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Factsheet #1



Driving Innovation for Green, Digital,
and Smart Maritime Ecosystems

Overview of the achievements in the reporting period : January 2023 - March 2024

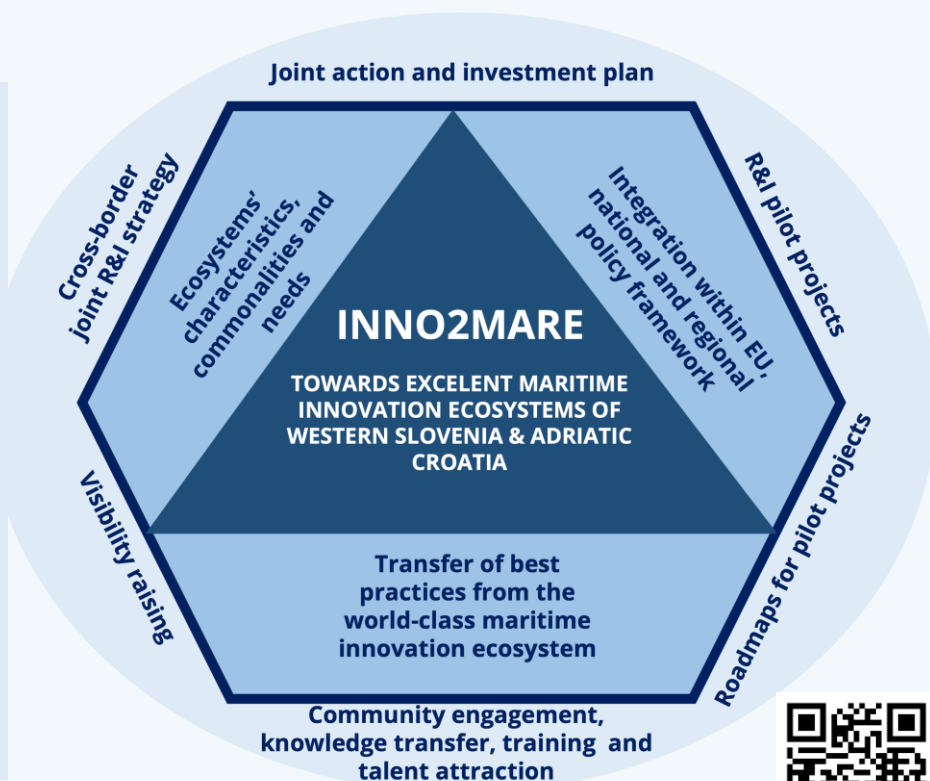
Project Type: Innovation and Collaboration in the Maritime Sector

Lead Organization: University of Ljubljana

Website: <https://www.inno2mare.eu/>

■ OUR APPROACH

The main goal of **INNO2MARE** project is to strengthen the capacity for excellence within the Western Slovenian and Adriatic Croatian innovation ecosystems through a series of jointly designed and implemented actions that support the digital and green transitions of the maritime and connected industries.



WHERE DO WE STAND ?



Detail mapping, gap analysis of Croatian and Slovenian ecosystem were performed and the joint R & I strategy for strengthening the maritime innovation ecosystems excellence was developed. Strategy frame was accepted by the partners and the vision statement was defined.



The development strategy and the concepts of Pilot project have been developed. The first concept, models, AI-based algorithms were developed and prototypes tested.



Innovation council was established with the innovation and promotional role. The innovation strategy was discussed to accelerate the innovation in Slovenian and Croatian ecosystems.



During this period 12 events were held and 3 of them were online events, 20 publication of press release, 4 articles in SCI journals, participation in 4 Scientific & tech conferences, 5 promotional materials (Brochures, Roll-ups, newsletter, 1 innovation breakfast.

PROGRESS OF THE PROJECT

Develop the joint R&I strategy for strengthening the maritime innovation ecosystems' excellence (WP2).

- ✓ In-depth mapping of the ecosystems
- ✓ Gap analysis, R&I needs and opportunities identified
- ✓ Long-term joint R&I strategy (M18)

Develop the joint action & investment plan for building coordinated, resilient, attractive and sustainable maritime innovation ecosystems (WP4).

- ✓ Synergies with ongoing national, EU projects
- ✓ Action and investment plan grounded in the joint R&I strategy
- ✓ methodology for monitoring of the progress

Enhance the level of collaboration within and between place-based ecosystems through innovative approaches to knowledge transfer, community engagement and competence building (WP6).

