

BLUESKILLING INNOVATION
(EAPA_0008/2022)

Report on Measures to Boost Female Participation
in the Atlantic Area Maritime Industry

WP4 – Activity 4: Identify and apply specificities for making the courses more attractive
(with a special focus on women)

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Executive Summary

BLUESKILLING INNOVATION project identifies the low participation of women as a significant challenge for the Atlantic Area maritime and shipbuilding ecosystem. Maritime industry is highly masculinized, and women are more commonly found in non-technical functions such as administration and sales. It has been identified an opportunity to increase women's participation in technical activities, particularly those connected with new technologies, digitalization and decarbonization. The present report translates that project requirement into a practical set of measures for course design, recruitment, delivery and progression.

The central recommendation is to avoid treating women's participation as a communications issue alone. Courses should be designed as an inclusive pathway into attractive, technologically advanced maritime careers, while the surrounding recruitment and learning environment must remove avoidable barriers. The proposed approach combines gender-responsive course design, visible career pathways and female role models, targeted outreach and recruitment, flexible and accessible learning, industry exposure and mentoring, an inclusive learning and workplace culture, and measurement of participation, completion and transition into employment.

1. Purpose and Scope

This report has been prepared specifically for WP4 Activity 4 of BLUESKILLING INNOVATION project. The project defines Activity 4 as ***“Identify and apply specificities for making the courses more attractive (with a special focus on women)”***. The outcome of this activity must be a report proposing measures to boost female participation in the maritime industry,

The report therefore focuses on measures that can realistically be incorporated into the project’s new and updated curricula, including the digital, green, offshore renewable energy, alternative fuels and other emerging technology areas, already identified in WP4. It also considers the recruitment and delivery conditions needed for those courses to reach and retain women.



2. Starting Point Established by the Project

- The project identifies the maritime industry as highly masculinized and states that female participation is very low, particularly in technical roles.
- The project sees an opportunity to increase women's participation in technical activities linked to new technologies, digitalization and decarbonization.
- WP4 explicitly sets the objective of boosting the participation of female professionals and identifies women as a priority target group for communication and recruitment.
- The “navalization” or “Blue Innovation Skills” courses are intended to attract and reskill workers, researchers and students from non-maritime backgrounds, explicitly including women.
- The project intends to design or redesign several courses and/or professional curricula, while also developing some “navalization” modules.
- In WP5 students, workers and researchers from different backgrounds have been piloting the new training courses and have been able to evaluate their results for the reskilling of the maritime industry labour force.

3. Principles for Making Maritime Courses More Attractive to Women

- ☞ **Showing the future of the sector:** Presenting maritime careers through the lens of innovation, digitalization, clean energy, robotics, autonomy, advanced manufacturing and sustainability, not only by traditional shipbuilding occupations.
- ☞ **Making the career pathway explicit:** Explaining what each course leads to, what jobs it can unlock, which skills are transferable and how learners can progress from VET/HE training into technical employment.
- ☞ **Designing for inclusion from the beginning:** Avoiding adding a small “women’s component” after the curriculum has been designed. Accessibility, language, examples, teaching methods and learning conditions should be considered during course design.
- ☞ **Reaching belonging and confidence:** Women entering a strongly male dominated environment may benefit from visible support, peer networks, mentoring and early practical experiences that demonstrate competence and progression.
- ☞ **Using evidence and feedback:** Collecting sex disaggregated data on outreach, applications, enrolment, attendance, completion, satisfaction and progression, and use these results to improve subsequent course editions.

4. Useful Measures

4.1. Reframing Value Proposition of Maritime Careers

Course descriptions and promotional materials should foreground the sector's contribution to decarbonization, offshore renewable energy, digital transformation, advanced manufacturing and sustainable transport. Recruitment messages should explain that maritime technology is not a narrow or traditional industrial field but a place where engineering, data, software, robotics, energy and environmental skills converge.

To be considered in the implementation: Course titles and descriptions must make the technological and societal purpose visible. It is interesting to include short “career outcome” statements and present specific examples of projects and technologies learners will work with.

4.2. Women Visibility in the Sector

Female engineers, researchers, technicians, project managers and other technical professionals must be invited as speakers, mentors, ambassadors and examples in teaching materials. Visibility should be authentic and connected to real career pathways rather than token representation.

To be considered in the implementation: It would be interesting to build a small Atlantic Area pool of female maritime professionals and alumni and invite women professionals to practical demonstrations, webinars and career sessions.

4.3. Target Outreach Before Course Selection

Recruitment should begin before the application stage and should reach potential candidates in engineering, ICT, electronics, energy, environmental sciences, manufacturing and other adjacent fields. This directly complements the “navalization” approach for attracting technically qualified people from outside the maritime industry.

To be considered in the implementation: It would be useful to run outreach through universities, VET centres, professional associations, STEM networks, employment services and industry clusters. Introductory sessions explaining maritime careers and the short route from existing skills to maritime applications will be interesting, too.



