

Visual Exploitation plan

D3.1.2

31/10/2022

Project Acronym	CLASS4.0
Project ID Number	10415212
Project Title	CLuster for dAta-driven Solutions in the Sea economy 4.0
Priority Axis	1 – Blue innovation
Specific objective	1.1 - Enhance the framework conditions for innovation in the relevant sectors of the blue economy within the cooperation area
Work Package Number	3
Work Package Title	Clustering thematic activities
Activity Number	3.1
Activity Title	Exchange and exploitation of projects' results
Contribution by	All Partners
Partners involved	All Partners
Status	Final



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1 CLASS4.0

1.1 Background and Challenges

The blue economy, which encompasses all economic activities related to oceans, seas, and coasts, is a vital sector with immense potential. However, it faces several challenges. Small and Medium-sized Enterprises (SMEs) in this sector struggle with low competitiveness on international markets. Their innovation activities often don't yield the desired results, and there's a noticeable skill gap among the workforce. Additionally, there's a lack of cohesive collaboration between the business, research, and public sectors. These challenges are further compounded for Micro, Small, and Medium-sized Enterprises (MSMEs) due to their size and the high costs associated with research and development.

1.2 Project Vision

CLASS4.0 seeks to address these challenges head-on. It doesn't start from scratch but aims to build upon and capitalize on the experiences and results of previous projects such as INVESTINFISH, BEAT, and BLUE KEP. The overarching goal is to bolster the competitiveness and innovative prowess of SMEs. The project recognizes the potential of Data-driven solutions (DDS) in revolutionizing the circular and sea economy.

1.3 Key Objectives and Strategies

1. **Raising Awareness:** One of the primary barriers to innovation is a lack of understanding of its potential benefits. CLASS4.0 aims to showcase relatable case studies, making it easier for SMEs to visualize the tangible returns from investing in innovation.
2. **Bridging the Skill Gap:** A significant impediment to the adoption of DDS by SMEs is the existing skill gap. By leveraging methodologies from the BLUE KEP project, CLASS4.0 hopes to create an environment conducive to DDS adoption.
3. **Promoting Technology Transfer:** The project emphasizes the importance of transferring technology and innovative processes, especially those related to DDS in the Blue Economy. Insights from the BEAT project will play a pivotal role in this.
4. **Future Thinking (FT) Methodology:** In an ever-evolving global landscape characterized by volatility and uncertainty, traditional decision-making models may fall short. CLASS4.0 will employ the FT methodology, a forward-looking approach that explores multiple future



scenarios. This method is particularly apt for navigating complex environments and ensuring that decisions are based on objective analysis rather than mere opinions.

5. **Capitalizing on Past Successes:** CLASS4.0 isn't about reinventing the wheel. It will draw from the successes of previous projects, adopting and adapting governance models, cooperation frameworks, and innovation capability analyses.
6. **Stakeholder Engagement:** A project of this magnitude and significance requires the active involvement of various stakeholders. CLASS4.0 has a comprehensive plan to engage industry representatives, policymakers, and other relevant entities right from the project's inception.
7. **Synergies and Collaboration:** The project recognizes the value of synergies. By fostering real connections between different projects and initiatives, CLASS4.0 aims to enhance the visibility and transferability of results.
8. **Four Pillars of Support:** The project's approach is built on four foundational pillars - skills and training, innovation ecosystem and networking, testing innovations before full-scale investment, and support in securing investments. Each pillar is crucial for ensuring the holistic development and competitiveness of SMEs.
9. **Regional Engagement:** While CLASS4.0 has a broad scope, it also understands the importance of regional nuances. Engaging regional managers will ensure that best practices are not just recognized but also integrated into regional strategies.
10. **European Integration:** The project's cluster model is inspired by the European Union's Digital Innovation Hubs (DIH) model. This ensures that the best practices and insights gleaned from CLASS4.0 can be seamlessly transferred and adopted across Europe.



2 Clustered projects

CLASS 4.0 project aims at building and capitalizing the experiences of projects such as INVESTINFISH, BEAT, BLUE KEP, aiming at enhancing the transferability and visibility of the results. The project main goal is to strengthen competitiveness and innovation capacity of SMEs in the area, especially focusing on the opportunities offered by Data driven solutions in the circular and sea economy. In particular, the project will integrate and enhance best practices and previous projects' outputs to:

- Increase awareness by the SMEs
- Bridge the skill gap, that is a critical barrier that prevents many SMEs to adopt Data-driven solutions
- Foster technology transfer, contributing to reinforce it and innovation process with focus on Data Driven Solution in the Blue Economy

According to these objectives, the following document includes the brief project description and Key Exploitable Result analysis obtained from the three clustered projects: Boosting INVESTments in INnovation of SMEs along the entire FISHerY and aquaculture value chain – INVESTINFISH (Blue enhancement action for technology transfer – BEAT and BLUE Knowledge Exchange Program and integration of education systems in the cross-border area – BLUEKEP.

2.1 Boosting INVESTments in INnovation of SMEs along the entire FISHerY and aquaculture value chain (INVESTINFISH) project

2.1.1 Project description

Fisheries & aquaculture - F&A sector is characterized by SMEs/micro-firms generally facing difficulties in accessing to innovation due to their dimension combined with high entry costs for R&D. SMEs have also scarce attitude to cooperate and there is substantial gap between R&D providers and SMEs due to lack of substantive understanding of industry needs and mutual dialogue. To meet challenges, it is necessary that F&A firms exploit their products potential, innovate value & quality of territorial F&A tradition by transforming the classic "do everything alone" into innovative multi-open partnership approach applied with tailored and innovation & demand-led support. Challenge is even intensified by impact of persistent financial & economic crisis, which requires structural & significant changes for F&A.

INVESTINFISH innovative multi-open partnership approach created critical mass to compete on world level and set steady linkage among PPs excellence systems for sustainable cooperation. Co-learning dialogs with S3 policy makers accelerated development of innovation investment instruments and jointly steered beneficial market deployment in IT-HR regions, contributing to RIS targets. The importance of the technological transfer was indeed highlighted by the Smart Specialization Strategies developed in the programme area on national and regional level, all of them selecting as a priority for the upcoming period the Key Enabling Technologies (KETs). The use of KETs for the F&A sector included solutions aimed at increasing the environmental sustainability of the SMEs themselves. Most innovative part of INVESTINFISH concerned the capitalisation of frontrunner H2020 project's results related to novel EU label for INNOVATION Voucher scheme.

Innovative capacity and sustainable structures for research and innovation are linked to the interaction of framework factors enabling knowledge to be converted into new products, processes, behaviors and organizational forms, which in turn enhance economic development and growth. The improvement of innovation framework conditions - in terms of institutional cooperation, policy instruments and developing practical cross-linkages between enterprises, R&D institutions, higher education, the public sector and the citizens - is a major challenge for the most part of the area. This challenge is even intensified by the impact of the persistent financial and economic crisis on the blue sector, which requires structural and significant changes of the whole production chain. The economic crisis has in fact reinforced the need to develop new organization processes and knowledge-based competitiveness, encouraging clusters among innovation players and the creation of innovative business and social models. In particular, there is a need for integrated management in the field of fishery, especially concerning innovative mechanisms for sustainable growth and protection of Adriatic ecosystem.