- ✓ First cycle of programme completed (16 events, 350 persons)

Contribute to knowledge gaps in maritime R&I through co-design and joint implementation of three pilot projects by ecosystem actors (WP3).

- ✓ Pilot projects development plan
- ✓ Initial algorithms developed and data used
- ✓ Initial concepts and models developed (TRL 3-4)
- ✓ Initial scenarios tested and validated
- ✓ Publications: SCI articles, conferences

Accelerate the uptake of new technologies by the ecosystems' industry through preplanning for pilots and demonstrators based on the three R&I pilot projects (WP5).

- Collecting, analysing data from WP2, WP3 and WP4
- Evaluating the Pilot projects results, models and developed technologies
- Defining potential of new approaches



MILESTONES

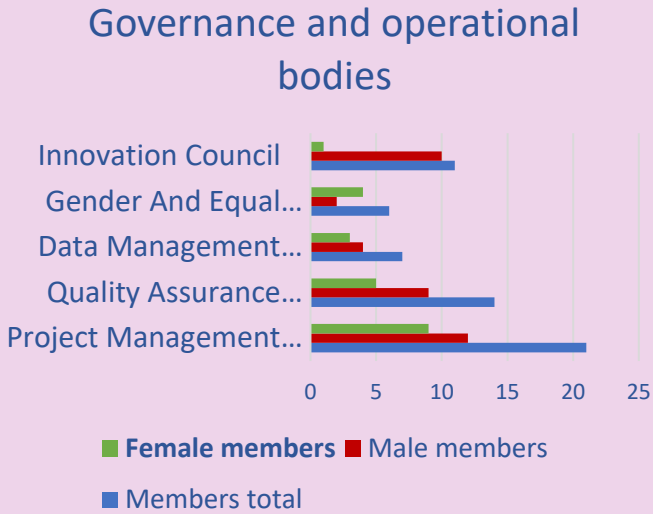
Milestone Name	Means of Verification	Due Date, (month)	Status
M1 - Kick-off meeting	Agenda, minutes, list of participants	March 2023	✓
M2 - Innovation Council establishment	Report with the list of members	June 2023	✓
M3 - Completion of mapping data collection and exercises	Data validated for completeness and quality	June 2023	✓
M4 - Completion of data collection for ecosystems’ needs and gaps	Data validated for completeness and quality	August 2023	✓
M5 - Successful launch of pilot projects	Laboratory logs	August 2023	✓
M6 - Completed first cycle of WP6 programmes	Agenda, programme, list of participants, participants’ feedback	December 2023	✓
M7 - Completion of stakeholder consultation for the action plan	Data validated for completeness and quality	December 2024	
M8 - First roadmap complete	M8 - First roadmap complete	December 2025	

6/20 DELIVERABLES SUBMITTED

No	Deliverable Name	Due Date
D1.1	Data Management Plan - first version	30 June 2023
D1.3	Quality Assurance plan including gender monitoring	30 June 2023
D7.1	Dissemination, exploitation and communication plan – first version	30 June 2023
D2.1	Report on ecosystems’ mapping	31 July 2023
D2.2	Report on innovation ecosystems’ needs	31 October 2023
D3.1	Concepts and co-created technology knowledge for pilot projects	31 December 2023



