ACTIVITY 4.1 - COMMON MODULES AND MUTUAL RECOGNITION OF CREDITS  
  
  
INTERNATIONAL TRANING MODULE n. 3

**Title: UNDERSTANDING THE BLUE ECONOMY**

**ORGANISATIONS INVOLVED IN THE DEVELOPMENT OF THE MODULE**

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| **ORGANISATION 1** |
| TYPE OF ORGANISATION[[1]](#footnote-1)  VET AGENCY |
| COUNTRY  ITALY |
| NAME OF THE ORGANISATION  IRES ISTITUTO DI RICERCHE ECONOMICHE E SOCIALI DEL FRIULI VENEZIA GIULIA IMPRESA SOCIALE |
| ADDRESS  Via Manzini 41-45 I-33100 UDINE |
| EMAIL  info@iresfvg.org |
| WEBSITE  www.iresfvg.org |

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| **ORGANISATION 2** |
| TYPE OF ORGANISATION[[2]](#footnote-2)  FIRM |
| COUNTRY  ITALY |
| NAME OF THE ORGANISATION |
| ADDRESS |
| EMAIL |
| WEBSITE |

**GENERAL DESCRIPTION OF THE MODULE**

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| **Title** | **UNDERSTANDING THE BLUE ECONOMY** |
| **Reference Qualification** | The module aims to introduce students to an understanding of the characteristics and importance of the sea economy, the so called "Blue Economy" in the European context, particularly with regard to Italy and Croatia.  For this reason, the module is aimed at all secondary schools, of any course of study, where it can take on a role of introduction and orientation to the different sectors and professions related to the Blue Economy. |
| **EQF level** | EQF Level: 3 |
| **Prerequisites** | * English proficiency: CEFR level A2-B1 * Office automation basic skills |
| **Learning outcomes: KNOWLEDGE** | At the end of the module the learner will have been exposed to the following:  I. Attain a sound knowledge of issues related to concept of the Blue/Sea economy in the Country and in EU;  II. Acquire a quantitative knowledge on the main indicators of the Blue economy;  III. Understand the main trends of innovation and transformation within the Blue Economy. |
| **Learning outcomes: KEY COMPETENCIES**  **(according to the ECVET Manual principles and to EU Rec. 2018/C 189/01 -)** | * At the end of the module the learner will have mastered the following skills: * 2.1 Applying knowledge and understanding * The learner will be able to: * IV. Collect and process information from different sources; * V. Identify which are the main factors that act in the processes of economic transformation; * 2.2 Communication skills * The learner will be able to: * VI. Interact in a foreign language within the working group and with teachers /experts; * VII. Prepare a digital presentation and expose it to an audience; * 2.3 Judgmental and learn to learn skills * The learner will be able to: * VIII. Compare the differences between Italian and Croatian Blue Economies; * IX. Evaluate own learning; * 2.4 Mathematical competence and basic competences in science and technology * The learner will be able to: * X. Make simple data transformations and produce charts. * XI. assemble satellite electronic safety devices and perform the relevant quality tests (optional - see Learning Unit 3.b) |
| **Learning outcomes: TECHNICAL - PROFESSIONAL SKILLS** | Not relevant |
| **Educational outputs** | Students must prepare a digital presentation in English following a given track and using the available materials. |
| **Teaching methodology** | The module includes the use of the cooperative learning methodology:   * Step 1: division of students into transnational working groups (4-6 people); definition of the roles within each group (in rotation in the 3 different learning units - LU): coordinator - facilitator - researchers (looking for the necessary information) - processors (composition of the final presentation); assignment of the in-depth sub-themes; * Step 2: Exploration and deepening of assigned sub-themes within the expert groups (groups made up of one or more representatives of each working group that analyses the different sub-themes identified) * Step 3: Socialisation of the knowledge developed in Step 2 within the initial working groups * Step 4: Preparation of the digital summary presentation * Step 5: Each working group explains the presentation to the other working groups and/or other classes. |
| **Skills of teachers involved** | It is not necessary for the teacher to have specific skills related to the Blue Economy or statistics, although it is important that he has taken a general view of the contents of the attached work materials.  It is important that he/she is familiar with the methodology of group work - cooperative learning and is able to guide the search for information surfing on Internet, the development of a digital presentation and simple procedures of data processing ( index numbers, percentages) for the creation of graphs and tables. |
| **Suggested duration** | 36 hours |
| **Organisation**  **of the module** | The work takes place in a traditional classroom and in the computer lab.  Students will be divided into working groups. |
| **Laboratory/ equipment requirements** | The use of a computer lab with Internet connection and office automation software (e.g. Microsoft Office, Libre Office, etc.) is required. |
| **Transnational added value** | * Approach based on the Blue Economy concept developed and promoted by the European Union * The module develops the ability to compare the Blue Economy systems in Italy and Croatia * It has a vocational guidance value towards sectors and professions (e.g. maritime and land logistics) that are subject to negative stereotypes (e.g. fatigue, seasonality) that make them unattractive to young people. |