To increase the competitiveness and economic performance of aquaculture and fishery sector, it is vital to stimulate and to provide support for investment in innovation. INVESTINFISH approach, towards driving innovation in F&A sector, started from the lack of systematization of information, identified as prior on both countries, regarding the F&A in terms of mapping poles of excellence able to trigger innovation in the 5 Regions concerned, funding schemes, innovation requirements from SMEs and best advanced solutions. To this goal, an entire WP3 was specifically devoted to providing an exhaustive diagnosis of the innovation background, needs, solutions for fishery & aquaculture. The WP4 was structured to offer tailored innovation services to selected groups of enterprises of F&A; bringing science and innovation from the drawing table to the marketplace is one of the main leverages to support for emerging-sector start-ups and incentivizing innovation in SMEs as key to job creation and the sustainable use of seas and other water mirrors.



In INVESTINFISH, the cross-border cooperation was itself the key-brick of the innovation management services in technology transfer characterized by an "open innovation" approach. Indeed, the rise of increasingly technology concepts capable of modernizing F&A (such as new IT devices, automation, last-generation sensors & nanomaterial, as proposed by the market or deriving by EU-funded research & ITHR laboratories) requires the creation of an appropriate open & collaborative environment, as the key-matter of competitiveness is the rapid transposition of KET of R&D results in new end-users components and new applications for companies operating in fishery and aquaculture sector.

Therefore, it is evident that joint knowledge sourcing services can be more and more efficient for the final beneficiaries by aggregating the excellence nodes in one system and this can be reached through the cross-border cooperation within the most dynamic innovation poles inside and outside the Italy – Croatia cooperation area.

The INVESTINFISH overall objective was strengthening the competitiveness of F&A production system through the promotion of investment streams aimed at the acquisition of innovation services, instrumental in the development of innovative entrepreneurship programs, intellectual property management, support for design, use and organizational upgrading. The use of emerging KETs for the sector included solutions aimed at increasing the environmental sustainability of the SMEs themselves. The implemented pilot actions boosted the creation of marketable innovative products and/or processes that will improve SMEs potential market positioning.

INVESTINFISH leaned over proposing financial instruments that are completely new for the F&A sector: Innovation vouchers and the combined use of ESIF and EFSI funds for the benefit of F&A SMEs. They have to encourage SMEs in implementing innovative solutions (also more sustainable ones) and helping to go ahead from the idea to market.

The project embedded the change from the current innovation management model, where F&A companies have a low posture to innovation & technology scouting is mainly "local based", to the open innovation environment. The matchmaking analysis to combine project advanced technologies with actual/real companies' requirements and the effective application of the test over selected & target enterprises, regardless the origin of the R&D and KET-based technological concepts, increased economic interdependences among the INVESTINFISH pilot areas & encourages more effective cross border value chains in fishery and aquaculture sector.

Knowledge transfer strategy & Regional Innovation's driven Action kept bridging and multiplying R&D activities in a collaborative environment and fostered business in synergetic sectors, consolidating and expanding the open innovation services to new companies & users.

2.1.2 Key Exploitable Result description and analysis

White Paper

Table 1 – Identifying and describing a Key Exploitable Result (KER)

Description\value proposition of the KER	Description of the KER, including the technical details
Type of KER: <ul style="list-style-type: none"> • Direct KER 	Whitepaper analysing the pilot cases results and describing actions to be adopted by policymakers and stakeholders.
Type of content to be exploited: <ul style="list-style-type: none"> • immaterial assets 	Document/knowledge
Collateral\secondary ER	No
Strategic area of application	Strengthening the competitiveness of F&A production system
Acronym of the project that achieved the KER	INVESTINFISH
Types of project partners that achieved the KER	Research organisation, University, Cluster organization, business organization
KER availability (proprietary\public)	Public
Responsible partner to be contacted for exploitation	T2i trasferimento tecnologico ed innovazione

Table 2 - Strengths, weaknesses and exploitation routes of KER

KER Strengths	<ul style="list-style-type: none"> • Improving the conditions for innovation in the nautical/maritime sector • strengthen the connections between innovation experts and production systems • Strengthen the connections between research organizations and production systems • • increase the possibilities of access to innovative and digitization processes • Finance innovation processes • Develop new educational knowledge and professional skills in the blue economy in response to SME demand • Strengthen CB clusters in the blue economy area • Possibility of transferring the experience to other training/work sectors • Capitalize on experiences and direct them to other SME • Increased sustainability: reduce environmental impact, reduce energy consumption implement circular processes. • Develop the product value: better promote the product, valorise local typicality, improve the product quality, increase the perceived value by the customer.
KER Weaknesses	<ul style="list-style-type: none"> • Difficulties in transferring the experience gained to be adopted at the national level • Difficulty in communicating with public organizations • Closed clusters unwilling to listen to external experts • Operator's skills and competences
Areas into which the KER is expected to make an impact	<ul style="list-style-type: none"> • Connection among research organisation and companies of the blue economy • Connection among cluster and research word
Needs that might be solved/met by the results	<ul style="list-style-type: none"> • Cost Reduction • New Markets • Sustainability • Higher Added Value

<p>Commercialization potential</p>	<p>Cost Reduction</p> <ul style="list-style-type: none"> Change/update equipment Implement digital technologies Implement more efficient equipment Reduce wastes Transform waste in secondary products Optimise processes Analise processes and get rid of inefficiencies Optimise transport <p>New Markets</p> <ul style="list-style-type: none"> Develop new products Focus on traceability and quality Diversify production Find uses for waste Get in touch with new customers New commercial channels Digital technologies (website, social networks) <p>Sustainability</p> <ul style="list-style-type: none"> Transform waste in secondary products New uses of current waste Better separation of waste to recover valuable parts Implement a management system to monitor the environmental impact of activities <p>Certifications</p> <ul style="list-style-type: none"> Traceability Reduce packaging's impact <p>Higher Added Value</p> <ul style="list-style-type: none"> Increase value of by-products Better marketing for by-products Better processing of by-products New/improved products Better match with consumers' desires Digital technologies to monitor quality
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Intellectual Property Rights owner:	Potential for many pilots developed
Potential users of the results	<ul style="list-style-type: none"> • National/regional educational administrations • Blue economy companies • Research organisation
Methods to contact them	Project website, lead partner mail, organization of a workshop/conference, one-to-one meeting, etc.
Passive exploitation channels and mechanisms	Social media, newspapers, presentations at conferences and workshops
Active exploitation channels and mechanisms	webinars, public events, training course, company visits, joint implementation of models



Pilot Action

Table 3 – Identifying and describing a Key Exploitable Result (KER)