4.4. Low Risk Entry Routes Elaboration

Women who have never worked in the maritime industry may hesitate because they do not understand the sector’s working environment or assume that they lack maritime specific experience. Short introductory modules can reduce this uncertainty.

To be considered in the implementation: Short micro-courses, taster sessions and introductory “Blue Innovation Skills” modules would be supplied. It is necessary to distinguish essential prerequisites from skills that can be learned during the course.

4.5. Strengthening of Practical Learning with High Technological Content

The project's proposed content (AR/VR, robotics, programming, 3D/4D design, sensorics, offshore renewable energy, alternative fuels and sustainability) can be used as a strong attraction mechanism. Practical activities should let learners see and demonstrate their competence early.

To be considered in the implementation: Laboratory work, simulations, digital twins, AR/VR, collaborative design tasks and real industrial challenges must be used extensively. And it is very important to ensure that equipment, examples and task allocation do not reproduce gender stereotypes.

4.6. Mentoring and Peer Support on the Course

A formal support mechanism can help learners navigate an unfamiliar sector and develop professional networks. Mentoring should provide access to information, contacts, encouragement and practical career guidance.

To be considered in the implementation: Establishing peer groups with pair participants, where possible, with trained industry mentors. Regular check-ins must be scheduled. A named contact for questions about learning and progression must be provided, too.

4.7. Delivery Compatibility with Different Life Circumstances

Course participation can be affected by caring about responsibilities, travel, work schedules and other constraints. Where technically feasible, flexible delivery can widen participation without lowering training standards.

To be considered in the implementation: Using blended learning would be appropriate. Schedules and predictable assessment deadlines must be well published in advance. Recordings or asynchronous materials for theoretical content will be useful. Unnecessary travel must be avoided.

4.8. Welcoming Facilities and Learning Environments

Training environments should communicate that women are expected and valued. Practical measures should cover facilities, equipment, protective clothing, changing arrangements, language and classroom behavior.

To be considered in the implementation: Personal protective equipment (PPE) and workwear must be available in appropriate sizes and fits. Adequate changing and sanitary facilities must be ensured. Clear standards on respectful behavior and reporting of inappropriate conduct must be designed and communicated to all people.

4.9. Inclusive Teaching and Assessment Methods

A technically rigorous course can still use varied ways of learning and demonstrating competence. Teaching should avoid examples that implicitly position men as the default maritime worker.

To be considered in the implementation: It is necessary to use collaborative and individual tasks and rotate practical roles. In examples and imagery, gender balanced items must be included. Skills assessment must be transparently against published criteria. It must be ensured that the teaching staff is properly trained in inclusive practices.

4.10. Directly Training Conexion to Employers

Women are more likely to see the course as a credible pathway when they can see where the training leads. Industry participation should therefore extend beyond curriculum consultation.

To be considered in the implementation: Inclusion of company visits, guest lectures, work based projects, internships or short placements where feasible. Employers must explain technical roles, recruitment routes, progression and workplace expectations.

4.11. Women Focused Career Transition Mechanism

Participation in training is only an intermediate outcome. The project's wider objective is to increase women's presence in the maritime workforce, so transition to employment or further training should be monitored.

To be considered in the implementation: It will be useful to create employer introductions, CV/interview sessions, technical portfolio support and vacancy information. Participants' progression after completion must be tracked.

4.12. Clear Zero Tolerance Approach to Discrimination

Recruitment messages should be supported by credible organizational practice. Women should know that inappropriate behaviour, harassment or discrimination will be addressed.

To be considered in the implementation: A concise code of conduct should be drafted to be respected in the courses. This code should include reporting and complaint systems at each partner institution. It must be ensured that trainers know how to respond to and escalate concerns.



5. Specifically Applicable Measures to the BLUESKILLING INNOVATION Courses

The project should embed the measures above into the courses already foreseen rather than creating a parallel set of unrelated women-only courses. A gender responsive approach is particularly suitable for the project's technical priorities.

COURSE AREA ALREADY FORESEEN	ATTRACTIVENESS MEASURE	PRACTICAL APPLICATION
Alternative fuels / decarbonization	Connect technical learning to climate and industrial transformation	Use real decarbonization challenges, female technical speakers and project-based assignments.
Offshore renewable energy	Make the career ecosystem visible	Show roles across design, materials, control, installation, maintenance and decommissioning. Organize industry encounters.
Digitalization / Industry 4.0	Highlight transferable digital careers	Promote programming, robotics, AR/VR, sensorics and digital design as entry points for candidates from ICT and engineering backgrounds.
Green transversal skills	Link technical competence to sustainability outcomes	Use practical energy-efficiency, circular-economy and waste- management challenges.
"Navalization" / Blue Innovation Skills	Create a low barrier bridge from other sectors	Supply short modules explaining maritime terminology, regulations, systems and work contexts while recognizing prior technical skills.