**DESCRIPTION OF LEARNING UNITS**

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| **Number and Title** | **1. WHAT IS THE BLUE ECONOMY** |
| **Suggested duration** | 10 hours |
| **Description of contents and activities** | **I - Plenary meeting (2 h)**: presentation of the teacher and the students - explanation of the contents and objectives of the Module - description of the programme and working methods - composition of the working groups and division of the roles within them - presentation of the expected final educational output (digital presentation) and recall of the main rules for the development of digital presentations (synthetic texts - enhancement of the audio-visual aspects) - presentation of the sub-themes that will be analysed in the second meeting (experts groups) and training materials to be used (see following point):   * the concept of the Blue Economy; * the situation of the Adriatic Sea; * the strategy for the development of the Blue Economy in the European Union and in the Adriatic Sea.   **II - Meeting within experts groups (3 groups - 4 h):** reading and analysis of the attached materials, comparison and synthesis of what has been collected. Suggestions for the activity:   * the concept of the Blue Economy (see attachments: A1. chapters 1-2; A1.2 chapters 1-2-3-4): what is meant by Blue Economy or Blue Growth? Which are the consolidated and innovative economic sectors involved in the Blue Economy? Which sectors are growing, and which are in difficulty? * the situation of the Adriatic Sea (see attachments: A1.3 chapters 4-5-6): what are the natural characteristics of the Adriatic Sea? What are the main sources of pollution? What are the trends of the main sectors of the Blue Economy? What are the main conflicts of compatibility between the different sectors and in which areas? * the development strategy of the Blue Economy in the European Union and in the Adriatic Sea (see attachments: A1.4 - A1.5): Which are the Pillars of the Adriatic-Ionian Seas Strategy (A1.4)? Which are the most important sectors involved in the strategy (A1.4-A1.5)? What are the development strategies of the Action Plan described in A1.5?   **III - Meeting within working groups (4 h):** exposition and comparison of the results of the meeting for groups of experts - preparation of some digital slides summarizing the research activity |
| **Description of attached training materials** | ATTACHMENT 1.1 (A1.1): COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS - Blue Growth opportunities for marine and maritime sustainable growth, COM/2012/0494 final (available in EN, IT, SL), <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:52012DC0494>  ATTACHMENT 1.2 (A1.2): The EU Blue Economy Report 2019, EUROPEAN UNION, 2019 (available in EN), <https://publications.europa.eu/en/publication-detail/-/publication/676bbd4a-7dd9-11e9-9f05-01aa75ed71a1/language-en/format-PDF/source-98228766>  ATTACHMENT 1.3 (A1.2): Blue growth trends in the Adriatic Sea: the challenge of environmental protection, WWF, 2015 (available in EN), <http://www.medtrends.org/reports/MedTrends_AD-Report.pdf>  ATTACHMENT 1.4 (A1.4): COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS - A Maritime Strategy for the Adriatic and Ionian Seas - COM(2012) 713 final (available in EN, IT, SL), <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1559635179093&uri=CELEX:52012DC0713>  ATTACHMENT 1.5 (A1.5): COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS - European Union Strategy for the Adriatic and Ionian Region - 17.06.2014 - COM(2014) 357 final  (available in EN, IT, HR), <https://ec.europa.eu/regional_policy/en/policy/cooperation/macro-regional-strategies/adriatic-ionian/library/#1> |