Description\value proposition of the KER	Description of the KER, including the technical details
Type of KER: <ul style="list-style-type: none"> • Direct KER 	Pilot actions results. A research-based report that offers a targeted description of the entire Investinfish project, starting from the description of the context, the approaches used, the pilot actions developed and their outcomes, the actors involved, the main results.
Type of content to be exploited: <ul style="list-style-type: none"> • material assets • immaterial assets 	The content is configured as a material document, comparable to a tool, which offers an overview of the range of knowledge developed, methodologies used and results achieved with Investinfish
Collateral\secondary ER	No
Strategic area of application	Strengthening the competitiveness of F&A production system
Acronym of the project that achieved the KER	INVESTINFISH
Types of project partners that achieved the KER	Research organisation, Cluster organization, business organization, companies
KER availability public / proprietary	General overview: public Specific technology implementation: proprietary
Responsible partner to be contacted for exploitation	T2i trasferimento tecnologico ed innovazione

Table 4 - Strengths, weaknesses and exploitation routes of KER

KER Strengths	<ul style="list-style-type: none"> • Improving the conditions for innovation in the nautical/maritime sector • strengthen the connections between innovation experts and production systems • Strengthen the connections between research organizations and production systems • • increase the possibilities of access to innovative and digitization processes • Finance innovation processes • Develop new educational knowledge and professional skills in the blue economy in response to SME demand • Strengthen CB clusters in the blue economy area • Possibility of transferring the experience to other training/work sectors • Capitalize on experiences and direct them to other SME • Increased sustainability: reduce environmental impact, reduce energy consumption implement circular processes. • Develop the product value: better promote the product, valorise local typicality, improve the product quality, increase the perceived value by the customer.
KER Weaknesses	<ul style="list-style-type: none"> • Difficulties in transferring the experience gained to be adopted at the national level • Difficulty in communicating with public organizations • Closed clusters unwilling to listen to external experts • Operator's skills and competences
Areas into which the KER is expected to make an impact	<ul style="list-style-type: none"> • Connection among research organisation and companies of the blue economy • Connection among cluster and research word
Needs that might be solved/met by the results	<ul style="list-style-type: none"> • Cost Reduction • New Markets • Sustainability • Higher Added Value

<p>Commercialization potential</p>	<p>Cost Reduction</p> <ul style="list-style-type: none"> Change/update equipment Implement digital technologies Implement more efficient equipment Reduce wastes Transform waste in secondary products Optimise processes Analise processes and get rid of inefficiencies Optimise transport <p>New Markets</p> <ul style="list-style-type: none"> Develop new products Focus on traceability and quality Diversify production Find uses for waste Get in touch with new customers New commercial channels Digital technologies (website, social networks) <p>Sustainability</p> <ul style="list-style-type: none"> Transform waste in secondary products New uses of current waste Better separation of waste to recover valuable parts Implement a management system to monitor the environmental impact of activities <p>Certifications</p> <ul style="list-style-type: none"> Traceability Reduce packaging's impact <p>Higher Added Value</p> <ul style="list-style-type: none"> Increase value of by-products Better marketing for by-products Better processing of by-products New/improved products Better match with consumers' desires Digital technologies to monitor quality
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Intellectual Property Rights owner:	Potential for many pilots developed
Potential users of the results	<ul style="list-style-type: none"> • National/regional educational administrations • Blue economy companies • Research organisation
Methods to contact them	Project website, lead partner mail, organization of a workshop/conference, one-to-one meeting, etc.
Passive exploitation channels and mechanisms	Social media, newspapers, presentations at conferences and workshops
Active exploitation channels and mechanisms	webinars, public events, training course, company visits, joint implementation of models



Memorandum of understanding

Table 5 – Identifying and describing a Key Exploitable Result (KER)

Description\value proposition of the KER	Description of the KER, including the technical details
Type of KER: <ul style="list-style-type: none"> • Direct KER 	Memorandum of Understanding on trans-national cooperation for economic development in the blue economy
Type of content to be exploited: <ul style="list-style-type: none"> • immaterial assets 	Network of relationships among the signed organizations and their specific knowledge in the blue economy related technology and business processes.
Collateral\secondary ER	Synergy between the partners involved for future activities
Strategic area of application	Agreement between the organizations signed to support the birth and development of research and entrepreneurial cooperation in the blue economy and to promote networking activities for companies in the sector, and further possibilities of access to technological and innovative consultancy, to promote sustainable processes and products
Acronym of the project that achieved the KER	INVESTINFISH
Types of project partners that achieved the KER	Research organisation, Cluster organization, business organization, companies
KER availability (proprietary\public)	Public
Responsible partner to be contacted for exploitation	T2i trasferimento tecnologico ed innovazione

Table 6 - Strengths, weaknesses and exploitation routes of KER

KER Strengths	<ul style="list-style-type: none"> • Improving the conditions for innovation in the nautical/maritime sector • strengthen the connections between innovation experts and production systems • Strengthen the connections between research organizations and production systems • • increase the possibilities of access to innovative and digitization processes • Finance innovation processes • Develop new educational knowledge and professional skills in the blue economy in response to SME demand • Strengthen CB clusters in the blue economy area • Possibility of transferring the experience to other training/work sectors • Capitalize on experiences and direct them to other SME • Increased sustainability: reduce environmental impact, reduce energy consumption implement circular processes. • Develop the product value: better promote the product, valorise local typicality, improve the product quality, increase the perceived value by the customer.
KER Weaknesses	<ul style="list-style-type: none"> • Difficulties in transferring the experience gained to be adopted at the national level • Difficulty in communicating with public organizations • Closed clusters unwilling to listen to external experts • Operator's skills and competences
Areas into which the KER is expected to make an impact	<ul style="list-style-type: none"> • Connection among research organisation and companies of the blue economy • Connection among cluster and research word
Needs that might be solved/met by the results	<ul style="list-style-type: none"> • Cost Reduction • New Markets • Sustainability • Higher Added Value

<p>Commercialization potential</p>	<p>Cost Reduction Change/update equipment Implement digital technologies Implement more efficient equipment Reduce wastes Transform waste in secondary products Optimise processes Analise processes and get rid of inefficiencies Optimise transport New Markets Develop new products Focus on traceability and quality Diversify production Find uses for waste Get in touch with new customers New commercial channels Digital technologies (website, social networks) Sustainability Transform waste in secondary products New uses of current waste Better separation of waste to recover valuable parts Implement a management system to monitor the environmental impact of activities Certifications Traceability Reduce packaging's impact Higher Added Value Increase value of by-products Better marketing for by-products Better processing of by-products New/improved products Better match with consumers' desires Digital technologies to monitor quality</p>
<p>Intellectual Property Rights owner:</p>	<p>Potential for many pilots developed</p>

Potential users of the results	<ul style="list-style-type: none"> • National/regional educational administrations • Blue economy companies • Research organisation
Methods to contact them	Project website, lead partner mail, organization of a workshop/conference, one-to-one meeting, etc.
Passive exploitation channels and mechanisms	Social media, newspapers, presentations at conferences and workshops
Active exploitation channels and mechanisms	webinars, public events, training course, company visits, joint implementation of models



Action Plan

Table 7 – Identifying and describing a Key Exploitable Result (KER)