Table 1: Attractiveness measures for women

6. Recommended Recruitment and Communication Approach

Communication should be coordinated across the Atlantic partnership and should reinforce the project's existing dissemination model. The most important change is to communicate the opportunity in terms that are relevant to women considering technical careers, rather than simply adding women to generic promotional imagery.

- It must be used real female technical professionals and learners in photographs, videos, interviews and event panels.
- It is very important to describe specifically jobs and technologies rather than relying on broad statements such as “work in the maritime sector”.
- Use of inclusive language is welcome. It is necessary to avoid implying that applicants need prior maritime experience when “navalization” modules are designed to bridge that gap.
- Promotion of the sector's role in clean energy, decarbonization, digital transformation and innovation must be shown.
- Clear prerequisites, workload, duration, delivery mode and career outcomes must be advertised clearly so that candidates can assess feasibility before applying.
- Universities, VET centres, maritime clusters, professional associations and employers will be trusted as recruitment channels.
- It will be interesting to give female applicants opportunities to speak with current students, graduates and professionals before enrolment.

7. Implementation Framework

The following sequence is recommended for the new courses and pilots.

STEP	ACTION
1. AUDIT	Analysis of each proposed course in terms of attractiveness, accessibility, gender balance in the examples and the teaching staff, prerequisites, delivery conditions and perceived professional value.
2. CO-DESIGN	Consultation with female students, women working in maritime technical positions, educators, and employers before finalizing the course design.
3. ADAPTATION	Incorporation of these measures into the course objectives, content, teaching methodology, communication materials and student support.
4. RECRUITMENT	Before the beginning of each course, specific outreach activities must be carried out through educational centers, maritime industry companies, and professional networks.
5. SUPPORT	Mentoring, peer support, clear rules of conduct, and accessible learning modalities throughout each course provision.
6. PILOTING	Experimentation of adapted courses with women and men supervising the experience of different student groups.
7. ASSESSMENT	Using satisfaction surveys and participation data to identify best practices and the reasons for their success.
8. IMPROVEMENT AND TRANSFER	Review of courses and exchange of measures within the framework of the Atlantic Area partnership and, where appropriate, with education responsible public authorities.

Table 2: Implementation path

8. Monitoring Indicators

To make the gender objective measurable, the following operational indicators are recommended. They should be collected where legally and institutionally appropriate and should be disaggregated by sex where this is permitted and proportionate.

DIMENSION	SUGGESTED INDICATOR
Outreach	Share of women among people reached by targeted course promotion
Applications	Share of female applicants
Enrolment	Share and number of female participants enrolled
Participation	Attendance and active participation rates by sex
Completion	Course completion rate by sex
Satisfaction	Learner satisfaction by sex, with specific questions on inclusiveness, relevance and sense of belonging.
Confidence	Change in participants' confidence in pursuing a technical maritime career
Career transition	Participants progressing to employment, placement, further study or another maritime course.
Retention	Female participation in subsequent editions or advanced modules
Industry engagement	Number of employers and female technical professionals contributing to mentoring, teaching or career activities.

Table 3: Indicators



9. Risks and Mitigation

POSSIBLE RISKS	MITIGATION ACTIVITIES
Low initial female enrolment	Early outreach starting Use of female ambassadors Recruiting from adjacent technical fields Introductory modules supply
Stereotyping	Presentation of female professionals in substantive technical roles Avoiding the presentation of women only as sales or administrative staff
Course becomes less technically demanding	Avoiding the reduction of technical standards Remotion of unnecessary barriers while maintaining competence requirements
Women enrol but do not complete	Checking attendance and satisfaction Mentoring provision Peer support and flexible delivery where feasible
Training does not translate into jobs	Employers' involvement Provision of work based learning and track progression
Measures vary too much between regions	Agreement of a common minimum set of principles and indicators across the Atlantic Area partnership, while allowing regional adaptation.

Table 4: Risk mitigation activities

10. Conclusions and Recommendations

The ideas collected in this document should be understood as an opportunity to make the new generation of maritime training more inclusive and more attractive at the same time. The strongest proposition is not to market the maritime sector to women through a separate narrative, but to make its real transformation visible: clean energy, digitalization, advanced manufacturing, robotics, new fuels, offshore renewables and sustainable maritime technologies.

Five measures should be treated as priorities for immediate incorporation into the BLUESKILLING INNOVATION project courses to be taught in the next future:

1. Targeted outreach using credible female technical role models.
2. Short “navalization”/Blue Innovation entry routes for women and other professionals from adjacent sectors.
3. Technology-rich, project-based learning with clear career outcomes.
4. Mentoring, peer support and inclusive learning conditions.
5. Sex-disaggregated monitoring from recruitment through completion and career transition

These measures are consistent with the project’s existing architecture and with the ***“Strategy for Results Exploitation and Continuity Beyond the Project Lifetime”*** adopted in WP6.