D infrastructure in Dalmatia 1/2 – Ocean Technology research centers

Infrastructure	Company/ Institution	Location	Description
Institute for Marine and Coastal Research (CIEM)	University of Dubrovnik	N/A	The Institute's activities are fundamental and applied research into the natural features of the Adriatic Sea and its coasts, especially research into the structure and processes in ecosystems. The institute also develops other activities such as: monitoring living resources in the sea and on land, monitoring the quality of the sea, experimental breeding of plant and animal species for the purpose of acquiring basic knowledge and checking the unfolding of natural processes, maintenance and popularization of aquariums, maintenance and popularization of the Botanical Garden on Lokrum, the formation of scientific and professional collections, and the organization of courses and lectures related to its core activity.
Laboratory for Aquaculture	Institute of Oceanography and Fisheries (IOR)	N/A	Activities directed towards enhancement and introduction of new technological – technical solutions in farming of aquatic organisms. Development of modern molecular and biostatistical approaches are fostered in order to investigate and evaluate ecological and genetic influences of aquaculture on local marine populations as well as on various research aspects of disease disorders in marine organisms. The scope of research has expanded on the field of transcriptomics from where the new generation sequencing is applied in several projects, from the applicability of immunostimulants in aquaculture to interaction between the host and parasite in experimental conditions.
Laboratory for Benthos	Development Innovation Center Alutech	N/A	Conducting research on benthic marine macroalgae (red, brown, and green algae), marine flowering plants, and various groups of marine invertebrates. We base our research on extensive fieldwork and laboratory analysis. The topics of disquisition are diverse, from fundamental biological and ecological research to applied research like monitoring marine environments.
Laboratory for Chemical Oceanography and Sedimentology of the Sea	Institute of Oceanography and Fisheries (IOR)	N/A	Conduct basic scientific and applied research in chemical oceanography and sedimentology. Research includes monitoring the state of chemical parameters in seawater, sediment, and organisms (algae, bivalves, fish), laboratory and field investigations of processes that affect the biogeochemical behavior of various chemical elements and compounds in the sea, development and application of new, high-specific methods for determining nutrient inorganic salts, trace elements, and organic compounds in the marine environment, determination of the presence of pollutants in the marine environment and their harmful effects on organisms.
Laboratory for Ichthyology and Coastal Fishery	Institute of Oceanography and Fisheries (IOR)	N/A	Conducts basic and applied research in ichthyology and fisheries biology with an emphasis on studying the biology and ecology of economically important fish species, especially in the context of the coastal fishery, and conducting applied research with the goal of making recommendations to improve fisheries resource management and conservation. The laboratory also focuses on studying the composition of fish communities in coastal areas and their geographic distribution, ecology, and distribution of early developmental stages of fishes including ichthyoplankton, monitoring changes in fish communities due to climate change, and studying the occurrence and impact of alien and invasive fish species.

Overview of Ocean Technology related R&D infrastructure in Dalmatia 1/2 – Ocean Technology research centers