Description\value proposition of the KER	Description of the KER, including the technical details
Type of KER: <ul style="list-style-type: none"> • Direct KER 	Specific Action plan for transferring: this document are meant to address the main weakness and threats emerged from pilot cases. Indeed, Pilot cases carried out in INVESTINFISH allowed to identify specific issues that should be addressed to foster growth and sustainability in the F&A sector and are the basis for the Action Plan presented in this document. For each action proposed there are: an action description and recommended, a motivation and the stakeholders to be involved.
Type of content to be exploited: <ul style="list-style-type: none"> • immaterial assets 	The document represents an opportunity for reflection towards the real needs and weakness of many companies in the fishing sector. It could be considered as an information document that shows a description of the possible ways to follow to achieve improvements. It could be a useful starting point for the next steps.
Collateral\secondary ER	No
Strategic area of application	Strengthening the competitiveness of F&A production system
Acronym of the project that achieved the KER	INVESTINFISH
Types of project partners that achieved the KER	Research organisation, Cluster organization, business organization, companies
KER availability (proprietary\public)	Public
Responsible partner to be contacted for exploitation	T2i trasferimento tecnologico ed innovazione

Table 8 - Strengths, weaknesses and exploitation routes of KER

KER Strengths	<ul style="list-style-type: none"> • Improving the conditions for innovation in the nautical/maritime sector • strengthen the connections between innovation experts and production systems • Strengthen the connections between research organizations and production systems • • increase the possibilities of access to innovative and digitization processes • Finance innovation processes • Develop new educational knowledge and professional skills in the blue economy in response to SME demand • Strengthen CB clusters in the blue economy area • Possibility of transferring the experience to other training/work sectors • Capitalize on experiences and direct them to other SME • Increased sustainability: reduce environmental impact, reduce energy consumption implement circular processes. • Develop the product value: better promote the product, valorise local typicality, improve the product quality, increase the perceived value by the customer.
KER Weaknesses	<ul style="list-style-type: none"> • Difficulties in transferring the experience gained to be adopted at the national level • Difficulty in communicating with public organizations • Closed clusters unwilling to listen to external experts • Operator's skills and competences
Areas into which the KER is expected to make an impact	<ul style="list-style-type: none"> • Connection among research organisation and companies of the blue economy • Connection among cluster and research word
Needs that might be solved/met by the results	<ul style="list-style-type: none"> • Cost Reduction • New Markets • Sustainability • Higher Added Value

<p>Commercialization potential</p>	<p>Cost Reduction Change/update equipment Implement digital technologies Implement more efficient equipment Reduce wastes Transform waste in secondary products Optimise processes Analise processes and get rid of inefficiencies Optimise transport New Markets Develop new products Focus on traceability and quality Diversify production Find uses for waste Get in touch with new customers New commercial channels Digital technologies (website, social networks) Sustainability Transform waste in secondary products New uses of current waste Better separation of waste to recover valuable parts Implement a management system to monitor the environmental impact of activities Certifications Traceability Reduce packaging's impact Higher Added Value Increase value of by-products Better marketing for by-products Better processing of by-products New/improved products Better match with consumers' desires Digital technologies to monitor quality</p>
<p>Intellectual Property Rights owner:</p>	<p>Potential for many pilots developed</p>

Potential users of the results	<ul style="list-style-type: none"> • National/regional educational administrations • Blue economy companies • Research organisation
Methods to contact them	Project website, lead partner mail, organization of a workshop/conference, one-to-one meeting, etc.
Passive exploitation channels and mechanisms	Social media, newspapers, presentations at conferences and workshops
Active exploitation channels and mechanisms	webinars, public events, training course, company visits, joint implementation of models



2.1.3 Target receivers

General public 150000

Citizens, despite not being the main target of the INVESTINFISH project, were informed about the project potential; in particular how INTERREG funds can contribute to the improvement of territorial enterprises. In specific, through public events, mass media communication, social networks, sectorial articles, PPS prepared ad hoc messages having a divulgative level of comprehension.

Local, regional and national public authorities 5

Regional councils of IT-HR Regions were directly addressed; in particular, their Department for ESIF funds regional managing authorities were directly implicated in the discussion on the future combination of ESIF and EFSI funds and on the working tables (together with banks, chambers of commerce, private equity funds) studying novel mechanisms stimulating access to funds and investments by the F&A enterprises.

SMEs 75

Enterprises (mainly of small-micro size) of 6 Regions were involved in the first step selection. 48 of them received ad hoc innovation services by the PPs. Among the INVESTINFISH PPs there is a business support org that also acts as ichthyic cluster. Other PPs had as mission the support to F&A SMEs and a privileged link with regional institutions and R&D providers. 35 start-up – spin off were implicated within the local-based open selection.

Universities, technology transfer institutions, research institutions 10

Scientific international community, including leaders of research projects financed by EU or National Government in the same thematic field.

Centers of excellence 10

Innovation poles and networks devoted to trigger innovation were reviewed and directly involved in the project as innovation providers.

2.1.4 Synergies with networks to take advantage of exploitation

Network 1: **FEDERPESCA - National Federation of Fishing Enterprises under the aegis of Unindustria**

It is clear from the pilot cases that many innovation actions desired by the MSMEs in the fisheries and aquaculture sector require the **involvement of other actors in the supply chain**.

For example, the increased attention to the environment is pushing some companies in the sector to be interested in bioplastic materials for use in packaging. The advantage of this material is that in theory this material is compostable, thus minimising its environmental impact. However, only a small part of the existing composting plants can degrade compostable plastics, and this material therefore ends up in landfill or incineration. The lack of an ecosystem therefore prevents the effectiveness of innovation.

More generally, MSMEs (also because of their size) are often verticalized to a specific stage in the supply chain and carry out only part of the process in which they are involved. The effective adoption of innovation therefore also requires the involvement of other actors upstream or downstream in the supply chain.

Network 2: **RESERCH ORGANIZATION**

Synergic effect:

The pilot actions allow to create a roadmap that links the desired benefit with the possible actions needed to reach it. Most innovation projects have a (greater or smaller) focus on the re-use of by-products and the reduction of wastes. Indeed, companies currently have to pay to discard wastes, and therefore becoming able to sell it would have huge benefits for the company. This is a summary table clustering the case studies carried on in the pilot actions, presenting the benefits that SMEs were looking for and the approach they used to reach it.