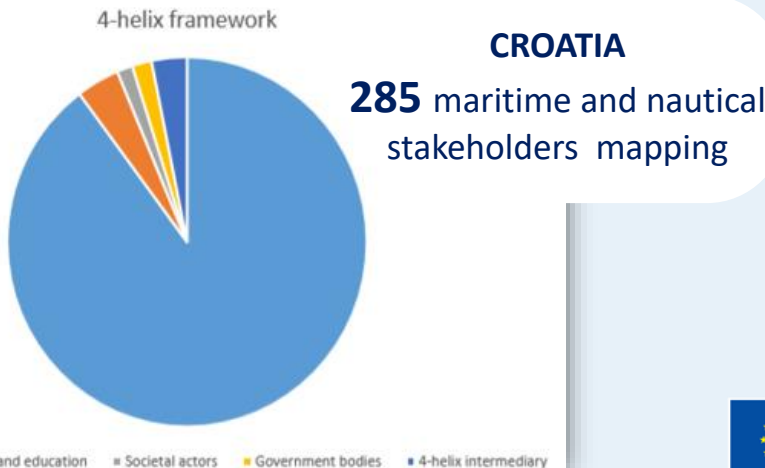
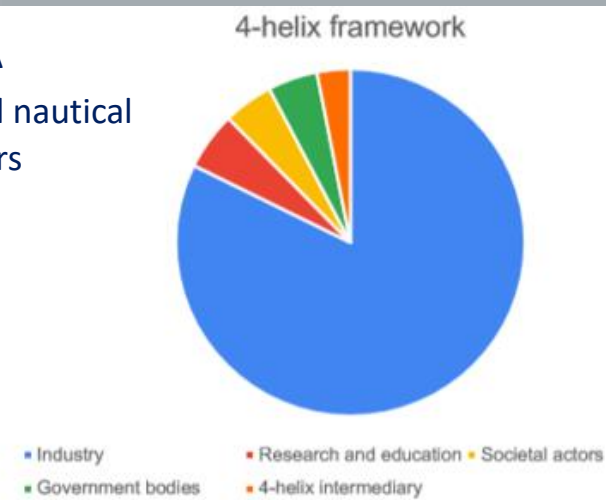
GENDER MONITORING



ECOSYSTEMS MAPPING - 4-HELIX FRAMEWORK

SLOVENIA
131 maritime and nautical stakeholders

416
maritime and nautical stakeholders mapped



R&I PILOT PROJECTS

PILOT PROJECT 1 - IMPROVED FIRE EVACUATION VR MODEL OF A SHIP ENGINE ROOM

- ✓ State-of-the-art literature review, analysis of existing solutions, mapping research gaps.
- ✓ Selection and design of a representative ship engine room (ER).
- ✓ Building a VR model of ER.
- ✓ Developing and defining fire scenarios.
- ✓ CFD modelling of fire spread in ER.

Planned activities:

- ✍ Implementing CFD analysis results in VR model.
- ✍ Testing of improved VR model.



PILOT PROJECT 2 - DIGITAL TWIN WITH AI FOR SUSTAINABLE AND EFFICIENT ENERGY MANAGEMENT

- ✓ State of the art review, existing solution analysis and challenges overview.
- ✓ Design of use case and boundary conditions.
- ✓ Definition of input parameters, criteria and variables.
- ✓ Analysis of energy consumption, energy peaks.
- ✓ Developed algorithms for self-building of a digital model.
- ✓ Created digital model based on real-life accurate data from ISKRA.
- ✓ Establishment of one-way connection with ISKRA for data gathering.

Planned activities:

- ✍ Development of predictive algorithms for energy usage.
- ✍ Development of algorithms for energy management.
- ✍ Implementation of two-way connection with ISKRA.
- ✍ Testing verifying and validating algorithms as well as Digital Twin.