Infrastructure	Company/ Institution	Location	Description
Laboratory for intelligent autonomous systems (LARIAT)	University of Dubrovnik	Dubrovnik	LARIAT is a research laboratory founded in 2019. at the University of Dubrovnik. Within LARIAT, an interdisciplinary research group working in fields of control systems, robotics and artificial intelligence thus offering solutions to overcome challenges found in real life. LARIAT research is focused in control systems theory and artificial intelligence applied to aerial and marine robotics and multi-agent cooperative systems.
Laboratory for naval architecture	University of Split/ Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture (FESB)	Split	Areas of interest of the department are design of mechanical engineering structures, thermal engineering and shipbuilding structures and design.
Laboratory for Plankton and Shellfish Toxicity	Institute of Oceanography and Fisheries (IOR)	N/A	Performs interdisciplinary research on the structure and dynamics of phyto- and zoo-planktonic communities and their role in the functioning of the marine ecosystem. Research is focused on: determination of spatial and temporal dynamics of phyto- and zooplankton in the transitional, coastal and open waters of the Adriatic Sea, identification of changes in the plankton communities under the influence of anthropogenic activities and climate changes, evaluating the importance and role of phyto- and zooplankton communities in the marine food web. taxonomic investigations of phyto- and zooplankton, with an emphasis on the occurrences of non-indigenous species in the Adriatic, phytoplankton ecology in nutrient-enriched systems (fish farms), the occurrences of toxic phytoplankton species in shellfish farms.
Laboratory for testing polymer and conventional sliding bearings	University of Split/ Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture (FESB)	Split	Used for testing sliding axial or radial, polymer or metal bearings of marine mechanical systems in normal operation and in simulated overload conditions.
Laboratory of Fisheries Science and Management of Pelagic and Demersal Resources	Institute of Oceanography and Fisheries (IOR)	N/A	Deals with pelagic and demersal fish species, crustaceans, cephalopods, and bivalves. Majority of research is focused on commercially important species of the Adriatic Sea- sardine, anchovy, chub mackerel, mackerel, bonito, hake, common Pandora, St. Peter's fish, monkfish, barbell, squid, musky octopus, shrimp, oyster, Mediterranean scallop, etc. Laboratory conducts permanent monitoring of: biology and ecology of the target species (age, reproduction, growth, feeding, sclerochronology) spatial-temporal distribution of the most important species (scientific expeditions) status, dynamics, abundance, and assessment of populations based on composition, structure, and distribution population status of commercially most important species in the critical areas (nursery and spawning grounds), their identification, and locations bycatch and discard species in commercial and scientific fisheries as descriptors for the state of habitat impact of fisheries on biological diversity.

Overview of Ocean Technology related R&D infrastructure in Dalmatia 1/2 – Ocean Technology research centers

Infrastructure

Laboratory of Marine Microbiology

Company/ Institution

Development Innovation Center Alutech

Location

N/A

Description

Research activities are focused on fundamental research in the field of the microbial ecology of marine microorganisms. Research is also being carried out on allothonous microorganisms that reach marine environment from different sources (river, waste water, etc.) which may potentially be hazardous to human health. The main focus of the research is: characterization of microbial community structure, abundances, biomass, and activity of all components of the microbial food web (viruses, autotrophic, heterotrophic, and photoheterotrophic prokaryotes- bacteria and cyanobacteria, as well as autotrophic and heterotrophic plankton and nanoflagellates), defining the trophic significance of the microbial community in the flow of matter and energy in different marine ecosystems. Identification of microbial response to different environmental conditions as well as to changes in ecological conditions on the spatial and temporal scale.

Laboratory of Physical Oceanography

Institute of Oceanography and Fisheries (IOR)

N/A

Engaged in applied and theoretical oceanography, with the aim of studying thermohals, dynamic, optical and acoustic properties of the Adriatic Sea. Actively participates in interdisciplinary research with scientists from other scientific fields with the aim of giving a complete and rounded picture of the ecosystem of the Adriatic Sea.

Mariculture Development Center

Development Innovation Center Alutech

Šibenik

In July 2023, the Development Innovation Center Alutech completed the implementation of the Mariculture Development Center project in Sv. Petra Bay in Šibenik. In the first phase of the project, the facility of the Shipping and Purification Center was built, equipped with specialized equipment for cleaning, sorting, packaging and purification of shellfish.

The purpose of establishing the Mariculture Development Center is to advance and improve the quality and quantity of mariculture products in an environmentally sustainable way, strengthen the knowledge and professionalism of shellfish and fish farmers, develop innovation potential and encourage further processing, and improve the marketing of mariculture products, especially Šibenik mussels, in Croatia and abroad.

The Division of Marine and Environmental Research (DMER, Martinska research station)

Research Institute Ruđer Bošković

Šibenik

The research station on Martinska is an extension of the laboratory of the Institute for Marine and Environmental Research and other laboratories of the Ruđer Bošković Institute. The mission of the research station is to create scientific information and inform society about new discoveries. At the Martinska Station, a meteorological station has been set up that monitors various parameters in real-time that help with the research. Additionally, the research station is equipped with an underwater camera and has placed sensors in front of the station for measuring sea temperature at different depths.