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| **Number and Title** | **2. ANALYZING BLUE ECONOMY TROUGH DATA** |
| **Suggested duration (in hours)** | 16 hours |
| **Description of contents and activities** | 1. **Plenary meeting (2 h): explanation of the contents and objectives of the Module, illustration of the programme and working methods.** Composition of the working groups and division of the roles within them, presentation of the training materials to be used (see following point), the main statistical sources (especially Eurostat) and methods of analysis and processing the data using spreadsheets (eg: Microsoft Excel application or similar open source applications). 2. **Meeting within working groups (12h): Deepening of some issues related to the Blue Economy with the help of training materials.** Each group is assigned a topic to be explored among those proposed by the European Atlas of the Seas. Currently there are more than 20, among which 5 can be mentioned particularly suitable for the activities envisaged by this learning unit: maritime transport, trade, fisheries, tourism, employment in the sectors of the Blue Economy. The Atlas contains data and thematic maps that can be easily exported and used in the final presentation.   The information in the Atlas should be compared and integrated with the information available on the Eurostat website, the Blue Indicators Online Dashboard and the most recent edition of the European Union's Blue Economy Report. Examples of maps of the Atlas that can be exported as a starting point for analysis for each topic:  • traffic of goods by port, traffic of passengers by port, main ports (goods traffic), main ports (passengers’ traffic) [TRANSPORT];  • trade of fisheries and aquaculture products (volume), trade of fisheries and aquaculture products (value), fisheries products processing sector [TRADE];  • fisheries and aquaculture product consumption, catches by country, fishing fleet-number of vessels by ports, fishing fleet-tonnage by ports [FISHERIES];  • state of bathing waters, number of beds per square kilometer [TOURISM];  • employment in the fisheries and aquaculture sectors by country, employment by coastal/non-coastal regions [EMPLOYMENT].  The Blue Indicators Online Dashboard also contains a series of exportable data and graphs that allow further study on the proposed topics. This tool allows for the exploration and customization of the economic indicators used for the six established sectors in the EU Blue Economy report. For example: persons employed by country, persons employed by sector, GVA per employee FTA, average personnel costs, etc.. The six sectors include: Coastal Tourism, Marine living resources, Marine non-living resources, Port activities, Shipbuilding and repair and Maritime transport. Finally, on the Eurostat website there are several databases concerning the Blue Economy sectors (partly used also in the European Atlas of the Seas and in the Blue Indicators Online Dashboard): fisheries, tourism, transport, international trade, etc. It is important to clearly indicate which data sources are used and their meaning (metadata) in order to obtain a correct reading of the phenomena. From this point of view, each database on the Eurostat website is accompanied by an information section (called "Explanatory texts - metadata"). It is also possible to explore the databases through a search by topic.  The aim of the group work is to provide an exhaustive description of the subject dealt with, making comparisons at the geographical level (for example among Croatia, Italy and the context of the European Union and also to a greater level of territorial detail if the data are available) and by elaborating historical series to highlight the dynamics over time of the observed phenomena (in this regard it is appropriate to use index numbers to compare values ​​of different order of magnitude). What are the dimensions of the phenomenon analyzed in Croatia and Italy? What is the contribution of Croatia and Italy at European level in the sectors under consideration (eg: number of employed people on the EU total)? What is the sector's contribution to the economy as a whole? What has been the evolution in the last few years in the countries of reference? What are the main areas of the two countries in terms of Blue Economy? (e.g.: main ports for freight traffic, main ports for passenger traffic, provinces with the highest number of beds, etc.). After collecting, processing and analyzing the data, some slides are prepared for the digital presentation.   1. **Plenary meeting (2h):** Presentation of the final results in English. Each work group explains the presentation to other groups and/or other classes. The final report must be prepared in Power Point format and may use graphs, tables and thematic maps. |
| **Description of attached training materials** | ATTACHMENT 2.1 (A2.1): **European Atlas of the Seas (**[**https://ec.europa.eu/maritimeaffairs/atlas**](https://ec.europa.eu/maritimeaffairs/atlas)). The [European Atlas of the Seas](https://ec.europa.eu/maritimeaffairs/atlas/maritime_atlas/) provides information about Europe’s marine environment and it is available in the 24 official EU languages. Users can view predefined and ready to use maps, covering topics such as [nature](https://ec.europa.eu/maritimeaffairs/atlas/maritime_atlas/#lang=EN;p=w;bkgd=5;theme=10:0.75,13:0.75,11:0.75,75:0.75,19:0.75;c=1224514.3987259902,6446275.8410170125;z=4;e=t), [tourism](https://ec.europa.eu/maritimeaffairs/atlas/maritime_atlas/#lang=EN;p=w;bkgd=5;theme=25:0.75,24:0.75,76:0.75,26:0.75,17:0.75;c=1224514.3987259902,6446275.841017013;z=4;e=t), [security](https://ec.europa.eu/maritimeaffairs/atlas/maritime_atlas/#lang=EN;p=w;bkgd=5;theme=27:0.52,28:1,50:1;c=1224514.3987259902,6446275.841017013;z=4;e=t), [energy](https://ec.europa.eu/maritimeaffairs/atlas/maritime_atlas/#lang=EN;p=w;bkgd=5;theme=12:0.75,89:0.75,4:0.75,3:0.75,88:0.75;c=1224514.3987259902,6446275.841017013;z=4;e=t), [passenger transport](https://ec.europa.eu/maritimeaffairs/atlas/maritime_atlas/#lang=EN;p=w;bkgd=5;theme=85:0.75,5007:0.75,86:0.75,78:0.75;c=1224514.3987259902,6446275.841017013;z=4;e=t), [sea bottom](https://ec.europa.eu/maritimeaffairs/atlas/maritime_atlas/#lang=EN;p=w;bkgd=5;theme=7:0.75,9:0.75,18:0.75,106:0.75,107:0.75;c=1224514.3987259902,6446275.841017013;z=4;e=t), [fishing stocks and quotas](https://ec.europa.eu/maritimeaffairs/atlas/maritime_atlas/#lang=EN;p=w;bkgd=5;theme=67:0.75,54:0.75,52:0.75;c=1244082.2779669901,6456059.780637514;z=4;e=t), [aquaculture](https://ec.europa.eu/maritimeaffairs/atlas/maritime_atlas/#lang=EN;p=w;bkgd=5;theme=208:0.75,242:0.75,717:0.75,60:0.75;c=1244082.277966991,6456059.780637515;z=4;e=t), and much more. Users can also benefit from an enriched catalogue with more than 200 map layers, covering a wide range of topics, to explore, collate and create their own maps. These maps can be printed, shared and embedded in articles or presentations. The Atlas is the ideal tool for schools, researchers and professionals, or anyone wishing to know more about the European seas and its coastal areas.  ATTACHMENT 2.2 (A2.2): **Eurostat** **website** (<https://ec.europa.eu/eurostat>). Eurostat is the statistical office of the European Union. Eurostat provides the European Union with high quality statistics at European level that enable comparisons between countries and regions.  ATTACHMENT 2.3 (A2.3): **European Commission, Blue Indicators Online Dashboard** (<https://blueindicators.ec.europa.eu/public/access-online-dashboard_en>). The Blue Indicators Online Dashboard is an Information Technology tool which allows for the exploration and customisation of the economic indicators for the established sectors in the EU Blue Economy Report. The data and charts show economic indicators used for the established sectors in the EU Blue Economy report. The six sectors include: Coastal Tourism, Marine living resources, Marine non-living resources, Port activities, Shipbuilding and repair and Maritime transport. Various filters allow for the customisation of data can in terms of sub-sector, activity, Member State, indicator and time period. It is possible to export data and charts as an image, to Pdf or in a file format that can be read by Excel.  ATTACHMENT 2.4 (A2.4): European Union, **The EU Blue Economy Report. 2019** (second edition - Annex 1 in particular). The EU Blue Economy Report analyses the scope and size of the Blue Economy in the European Union, solidifying a baseline to support policymakers and stakeholders in the quest for a sustainable development of oceans, sea and coastal resources. The EU Blue Economy Report is available here: <https://blueindicators.ec.europa.eu/public/sites/default/files/2019_blue_economy_report_5.pdf> |