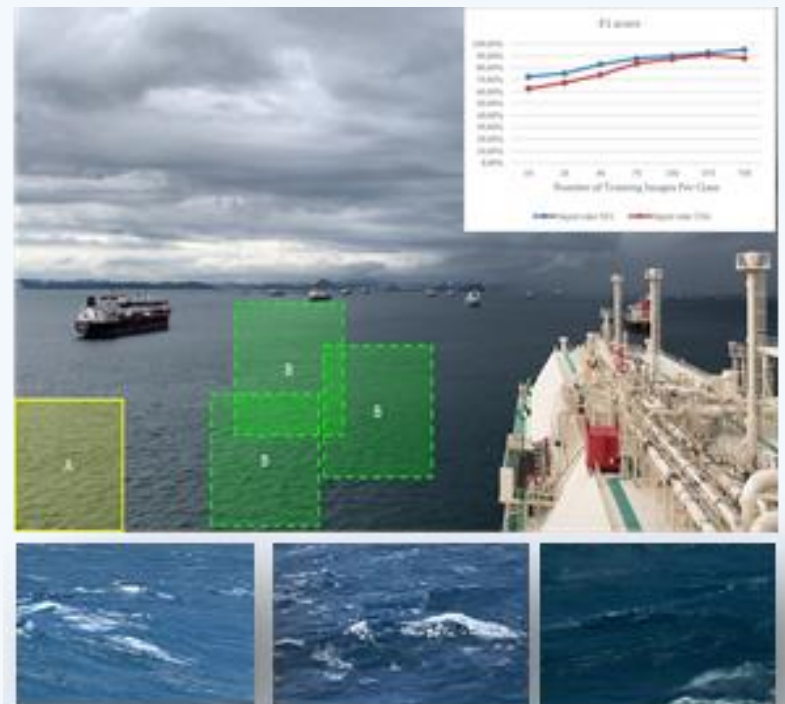


PILOT PROJECT 3 - AUTONOMOUS SHIPPING TECHNOLOGY SUPPORTED BY AI

- ✓ The sea state estimation process is typically carried out through visual observation from the bridge but is usually subjective and subject to errors.
- ✓ Automatic sea state estimation using computer vision: models trained on annotated image data.
- ✓ Collection of image data - Video recordings on a large ocean-going LNG transport vessel operating in winter conditions and rough seas.
- ✓ First recordings taken between 24/12/2022 - 02/2024 during navigation and at anchor to capture as many sea states as possible.

Planned activities:

- ✍ Adaptation of input data and model tuning to achieve better results of recognition of the sea state estimation.
- ✍ Data input adjustment and model tuning to achieve better detection results of small or dim objects and obstacles on the sea surface.
- ✍ Generating additional synthsets for sea state estimation to improve performance of estimation from different heights and weather conditions and for small object detection to augment available data for model training.
- ✍ Dissemination of results.



Citizen engagement

■ Citizens' skills development

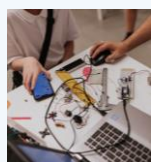
4 events organized so far, both in Croatia and Slovenia, **59 participants involved**



■ Digital & green events

Makeathons supporting innovative thinking and active engagement in the local community

2 events in Croatia and Slovenia, **34 participants**



■ Citizens Connect, facilitated by the Innovation Council

Partners organized **thematic discussions** where bottom-up civic participation is sought in tackling key issues related to the two innovation ecosystems **1 event** organized so far, in Croatia, **55 participants**



Attraction of talents and career development

■ Recruitment of new highly skilled workforce for R&I pilot projects

Partners are monitoring **recruitment of professionals** as a result of project activities, primarily the R&I pilot project in WP3, **8 new job positions** within the consortium, Target: highly skilled workforce

■ Attraction of talents and career development

Working on the **integration of Career Connector platform** into the project website, solution managed by the UL will be adapted for INNO2MARE and **functional by the end of 2024**, Target: students, job seekers in the Slovenian and Croatian ecosystems

■ Brainstorming sessions on talent attraction and retaining of the Innovation Council members

1 session organized during RP1, Target: ecosystem actors, Innovation Council members, **15 experts involved so far**



Knowledge transfer & staff exchange

■ Training of ecosystems' actors on demand-driven knowledge transfer

1 event organized so far, in Croatia **18 participants involved**



■ Advisory support on knowledge and technology transfer activities

Partners conducted **advisory support sessions on knowledge and technology transfer** for various ecosystems' actors, **8 individual sessions** organized during RP1, Target: ecosystem actors



■ Short-term secondments & short-term missions

1 secondment & 1 short-term mission organized during RP1, visit of PoAB Target: ecosystem actors (within the consortium)



Entrepreneurship training & smart skills development

■ Training sessions for ecosystem actors on R&I and entrepreneurship

Start-up **entrepreneurship**, business growth and leadership skills, **6 trainings** organized during RP1, both in Croatia and Slovenia, **162 persons involved so far**



Dissemination and communication in numbers


Establishing of INNO2MARE WEBSITE : <https://www.inno2mare.eu/>

Social Media



Published **10 posts** on Facebook and **10 posts** on LinkedIn



Followers: **121** |  Reactions: **74**

Press & Media Coverage



1 press release distributed to partners and published online



20 media mentions (partner media published press release)

Publications & Promotional Material:



Published **1 Newsletter / e-Newsletter**



Published **1 Brochure / e-Brochure**

Promotional Materials



1 Roll-up



1 Poster



1 PowerPoint presentation for events/conferences/trainings

R&I Popularisation Events:



Participated in **9 events**: Makeathons, Workshops, Trainings, Researchers' Night, Science Festival

Networking Events:



Organised **1 Meetup & Innovation Breakfast**

Scientific Engagement:



Participation in **4 scientific & tech conferences**

Scientific Publications:



Published **4 articles** in SCI journals

Organization of online events & meetings for transfer of best practices:



Held **3 online events** for sharing best practices