Overview of Ocean Technology related R&D infrastructure in Dalmatia 2/2 – Lab and test facilities run by other actors

Infrastructure	Company/ Institution	Location	Description
Chemical Lab	Cromaris d.d.	Zadar	The analysis are conducted for the total amount of fat in fish meat and the composition as well as the amount of high and low saturated fatty acids (omega-3, omega-6, EPA and DHA). Fats in fish on each cage at the beginning of the fishing period are monitored qualitatively and quantitatively, as well as on experimentally fish feed and competitors' products. Analysis are performed according to ISO standards.
Microbiological Lab	Cromaris d.d.	Zadar	Regular control of growth and types of microorganisms in the processing facility and on equipment, regular health control of products, regular control of hygiene in processing facility.
Fish feed Lab	Cromaris d.d.	Zadar	<ul style="list-style-type: none">• Laboratory is equipped with the state-of-the-art device that by using an analyzer determines chemical and nutritional composition of the fish feed. Data from the analyzer is entered into a nutritional software that balances the fish needs with the fish feed raw materials• Control of chemical and physical parameters of each LOT of fish feed• Control of chemical parameters – nutritional composition (proteins, fats, fiber, ash) and moisture• Control of physical parameters – fat separation, buoyancy, length and diameter of pellets and their strength as well as smell and color of fish feed

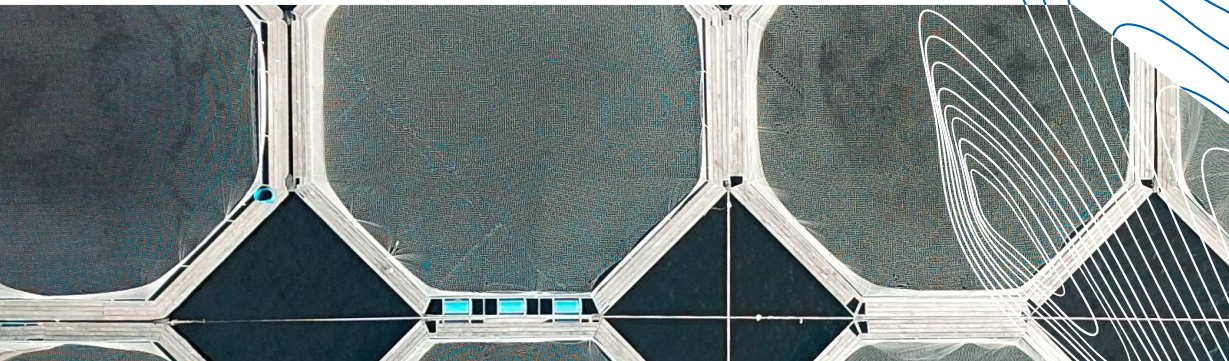
Maritime or Marine EU funded projects active in 2023

Institution/Company	Project name	Acronym	Program	Period	Amount in M EUR
ADRIATIC PROPELERI d.o.o.	Improving the efficiency of the ship's drive by optimizing the propeller	N/A	European structural and investment funds	01.08.2021. – 01.08.2023.	0,94
ADRIATIC PROPELERI d.o.o.	Development of concrete for sustainable construction in the marine environment	N/A	European structural and investment funds	31.5.2020. - 30.9.2023.	1,38
BEDALOV d.o.o.	AI-driven Fish Tank Inspection	N/A	Croatia innovation Norway Grants	Ongoing	0,22
FESB	Innovative pontoon for raising shellfish fry	FLUPSY	European structures and research funds	19.04.2022. – 28.02.2023.	0,19
Institute of Oceanography and Fisheries	Benthic Non-Indigenous Species in the Croatian region of the Adriatic Sea	BenthicNIS	Croatian Science Foundation (HRZZ)	15.01.2020. – 14.01.2024.	0,13
IOR	Ecology and toxicity of the genus Pseudo-nitzschia in the coastal waters of the Central and Southern Adriatic Sea	PSEUDOTOX	Croatian Science Foundation (HRZZ)	31.01.2021. – 30.01.2026.	0,26
IOR	Towards the New European Union Bathing Water Directive	EUROBATH	Croatian Science Foundation (HRZZ)	01.01.2021. – 31.12.2024.	0,07
IOR	Bivalves: Archives of environmental Change in the coastal Marine Ecosystems	BivACME	Croatian Science Foundation (HRZZ)	01.03.2020. – 29.02.2024.	0,15
MARINETEK ADRIATIC d.o.o.	Eco marina – Development of innovative blue technologies for marine superstructure	Eco marina	Croatia innovation Norway Grants	Ongoing	1,00