Benefit	How to Reach it
Cost Reduction	<ul style="list-style-type: none"> ➔ Change/update equipment <ul style="list-style-type: none"> ○ Implement digital technologies ○ Implement more efficient equipment ➔ Reduce wastes <ul style="list-style-type: none"> ○ Improve environmental conditions (reduces wastes) ○ Transform waste in secondary products ➔ Optimise processes <ul style="list-style-type: none"> ○ Analise processes and get rid of inefficiencies

	<ul style="list-style-type: none"> ○ Optimise transport
New Markets	<ul style="list-style-type: none"> ➔ Develop new products <ul style="list-style-type: none"> ○ Focus on traceability and quality ○ Diversify production ○ Find uses for waste ➔ Get in touch with new customers <ul style="list-style-type: none"> ○ New commercial channels ○ Digital technologies (website, social networks)
Sustainability	<ul style="list-style-type: none"> ➔ Transform waste in secondary products <ul style="list-style-type: none"> ○ New uses of current waste ○ Better separation of waste to recover valuable parts ➔ Implement a management system to monitor the environmental impact of activities <ul style="list-style-type: none"> ○ Certifications ○ Traceability ➔ Reduce packaging's impact
Higher Added Value	<ul style="list-style-type: none"> ➔ Increase value of by-products <ul style="list-style-type: none"> ○ Better marketing for by-products ○ Better processing of by-products ➔ New/improved products <ul style="list-style-type: none"> ○ Better match with consumers' desires ○ Digital technologies to monitor quality

Network 3: Policymakers' involvement

Synergic effect:

INVESTINFISH engaged policymakers and stakeholders in all the Regions, in order to have a continuous exchange on the needs of the F&A sector, strategic regional priorities, and so on.

Their involvement was fundamental to support the development of new policies or update existing ones, in order to include best practices and/or services models emerging from the project. For the trustworthiness of the results and the outputs (both quantitative and qualitative analysis) in fact,

the match of the research activities with rules, standards and legislation is something crucial. Ensuring uptake and legitimization of project innovation services represent the key factor for a high potential impact of the research. For this reason, it is essential to understand the dynamic trends in economic, social, and environmental developments and to anticipate and prevent emerging challenges by channelling and supporting critical thinking in policy debates.

All PPs were in charge with the consultation with S3 managers and Regional Authorities within their area of competence and this allow them to identify different relevant entities such as: e managers of Fish and Aquaculture regional offices, Regional Innovative Networks, Clusters and Districts, and experts in fields of circular economy, environmental sustainability and, more in general, the innovation experts.

For the involvement of these key figures, focus groups and 5 regional meetings were organized by every project partner. Policymakers, and in general stakeholders, discussed on new national and international market needs and how to face them, considering sustainability, industry 4.0 and the progression of technology, wellness and life quality, social inclusion, and safety. Another important aspect emerged, that is the investment theme. To stimulate innovation, technological and sustainable growth of SMEs and the applicability of innovative solutions, new mechanisms stimulating the access of funds and investments, by the blue enterprises, are necessary. For this reason, it is particularly important to investigate alternative finance instruments to be combined with traditional ESI funds.

The aim of this kind of participatory approaches, in fact, is to develop practices of a democratic type, through the promotion of expression and communication of interested groups, considering all their interests and building a collective consensus in order to facilitate the realization of a sustainable change. Moreover, such participation, especially if viewed in a systemic way as a set of surveys and focus groups, repeated in different phases, aimed at promoting the dialogue of more or less homogeneous groups, in a flexible way and on a small scale, can lead to great results.

2.2 Blue enhancement action for technology transfer (BEAT) project

2.2.1 Project description

Research and business relationships between IT and HR are characterized by some limits referring to creation of efficient synergies/network between clusters and SMEs, research centers/universities that are not able to exploit their potentials, both individually and in collaboration by creating an appropriate critical mass for improvement of innovation capabilities. Not practical cross linkages among SMEs, clusters, research centers, universities, chambers of commerce to support the creation and contamination of new organizational processes that could reinforce knowledge-based competitiveness of main actors in area encourage clustering among innovation actors and creation of innovative business and social models.

The main aim of the BEAT project was **to strengthen innovation processes of main economic actors and cooperation levels between SMEs, cluster and research centers/universities operating in IT and HR, as qualified segments of shipbuilding and maritime sectors and of “blue value chain”**. By capitalizing on the feasibility study implemented in the Blue Tech project, **BEAT consortium created a cross-border cluster in maritime and shipbuilding sectors including operators of other sectors operating in the same value chain, to help SMEs operating in this sectorial space (“blue value chain”) to improve their ability to organize and manage their innovation processes in more effective way.**

Specific objectives were: developing a transnational cluster in blue technologies in shipbuilding sector and sectors related to blue value chain; mapping/assessing conditions enabling the development of transnational cluster; networking to facilitate collaboration and knowledge; definition of appropriate transnational cluster governance model to support the sustainability on cluster; identification models ability to organize/manage their creative and innovative processes in a more effective way; revision of innovation strategies.

2.2.2 Key Exploitable Result description and analysis

Cluster governance model

Table 9 – Key Exploitable Result (KER)

Description\value proposition of the KER	Description of the KER, including the technical details
Type of KER: <ul style="list-style-type: none"> Direct KER 	Outline/description of the cluster governance model identifying the members, their roles and relationships, the level of codification of the cluster organizational structure
Type of content to be exploited: <ul style="list-style-type: none"> immaterial assets 	The cluster governance model can be applied as strategic knowledge to a new cluster – also in the international context – to sustain and support its development
Collateral\secondary ER	Map of the existing governance models applied to clusters in Italy and Europe
Strategic area of application	Favoring the rapid set-up and growth of clusters
Acronym of the project that achieved the KER	BEAT
Types of project partners that achieved the KER	Cluster organization, university
KER availability (proprietary\public)	Public
Responsible partner to be contacted for exploitation	MARE FVG

Table 10 - Strengths, weaknesses and exploitation routes of KER

KER Strengths	Rooted on international comparison, detailed in the organizational and institutional framework, supported by empirical evidence (case studies)
KER Weaknesses	To be explained to be fully implemented, also with institutional agreement at its basis
Areas into which the KER is expected to make an impact	Cluster strategy development
Needs that might be solved/met by the results	Local economic development, international industrial and Industry-research cooperation
Commercialization potential	free of charge.
Intellectual Property Rights owner:	No
Potential users of the results	Local institutions (i.e. Chamber of commerce), Universities, Industry associations, firms in different industries
Methods to contact them	Project Website, One-to-one meeting
Passive exploitation channels and mechanisms	project website, technical & policy reports
Active exploitation channels and mechanisms	webinars, company visits

Memorandum of Understanding

Table 11 – Key Exploitable Result (KER)

Description\value proposition of the KER	Description of the KER, including the technical details
Type of KER: <ul style="list-style-type: none"> • Direct KER • 	Memorandum of Understanding on trans-national cooperation for economic development in the blue economy
Type of content to be exploited: <ul style="list-style-type: none"> • immaterial assets 	Network of relationships among the signed organizations and their specific knowledge in the blue economy related technology and business processes.
Collateral\secondary ER	None
Strategic area of application	Agreement among the signed organizations to support the rise and development of research and business cooperation in the blue economy
Acronym of the project that achieved the KER	BEAT
Types of project partners that achieved the KER	Chamber of Commerce, University, Cluster organization, business organization
KER availability (proprietary\public)	Public
Responsible partner to be contacted for exploitation	Unioncamere del Veneto