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| **Number and Title** | **3. FUTURE CHANGES IN THE BLUE ECONOMY** |
| **Suggested duration (in hours)** | 10 hours |
| **Description of contents and activities** | **I - Plenary meeting (1 h):** explanation of the contents and objectives of the Module - illustration of the programme and working methods - composition of the working groups and division of roles within them - presentation of the sub-themes to be analysed at the second meeting (within working groups) and the materials to be used (see following point):   * Future changes in logistics * Future changes in maritime technology sector * Future changes in seaports * Future changes in shipping   **II - Meetings in working groups (7 h)**: reading and analysis of the attached materials, comparison and synthesis of what has been collected. Suggestions for the activity:   * Future changes in logistics (see attachments: A3.1): which are the most important innovation sources in logistics (pp. 5-12)? How has been built Trend Radar (pp. 13-15)? Consider the following specific trends: Digital Work, Green energy logistics, Logistics Marketplaces, Supergrid Logistics, 3D printing, Big data analytics: which new skills and professional profiles will be needed? Select and analyze some other high impact trends (pp. 20-49); * Future changes in maritime technology sector (see attachment: A3.2): which subsectors are implied in the maritime technology sector (chapter 2)? Which is the employment situation, forecasts and trends (chapter 3)? Which are the drivers and trends influencing future skills needs (chapter 4)? Which are the medium-term recruitment needs (chapter 5)? * Future changes in seaports (see attachment 3.3): Which are trends and technological innovations that are changing the concept on seaport (chapter 1)? What does it mean 3E-class port? which are the related strategic themes (chapter 3)? How these changes will affect skills and careers of seaports workforce? * Future changes in shipping (see attachment 3.4): what does it mean shipping 4.0? which are its distinguishing features (chapter 1)? Which are the innovation trends (chapter 2)? Which will be the consequences on skills and careers of seafarers?   **III - Plenary meeting (2 h)**: exhibition and comparison of digital presentations. Final discussion: which common, transversal innovation processes and sources can be found in the transformation of the different considered sectors? Which skills are related to these innovation processes?  - Final evaluation of the module |
| **Description of attached training materials** | ATTACHMENT 3.1 (A3.1): DHL Trend Research, LOGISTICS TREND RADAR 2018/19, <https://www.logistics.dhl/content/dam/dhl/global/core/documents/pdf/glo-core-trend-radar-widescreen.pdf>  ATTACHMENT 3.2 (A3.2): Sea Europe, Industriall, EVOLUTION OF SUPPLY, EMPLOYMENT AND SKILLS IN THE EUROPEAN MARITIME TECHNOLOGY SECTOR, 2016 https://ec.europa.eu/social/BlobServlet?docId=18793&langId=en  ATTACHMENT 3.3 (A3.3): Accenture, SIPG, CONNECTED PORTS DRIVING FUTURE TRADE, 2016 <https://www.accenture.com/t20161012T003018Z__w__/us-en/_acnmedia/PDF-29/accenture-connected-ports-driving-future-trade.pdf>  ATTACHMENT 3.4 (A3.4): Lambrou M. A., Masarahu O., SHIPPING 4.0: TECHNOLOGY STACK AND DIGITAL INNOVATION CHALLENGES, IAME 2017 Conference, Tokyo <https://www.researchgate.net/publication/320102036_Shipping_40_Technology_Stack_and_Digital_Innovation_Challenges> |