Maritime or Marine EU funded projects active in 2023

Institution/Company	Project name	Acronym	Program	Period	Amount in M EUR
PFST/FESB	Modelling Uncertainty of Ship Wave-Induced Response in the Adriatic Sea	MODUS	Croatian Science Foundation (HRZZ)	01.01.2020. – 31.12.2023.	0,11
POMGRAD INŽENJERING d.o.o.	Development of concrete for sustainable construction in the marine environment	N/A	European Fund for Regional Development	17.02.2020.- 17.8.2023.	2,32
RANK SHIPYARD d.o.o.	Strengthening the competitiveness of Rand Shipyard d.o.o. investments in digital and green transition"	N/A	European structural and investment funds	09.07.2020. – 09.09.2023.	1,98
UNIDU	Scalable Full-cycle Marine Litter Remediation in the Mediterranean: Robotic and Participatory Solution	SeaClear 2.0	Horizon 2020	01.01.2023. – 31.12.2026.	7,79
UNIDU	MARine Litter cross-border awarenESS and innovation actions	MARLESS	INTERREG	01.06.2020. – 30.06.2023.	4.24
UNIST	Innovative sustainable organic sea fennel (<i>Crithmum maritimum</i> L.) – based cropping systems to boost agrobiodiversity, profitability, circularity, and resilience to climate changes in Mediterranean small farms	SEAFENNEL4MED	PRIMA programme	31.05.2022. – 31.05.2025.	0,96
UNIST	European University of the Seas Alliance	SEA-EU 2.0	European Comission	16.01.2023. – 15.01.2027.	14,40
UNIST/KTF	Innovative sustainable solutions for ready-to-eat traditional Mediterranean products and non-conventional healthy foods	InnoSol4Med	European Comission	01.06.2023. – 31.05.2026.	1,60
UNIST University department of marine studies	Innovative, ecological approach to mussel farming on ropes from recycled materials with eDNA barcoding and pasteurization of shellfish with the aim of raising the quality and value of the final product and environmental protection	INNODAGNJA	Ministry of Agriculture of the Republic of Croatia	12.04.2022. – 31.03.2023.	0,14
VINETA d.o.o. (Monachus Boatyard)	"Strengthening the competitiveness of investments of Vineta d.o.o. to the digital and green transition"	N/A	European structural and investment funds	10.07.2020. – 10.09.2023.	1,07

05 Clusters, networks & forums



Overview of clusters, networks, and forums related to ocean technology in Dalmatia (1/1)