Table 12 - Strengths, weaknesses and exploitation routes of KER

KER Strengths	Existing demonstration of cooperation among the signing organizations
KER Weaknesses	To be implemented
Areas into which the KER is expected to make an impact	Industry-research-institution cooperation for local development and competitiveness enhancement
Needs that might be solved/met by the results	Promotion of research and industry results, International business development
Commercialization potential	free of charge.
Intellectual Property Rights owner:	No
Potential users of the results	Local institutions (i.e. Chamber of commerce), Universities, Industry associations, firms in different industries
Methods to contact them	Project Website, One-to-one meeting.
Passive exploitation channels and mechanisms	project website, presentations at technical & policy conferences and workshops
Active exploitation channels and mechanisms	Company and university visits, joint events

Mapping of innovation and research trajectories in the ship/boat building value chain

Table 13 – Key Exploitable Result (KER)

Description\value proposition of the KER	Description of the KER, including the technical details
Type of KER: <ul style="list-style-type: none"> • Direct KER • 	List of innovation and research trajectories related to the different steps of the shipbuilding value chain
Type of content to be exploited: <ul style="list-style-type: none"> • immaterial assets 	Detailed analysis of the innovation and research trajectories implemented at the business and research levels by firms and research centers
Collateral\secondary ER	List of companies interviewed, case studies developed, survey results
Strategic area of application	<ul style="list-style-type: none"> A. Project Development Methodologies And New Products, Processes And Services Development B. “Green” And Energy Efficiency Technologies C. Safety Technologies
Acronym of the project that achieved the KER	BEAT
Types of project partners that achieved the KER	Chamber of Commerce, University, Cluster organization, business organization
KER availability (proprietary\public)	Public
Responsible partner to be contacted for exploitation	Unioncamere del Veneto

Table 14 - Strengths, weaknesses and exploitation routes of KER

KER Strengths	Integrated view of the innovation and research trajectories in the ship/boat building value chain
KER Weaknesses	It could be further supported by additional data and case study analyses
Areas into which the KER is expected to make an impact	Industry innovation trajectories, industry-research collaboration
Needs that might be solved/met by the results	Product innovation, process innovation, human capital development in the ship/boat building industry
Commercialization potential	free of charge.
Intellectual Property Rights owner:	No
Potential users of the results	Companies in the ship/boat building value chains, University and research centers, TTO
Methods to contact them	Project Website
Passive exploitation channels and mechanisms	project website, report, presentations at scientific, technical & policy conferences and workshops
Active exploitation channels and mechanisms	webinars, demonstration events, training courses, company visits

2.2.3 Target receivers and respective exploitation channels

SMEs - 60

The BEAT project supported the target SMEs to improve their ability to organize and manage their innovation processes in more effective way. During the implementation of the project the partners in charge for the organization of specific training and events have involve SMEs belong to the sector of the Blue Economy for a mutual knowledge and sharing best practices.

Universities, technology transfer institutions, research institutions - 4

The BEAT project supported the creation of the dialogue with the Universities, technology transfer institutions and offices, research institutions, centres of R&D excellence of the partner countries in order to share the framework conditions of innovation.

NGOs, associations, innovation agencies, business incubators, cluster management bodies and networks – 5

Regarding NGOs, associations, innovation agencies, business sector, cluster management bodies and networks, education and training organization as well as social partner and labour – market institutions: the project opened the dialogue with the above mentioned target groups in order to disseminate the project’s outputs, guarantee a transfer of knowledge and awareness, with specific attention to the development of cross-border cluster.

Regional and local development agencies, chambers of commerce and other business support organisations – 30

The project involved the chambers of commerce the partner Countries involved in the project, in particular involved them in the target activities and the participation at the main relevant project events.

Local, regional and national public authorities – 8

To receive inputs and recommendations for the development of initiatives and actions for the Blue Economy, local, regional and national public authorities were involved. Moreover, the partnership opened a dialogue with the national and regional authorities of the two Countries by inviting them to the main project events.

2.2.4 Synergies with networks to take advantage of exploitation

Network 1: BEAT Project aimed to the creation of a trans-national cluster in the Blue Economy and specifically in the shipbuilding industry may benefit from other cluster organizations. Specifically, regarding the BEAT Project, parties of CMO should support the implementation of the following key activities: sharing of initiatives and activities linked to the Blue Sectors and innovation relying on information sources at regional and national level; public meetings bridging production and technology chains; project related events and institutional and policy activities; designing joint events or side events of common interest for both the territories involved; promoting and supporting technology transfer activities to enhance business and innovation competitiveness of the Blue Economy and related value chain; sustaining internationalization through sharing of information on mutual fairs organized by aggregation and business-related players; stimulating the participation of enterprises to any matchmaking event; support joint development of European projects and sharing of mutual portfolio on enterprises involved in the network.

Synergic effect: project or initiative linked to the targeted territories and the reference topics of the BEAT and Class4.0 project.

Network 2: Memorandum of Understanding on trans-national cooperation for economic development in the blue economy: to promote trans-national partnership to sustain the growth, the economic and institutional development of the parties involved in the blue economy operating in Croatia and Italy (mainly, but not limited to) actors based in the regions facing the Adriatic – Ionian Sea, through the creation of a network of diversified stakeholders aimed to support collaboration for knowledge creation and exchange, progress in competences and entrepreneurship opportunities at the international level.

Synergic effect: sustain knowledge exchange and business support through community development; promotion of joint innovation activities to foster sustainable product and process innovation in the field of blue economy and promotion of joint innovation activities to foster sustainable product and process innovation in the field of blue economy.

2.3 BLUE Knowledge Exchange Program and integration of education systems in the cross-border area (BLUEKEP) project

2.3.1 Project description

In the Programme area, Blue Economy value chain (Nautical, shipbuilding, and maritime technologies) represents one of the main socio-economic assets and shows evident potentials for development. However, its potential is currently hampered by barriers related to the regulatory framework of mutual recognition of competences, diplomas and professional paths, and lack of both technical skills and innovation. As regards the lack of technical skills - which is one of the main reasons of lack of innovation – the Secondary Schools are still too much focused on the mere passive transfer of notions, and they are often not able to face the cultural and social challenges of a constantly changing world.

Skill shortages and mismatch in the Programme area are also highlighted by the European Parliament 's study "Labor market shortages in the European Union". Therefore, the framework conditions for a competitive and innovative blue economy can be improved only through cooperation between innovation players in blue economy relevant sectors. Consequently, BLUE KEP aimed at enhancing the framework conditions for innovation in nautical and maritime sectors within the cooperation area, by strengthening integration of education systems in the cross-border area through the harmonization of the technical education systems.

This goal was achieved through standardization of school curricula and methods for assessment and recognition of educational and professional knowledge of students. The project contributed to the creation of an integrated educational and professional framework in the Partnership area, leading to increased mobility of knowledge and workforce, and to increased exploitation of the economic potential of the area.