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| **Number and Title** | **3.b (optional) SAFETY AND SATELLITE CONTROL SYSTEMS FOR FISHING BOATS LOCALIZATION** |
| **Suggested duration (in hours)** | 8 hours |
| **Description of contents and activities** | The Learning Unit has been suggested by CRM SRL , an italian firm official supplier of satellite services and assistance for VMS (Vessel Monitoring Systems) on Italian fishing boats. VMS - Vessel Monitoring System - is a satellite monitoring system, which provides data to fishing authorities on the position, course and speed of vessels.  CRM holds an Authorisation of the MIPAAF (Italian Fisheries Ministry) of 17/12/2016 for the marketing of the IBOX-1510 and IBOX-1520 Satellite Control System - BlueFisher - a complete monitoring system for all fishing vessels in accordance with the Ministerial Decree of 13 April 2015 issued by the Ministry of Agriculture, Food and Forestry Policies, in collaboration with the General Command of the Coast Guard Corps of Harbour Offices.  The LU can be considered a thematic deepening of the role and application of European Regulations in the Blue Economy sectors for the protection of the marine environment and the fishery resources.  Contents of the LU are:   * European safety regulations on navigation and fishing with specific reference to mandatory European requirements (Shore Based Maintenance Beacon - IMO MSC 1039 / 1040 Certification) * VMS on fishing boats, Satellite control systems for fishing boats localization (VSM - Vessel Monitoring System – and Blue Box) * New technologies for VMS - operationla and assembly of BlueFisher |
| **Description of attached training materials** | -- |

**VALIDATION AND RECOGNITION OF THE MODULE**

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| **Reference to regional, national or international competence frameworks** | Key competencies have been defined by European Commission (ref. Council Recommendation of 22 May 2018 on key competences for lifelong learning, ST/9009/2018/INIT).  Skills have been identified referring to the "Manual for the Conversion of qualifications into the ECVET System" |
| **Evaluation procedure** | Evaluation of the digital presentations prepared by each work group.  Indicators to be considered:   * correctness and appropriateness in the use of the English language (25%) * deepening and correctness of the contents (25%) * correct use of office automation suite (digital presentation editor and spreadsheet) (20%) * personal interpretations and considerations of collected data (30%) |
| **Recognition of credits** | According to actual rules, 1 ECVET credit can be recognised.  Other educational or training credits can be recognised according to national rules (e.g., in Italy the module can be recognised within the "school-work alternation" (work-related learning) system and within the educational credits for high school diploma examinations |

1. School, VET agency. ecc. [↑](#footnote-ref-1)
2. School, VET agency. ecc. [↑](#footnote-ref-2)