Name	Type	Location	Description
European Shortsea Network	Cluster	N/A	Promotion of intermodality, development projects, computerization of the intermodal transport system, promotion of renewable energy sources, and environmental protection and energy efficiency.
Mariculture Cluster	Cluster	Split	Mariculture cluster is based in Split. It is a private body, whose members are 99% of the actors in Croatian marine aquaculture. It provides its members with legal assistance, support technology purchase and supporting actions for export.
R.Z OMEGA 3	Cluster	Kali	The primary activity of RZ "Omega 3" is catching small blue fish (sardines and anchovies). It gathers 16 cooperative members, and owns a fleet of 21 ships (21 trawlers). The catch of the fishermen of the members of the RZ "Omega 3" has a significant share in the overall Croatian fishing, and especially in fishing with sardine seine, where they participate with over 20% in the total national catch of small bluefish.
Fishermen's Association FRIŠKA RIBA	Network	Kaštel Sućurac	Fisherman's Association FRIŠKA RIBA was founded in February 2007 on the initiative of professional fishermen from Split and its surroundings (Vinišće, Trogir, Kaštela, Vranjic, Mali rat, Dugi Rat, Supetar and Omiš), and then fishermen from the island of Hvar joined the association. the association brings together 20 professional fishermen who use their boats and fishing tools to provide the entire range of products - from small blue fish, shellfish to all types of white fish.
Fishermen's Association Zadar	Network	Zadar	Zadar Fishermen's Association was founded on May 17, 2012 in Zadar. It was founded by fishermen from different parts of Dalmatia (Zadar, Vela luka, Čaprice, Ston, Primošten, Kukljica, Pašman) and later fishermen from Šibenik, Rogoznica, Šimun, Banja) The Zadar Fishermen's Association brings together 10 cooperative members with 14 boats, of which 11 are purse seiners and 3 trawlers, who provide the entire range of blue and white fish with their catches. The cooperative provides its members with the purchase and sale of blue and white fish, commercial mediation on the domestic and foreign markets, procures fishing equipment and tools, and provides information on legal and other changes related to the fishing sector.
Fishermen's Association Adria Tribunj	Network	Tribunj	Fishing port, reception and processing of fish, wholesale fish market, fish market.
Association Oceanus	Network	Split	The main goals of the Association are to promote biology and technology of the sea and sea fishing as a profession, to encourage and improve the cultural, entertainment, sports and educational-research activities of students; valuing, preserving and protecting nature and biological diversity

Overview of clusters, networks, and forums related to ocean technology in Dalmatia (1/1)

Name**Type****Location****Description**

LAGUR Seafood (Local Action Group in Fisheries)

Network

Kali

Local action groups in fisheries (FLAG - Fisheries local action group) are established at the initiative of the European Union in order to address the economic, social and ecological consequences of the depletion of fish stocks in certain fishing areas. Its purpose is to enable fishing communities to create new and sustainable sources of income and to improve the community's quality of life. This is made possible by empowering the local population, those who best understand the problems and struggles of fishing communities - offering them the means to implement and the financial means to develop and adapt solutions to their real needs. Increasing employment and territorial cohesion by promoting economic growth, social inclusion, job creation and providing support for employment and labor mobility in coastal and inland communities dependent on fishing and aquaculture, including diversification of activities in fisheries and towards other sectors of the maritime economy.

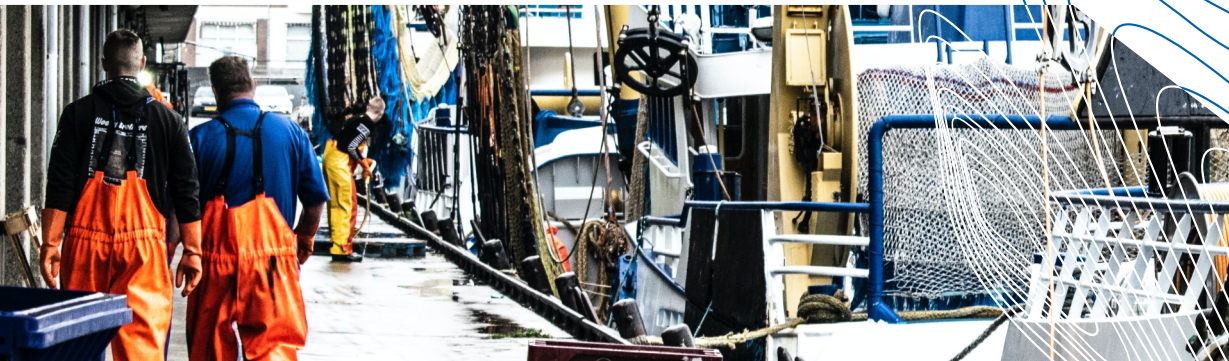
LAGUR GALEB

Network

Tribunj

Local fishing action group specialized in fishing, fish processing and aquaculture. LAGUR GALEB is an association that gathers stakeholders from the public, private and civil sectors in its membership. It represents a special form of local action group specialized in the field of fisheries, fish processing and aquaculture with the aim of assuming the role of the bearer of the economic development of fisheries in the local area by contributing to the creation, maintenance and improvement of jobs in fisheries and contributing to the protection and value addition of fish products.