Project overall objective was to enhance the framework conditions for innovation in nautical/maritime sector within the cooperation area, by strengthening the integration of education systems through harmonization of the technical educational systems. This goal was achieved through standardization of school curricula and methods/tools for assessment and recognition of skills at both educational and professional level, building on good practices gained by former KEPASS project. The strategy was to create/strengthen connections among Italian and Croatian educational sectors and productive systems, starting from the technical school system addressed to nautical/maritime technologies. In that way, the project developed new educational and knowledge mobility schemes and professional skills, which contributed to a better exploitation of the

innovation existing potential in CB area. The project was therefore fully in line with the Programme priority specific objective.

BLUE KEP innovative character derived from the choice of nautical and technical institutes as main recipients of the project, and student involvement in traineeships. The reason of this choice was that nautical and technical institutes should be considered as a catalyst for innovation and new ideas. Therefore, student mobility enhanced a virtuous cycle boosting “brains circulation”, contributing to the reinforcement of cross-border clusters in the blue economy area and promoting joint development of synergies between enterprises and the education centres.

BLUE KEP capitalized on several KEPASS project achievements and outputs: working approach in terms of improvement of reciprocal knowledge and standardization of educational programs and school systems will be exploited and implemented in ship/maritime sectors. This created a long-lasting cross-border network among actors of the quadruple innovation helix in the Programme area and fostered the production of specialized workforce with common recognized skills, able to foster innovation and competitiveness in the Programme area.

The need to achieve innovation shall be fulfilled by ensuring the availability of high skilled resources able to meet SMEs demand in key blue economy sectors. For the above-mentioned reasons, the project aimed to develop an integrated cross border (CB) approach to upgrade and internationalize technical secondary schools and Maritime Technical Colleges that would benefit from knowledge exchange, mobility programs and upgrade of their education offer with additional “international modules”, and, most important, internships in Blue Economy value chain companies. Investing in better education systems fostered competitiveness and dynamism of the CB economy, and aligned skills targeted to the specific labor market need. This contributed to the achievement of the Europe 2020 Strategy’s first pillar (Smart Growth). Availability of qualified workers and an efficient integrated education system are pivotal elements to meet both knowledge and technical needs of maritime/ship companies and to improve their innovation performance.

The added value of the cross-border cooperation in this project stemmed from the promotion of joint implementation of actions focused on shared needs of the Programme area, especially in terms of skills shortages, youth unemployment, lack of innovation and weak competitiveness. Cross-border cooperation was an essential condition to ensure the achievement of project’s main objectives, particularly regarding settling the conditions for effective “brains circulation” across the Programme area and the related improvement of the Area’s innovation, competitiveness and economic performances. All project activities were conducted through a cooperative approach between partners who jointly developed working methods and implemented the planned activities at both local and transnational level. In particular, joint cooperation was essential to set the mutual recognition of professional skills criteria and to pave the way for a joint

educational offer through the introduction of common modules in English in the partner schools' teaching programmes. To this end, a joint discussion was opened to establish a mutual recognition framework for skills and teaching programmes and to approve shared methodological evaluation standards. Thus, all project objectives and methods were based on a cross border rationale, and the project itself could not be realized unless a cross-border cooperation approach was adopted. In other words, the added value of the project's CB approach stemmed from the exchange of good practices among different education systems which were achieved through the strict cooperation among involved actors. The project enabled the creation of a CB learning and knowledge coordination system, combining both bottom-up and top-down governance, and its outcomes were presented at national level to let adopt and implement project's good practices on a larger scale.



2.3.2 Key Exploitable Result description and analysis

Standardisation of school curricula

Table 15 – Identifying and describing a Key Exploitable Result (KER)

Description\value proposition of the KER	<p>Strengthening the integration of education systems through harmonization of the technical educational systems. The 4 international modules used for this purpose were developed according to European mobility instruments such as the European Qualifications Framework (EQF), the European Credit System for Vocational Education and Training (ECVET) and the European Credit Transfer and Accumulation System (ECTS). They were validated by referencing to regional, national or international competence qualification systems. This procedure guarantees the efficiency, quality and transparency of the final certification. The subjects that characterized the modules were:</p> <ul style="list-style-type: none"> • Maritime navigation • Occupational safety and health in the blue economy sectors • Understanding the blue economy • Go&Learn – the sea economy learnt in company <p>In addition, the modules supported the valorization of key EU competences such as foreign language skills and intercultural abilities, which are crucial factors in both broadening students' chances to access the labour market and enhancing companies' competitiveness.</p>
Type of KER:	Direct KER – (tool: 4 international modules)
Type of content to be exploited:	The material exploited was characterized by immaterial assets (knowledge, development of methodologies and thematic school programs)

Collateral\secondary ER	Connection with KER2 “ASSESSMENT AND RECOGNITION OF EDUCATIONAL AND PROFESSIONAL KNOWLEDGE”
Strategic area of application	<ul style="list-style-type: none"> • improved education related to blue economy • harmonisation of educational systems • strengthening of connections among educational sectors and productive systems
Acronym of the project that achieved the KER	BLUE KEP
Types of project partners that achieved the KER	<ul style="list-style-type: none"> • Project partners • Accredited secondary schools (nautical & technical)
KER availability	publicly accessible (free of charge)
Responsible partner to be contacted for exploitation	Informest Gorizia (IT)

Table 16 - Strengths, weaknesses and exploitation routes of KER

KER Strengths	<ul style="list-style-type: none"> • Enhance the conditions for innovation in nautical/maritime sector • strengthen the connections among different educational sectors and productive systems • develop new educational knowledge and professional skills in blue economy responding to SMEs demand • prerequisite for boosting “brain circulation” • reinforce CB clusters in the blue economy area • possibility to transfer the experience to other educational/working sectors
KER Weaknesses	<ul style="list-style-type: none"> • difficulty to transfer the acquired experience to be adopted at national level • difficulty to fully harmonize the contents of the international modules given present differences in national school programs
Areas into which the KER is expected to make an impact	<ul style="list-style-type: none"> • management and use of methods/tools/assessments of school curricula • harmonization of educational systems • School cooperation • Connection among schools and companies of the blue economy
Needs that might be solved/met by the results	<ul style="list-style-type: none"> • Enhanced cooperation among schools • Improved school programs’ harmonization • Implemented national educational administration involvement
Commercialization potential	No
Intellectual Property Rights owner:	No

Potential users of the results	<ul style="list-style-type: none"> • Schools • Students • National/regional educational administrations • Blue economy companies
Methods to contact them	Project website, leadpartner mail, organization of a workshop/conference, one-to-one meeting, etc ..
Passive exploitation channels and mechanisms	Social media, newspapers, presentations at conferences and workshops
Active exploitation channels and mechanisms	webinars, public events, training course, company visits, joint implementation of models



Assessment and recognition of educational and professional knowledge

Table 17 – Identifying and describing a Key Exploitable Result (KER)