06 Public Actors



Overview of public actors related to Ocean Technology in Dalmatia (1/1)

Name	Type	Description
Split-Dalmatia County	Municipality	Development of maritime infrastructure and services development of long-coastal liner transport in accordance with the recommendations of the National plan for development of coastal maritime traffic lines. Increasing the capacity of the ferry port on the main traffic routes. Increasing the capacity of the nautical tourism port (LNT). Shaping a system to encourage the development (and maintenance) of small ports. Modernization of the port infrastructure (operating coasts, port, road and railway installations, water supply, sewerage, energy and telephone networks and navigation safety facilities in the port, etc.) and superstructures (warehouses, silos, reservoirs, cranes, etc.), as well as intermodal traffic in the North Port of Split. Development of the Short Sea Shipping as maritime transport of goods between ports in the EU (sometimes also including candidate countries and EFTA countries), and ports situated in geographical Europe, on the Mediterranean and Black Seas.
Dubrovnik-Neretva County	Municipality	Improving competitiveness in aquaculture, fishing and tourism aims to strengthen the overall economic development of the county through the implementation of activities in strategic economic sectors that will strengthen the position of entrepreneurs on the market. In particular, Municipality want to strengthen the application of new technological solutions in accordance with global trends (the application of so-called "smart technologies", i.e. technology 4.0) which will ensure the long-term growth of these sectors. A stronger orientation towards ecological production, i.e. the application of technological and other solutions that will ensure a higher level of business sustainability (especially when it comes to the application of circular economy principles) is of priority importance, especially with regard to the possibility of using external sources of financing. It is still important to encourage the interconnection of producers and the strengthening of production and sales chains that strengthen the placement of agricultural and food products on the market.
Zadar County	Municipality	Development of competitive, sustainable and resilient fisheries and aquaculture. The Zadar County is the leader in aquaculture and fishing in the Adriatic and the leader in the Republic of Croatia. Fishing is a traditional activity of the Zadar coast and islands. More than 50% of the total fish catch on the Croatian side of the Adriatic is caught and landed in Zadar County. Support for organization and association in the fishing sector with connection to the processing sector will be directed towards the establishment of a regional eco and innovation system for entrepreneurs in the fishing and aquaculture sectors and integration into strategic food value chains. One of the fundamental problems of fisheries and aquaculture is the insufficient number of fish and inadequate fisheries in relation to the needs of fishing fleets in Zadar County (which accounts for almost 15% of the total fishing fleet of the Republic of Hrvatske). Development of supporting infrastructure and superstructure for the needs of the fisheries and aquaculture sector. Encouraging the introduction of new technologies and ecological practices for the purposes of increasing the resilience and sustainability of the fisheries and aquaculture sector. Support for organizing and association in the fisheries sector with connection with the processing sector.
Šibenik-Knin County	Municipality	Encouraging the development of supporting infrastructure and new technology and practices, as well as the fisheries and aquaculture sector. The county is determined to continue carrying out further activities in the field of education of farmers and fishermen. Ensuring the preconditions for the modernization and improved fisheries and aquaculture sectors implies greater infrastructure investments and support for sleeping processes is necessary over a certain period of time.

About the OTIMEDT Initiative

Objective

To establish routes for strong bilateral cooperation of blue economy actors from regions of **Trøndelag (Norway)** and **Dalmatia (Croatia)**.

About the Initiative

Through the Initiative activities, two mapping reports will be created, one for the Norwegian region Trøndelag and one for the Croatian region Dalmatia, through which key actors in the blue economy sector will be identified, and with the help of the aforementioned mapping reports, events (online and live) will be organized between stakeholders in each region to increase the possibility of cooperation and exchange experiences and best practices in the field of the blue economy.

Duration

20th of March 2023 – 20th of March 2024

Initiative Coordinator

University of Split (**UNIST**)

Initiative Partner

Trondheim Tech Port (**TTP**)

Budget

100.000,00 EUR



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This report will be updated on regular basis

If you have input or comments, please send them to utt@unist.hr

Thank you!



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