<p>Description\value proposition of the KER2</p>	<p>The BLUE KEP Exchange Programme created cross-border tools and procedures for the standardisation of curricula with Cooperation Agreements signed by 12 accredited schools, a Mobility Plan including 38 Mobility Training Programmes and 38 Learning Agreements and 65 Mobility Certificates.</p> <p>As for the evaluating mobility and assessing competences phase, were established common assessment criteria in order to approach the process of mutual recognition of students’ credits, qualifications and non-formal competences acquired during mobility.</p> <p>By using Professional Qualification Descriptors (PQD) compliant with EU EQF standards, the assessment of students’ mobility outcomes by teachers of hosting schools was standardized. Common criteria of evaluation are accepted by both hosting and sending schools alike, thus enabling the CB recognition of credits and qualifications.</p> <p>The assessment procedure foresaw an evaluation of the marks obtained during the mobility as well as of the outcomes of the training at local companies. Educational and professional skills were identified in a final certificate, confirming the participation in the mobility as well as the recognition of credits and professional qualifications.</p>
<p>Type of KER:</p>	<p>Direct KER (tools: Cooperation Agreement, Mobility Plan, Mobility Training Programme, Learning Agreement, Mobility Certificate templates)</p>

Type of content to be exploited:	The material exploited was characterized by immaterial assets (knowledge, development of methodologies and templates)
Collateral\secondary ER	Connection with KER1 “STANDARDISATION OF SCHOOL CURRICULA”
Strategic area of application	<ul style="list-style-type: none"> • improved education related to blue economy • harmonisation of educational systems • implementation of professional and educational skills for students • strengthening of connections among educational sectors and productive systems
Acronym of the project that achieved the KER	BLUE KEP
Types of project partners that achieved the KER	<p>Project partners</p> <ul style="list-style-type: none"> • Accredited secondary schools (nautical & technical) • Local blue economy companies (terminal operators, shipbuilding, mechanics, navigation, navigation technical services, maritime domain protection) • Port authorities
KER availability	publicly accessible (free of charge)

Responsible partner to be contacted for exploitation	Informest Gorizia (IT)
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Table 18 - Strengths, weaknesses and exploitation routes of KER

KER Strengths	<ul style="list-style-type: none"> • enhance the conditions for innovation in nautical/maritime sector • strengthen the connections among different educational sectors and productive systems • develop new educational knowledge and professional skills in blue economy responding to SMEs demand • prerequisite for boosting “brain circulation” • reinforce CB clusters in the blue economy area • possibility to transfer the experience to other educational/working sectors
KER Weaknesses	<ul style="list-style-type: none"> • difficulty to transfer the acquired experience to be adopted at national level • difficulty to fully harmonize the contents of the international modules given present differences in national school programs
Areas into which the KER is expected to make an impact	<ul style="list-style-type: none"> • management and use of methods/tools/assessments of school curricula • School cooperation • Acquired educational and professional skill evaluation • Connection among schools and companies of the blue economy
Needs that might be solved/met by the results	<ul style="list-style-type: none"> • Enhanced cooperation among schools • Improved school programs’ harmonization • Implemented national educational administration involvement
Commercialization potential	No
Intellectual Property Rights owner:	No

Potential users of the results	<ul style="list-style-type: none"> • Schools • Students • National/regional educational administrations • Blue economy companies
Methods to contact them	Project website, lead partner mail, organization of a workshop/conference, one-to-one meeting, etc ..
Passive exploitation channels and mechanisms	Social media, newspapers, presentations at conferences and workshops
Active exploitation channels and mechanisms	webinars, public events, training course, company visits, joint implementation of models



2.3.3 Target groups

General public 200

The project involved teachers and young people attending nautical or technical institutes. Young people were the target of the mobility programme, while teachers were involved to standardize the school curricula, to outline international module and to carry out the pilot activities.

Local, regional and national public authorities 4

Projects' results were transferred to the education departments of competent policy levels in order to make them aware of the project's achievements, to transfer, and further implement good practices at large scale at regional or national level by competent authorities.

SMEs 20

The project aimed at creating more efficient synergies between blue economy SMEs and nautical and technical institutes in order to ensure that SMEs fully exploit the potential offered by the transfer of technology. SMEs were involved in the project in the pilot activities (apprenticeships) and in the communication action.

2.3.4 Synergies with networks to take advantage of exploitation

Network 1: Schools

Synergic effect: a common educational course is needed to identify specific education/technical objectives education/technical objectives for each professional profile and a set of competences (skills) to implement knowledge, aptitudes and practical/applicative skills (know-how), including cross-sectoral soft (key) competences.

Network 2: Teachers

Synergic effect: a constant implementation of school human resources through the cooperation among schools and teachers will compare their respective systems and identify similarities and differences in didactic tools and methods, ways of working and organizing classes, while creating the conditions for a truly inclusive education (through cooperative learning, problem-solving, peer tutoring, technological education) in the whole cross-border area.

Network 3: Blue economy clusters

Synergic effect: to support the implementation of professional skills, and in perspective the “brain circulation”, to promote a joint development of synergies and knowledge transfer between the business and the education sector between the business and the education sector, is suitable to encourage, since the early school years, the spreading of extra-curricular activities aimed at putting students in contact with economic realities (companies) of the territory from both the business and production sectors, in order to better prepare them for experiencing internship in companies and to ease their future employment choices, then offering a mobile and better trained workforce.

Network 4: Policy makers

Synergic effect: In line with the European Qualifications Framework (EQF) and by referring to the European Credit System for Vocational Education and Training (ECVET), BLUE KEP project defined and tested specific international education modules that were recognised and adopted by the involved schools. As proven by the results of this activity, there is ample room for continuing along this path and for widening the range of competences and curricula that can be recognised transnationally, thus strengthening the harmonisation of education systems in the cross-border area while enhancing student’s employability. The establishment of a dialogue with the competent Italian and Croatian policy-makers in charge of education and training at both national and regional (in Italy) levels is warmly envisaged to stimulate a change in the regulatory framework for the

recognition of credits and courses developed transnationally and to allow the acquired awareness to lead to expected objectives.

2.4 Strengths, weaknesses and exploitation routes of all projects to better exploit and the target message to be conveyed (including links to data availability)

The main point of attention consisted of identifying KER strengths, KER weaknesses and the areas into which a KER is expected to make an impact. These involve the many areas monitored, managed or forecasted. It was crucial to examine all existing possibilities, allowing also for the fact that new or unexpected exploitation areas might emerge as the innovation is introduced in real-world applications.

At the same time, it was important to identify which needs might be solved/met by the KER. In this case, it was possible to be specific and/or to identify needs in general terms.

A KER might have a commercialization potential which can be translated into revenue from the sale of the patent, fees paid to utilize it or, on the contrary, might be distributed free of charge. Some KERs might even be protected by intellectual property rights.

As a result of the previous features, the potential users were identified based on previous experience, similar products/processes or market analysis.

The communication methods were analysed distinguishing between passive and active exploitation mechanisms. The former relates to forms of communication characterized by the fact the KER owner/developer publishes the results via, e.g., website, guidelines, social media, journal & conference papers, presentations at scientific, technical & policy conferences and participation at workshops. The latter requires a greater effort by the KER owner/developer in actively engaging to promote the results via webinars, demonstration events, training courses, living labs, company visits, or elaboration of business models in collaboration with invited stakeholders and partners.

3 Infographic

