



Blue and Circular Economy: profiles of experts DRAFT

ARCES Association
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DRAFT

Blue and Circular Economy: profiles of experts

Guidelines to ensure standardization and exchange of knowledge aimed at the selection of project experts.

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- The first section of the document is dedicated to the “**Blue Economy profiles**” required and the description of the **sector and subsectors**.
- The second part of the documents is dedicated to the “**Circular economy profiles**” required and the description of the sector and subsectors.

1. Profile of the experts in the field of **Blue Economy**

Education (Degrees, Certification and Training) and Professional experience

The expert in the **Blue Economy** should have the following:

- a degree in a relevant scientific discipline (biology/marine sciences, environmental sciences, environmental engineering etc)
- good knowledge of the Blue Economy as a teaching subject
- a minimum of 2 years proven work experience either in teaching or in a blue economy sector enterprise
- experience in teaching all levels of students (school leaving level and university level)
- a good knowledge of the local, general Blue Economy context, including examples from local industry (case studies)
- An adequate level of English to enable them to lead/participate in curricula development webinars and meetings with the other experts in the CET group (curricular experts’ team) and produce a document in English containing the 3 levels of curricula. Advised minimum of B2/C1
- Adequate IT skills to permit the expert to conduct activities via digital conferencing platforms and to communicate via email etc.

Desirable qualities

- good team skills and ability to lead (actively participate) in a team of international experts
- good cultural awareness of Mediterranean countries
- good awareness of the **Blue Economy** in the other Helios partner countries

Tasks and responsibilities:

- Lead (or assist for other partners) the development of Blue Economy curricula* for 3 levels of teaching (basic, intermediate and advanced level) in collaboration with the other nominated experts of the Helios consortium. We expect the collaborative curricula development to require 15-20 hrs of webinars and exchanges.
- assist with the development of Blue Economy reference materials for the teaching (a 'library' of documents in English needs to be created for the teaching staff from the partner organizations to use and for the Helios e-learning platform)
- teach the curricula developed on 6 courses (25 hours each course) over the lifetime of the project to various levels of participants. This includes site visits to Blue Economy enterprises collaborating with the project (this activity may need to be organized digitally for the first courses implemented)

*By 'curricula' we intend the structure and minimum descriptors of the course contents.

The course content tailored to the local level includes a study of local case studies to bring to the classroom.

We are looking for a person who has a solid background in the theoretical side of the Blue Economy and the various areas connected to the Blue Economy in a context of sustainability.

This person needs to have good experience in teaching all levels of students, not necessarily in teaching Blue Economy subjects only. The candidate needs work as a team to develop the curricula together with the 6 colleagues from other Mediterranean partner countries.

The curricula and descriptors will be developed in English but the reference materials and teaching will be done in the language of the course participants.

How many hours shall the person dedicate to the activity?

According to the road map developed by UCAS¹ project team, 3 curricula will be developed for the **2 courses given each year**. The courses will be 80-hr face-to-face teaching courses (8hr/day for 10 days) and will be replicated in the 6 partner countries. Each course will contain an average of 20 trainees.

- We expect the collaborative curricula development to **require 15-20 hrs of webinars and exchanges**.
- We expect to teach the curricula developed on 6 courses (**25 hours each course**) over the lifetime of the project to various levels of participants. This includes **site visits** to Circular Economy SMEs collaborating with the project (this activity may need to be organized digitally for the first courses implemented).

1.2 Blue Economy sectors

This section introduces the **sectors and subsectors** into which the **Blue economy** is grouped for training purposes.

Here below are mentioned the most relevant sectors and subsectors. Most of the definitions for each sector and subsector come from the European Union sources (i.e., EU portals, Publications², Studies³, EC Communications⁴, etc.).

Fisheries, aquaculture and processing

- **Aquaculture:** It refers to the farming of fish, shellfish, algae and other aquatic organisms and takes place both in inland and marine waters.
- **Processing:** processing sector are enterprises whose main activities are the 'processing and preservation of fish and fish products'. This includes the preparation and preservation (freezing, drying, cooking, smoking, salting, canning, etc.) and the production (fish fillets, caviar, etc.) of fish, crustacean and mollusc products.

¹ Mr. Hatem Sultan and Ms. Samah Hammouda, UCAS WP5 Leaders.

² The blue economy Overview and EU policy framework, IN-DEPTH ANALYSIS, EPRS | European Parliamentary Research Service, January 2020.

³ The EU Blue Economy Report. 2019, European Commission.

⁴ COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS Blue Energy Action needed to deliver on the potential of ocean energy in European seas and oceans by 2020 and beyond, Brussels, 20.1.2014.

Coastal and maritime tourism:

- **Maritime tourism:** It covers tourism that is largely water-based rather than land-based (e.g., boating, yachting, cruising, nautical sports), but includes the operation of landside facilities, manufacturing of equipment, and services necessary for this segment of tourism.
- **Coastal tourism:** It covers beach-based recreation and tourism (e.g., swimming, surfing, sun bathing), and non-beach related land-based tourism in the coastal area (all other tourism and recreational activities that take place in the coastal area for which the proximity of the sea is a condition), as well as the supplies and manufacturing industries associated to these activities.

Coastal protection and maritime defence

As mentioned in a recent report of the European Commission, coastal zones contain large human populations and significant socio-economic activities. They also support diverse ecosystems that provide important habitats and sources of food. Climate change could have profound impacts on coastal zones due to sea level rise and changes in frequency and/or intensity of storms.

- **Coastal Flooding and Erosion Management:** This sector requires coastal protection managers to perform coastal protection work and conduct visits and works to ensure coastal flooding and erosion management.

Maritime transport, ports and shipbuilding:

- **Shipbuilding:** The sector has specialised in building high-value market vessels (mostly cruise ships) and technologically sophisticated ships. Smaller shipyards tend to specialise, for instance in fishing vessels or mega-yachts. The sector also produces marine equipment, such as cordage, nets and specific textiles, as well as marine machinery and navigation instruments, and provides products and services for ship maintenance, repair and conversion.
- **Maritime transport:** it includes coastal and short sea shipping of both passengers and freight, inland water transport and the rental and lease of water transport equipment.
- **Ports:** It includes cargo handling, warehousing and storage, construction of water projects and services relating to water transportation.

Marine extraction of oil, gas and minerals

Important reserves of oil and gas are located under the sea floor in many parts of the Mediterranean Sea. However, prospecting, drilling, and transport can seriously damage sensitive marine areas and disturb marine species.

This sector includes marine pilotage services, offshore material controller, decommissioning of offshore oil and gas platforms.

Marine renewable energy

According to the EC, marine renewable energy includes both **offshore wind** and **ocean energy** and it is recognised as a new driving force of EU economy that generates economic growth and jobs, secure the energy supply and enhance competitiveness through technological innovation.

Offshore wind and ocean energy

- **Offshore wind:** It is the most advanced of the emerging and innovative sectors of the blue economy. Electricity produced from offshore wind serves more than 10 million households in the EU
- **Ocean energy:** Tidal and wave power have the greatest potential capacity of all renewable energy sources, but they also tend to have the highest production costs.

Marine biotechnology

Efforts that involve marine bio-resources, as either the source or the target of biotechnology applications.

- **Blue biotechnology:** It refers to the use of aquatic biological resources for the purpose of biotechnological applications such as pharmaceuticals, cosmetics, food additives, animal feeds, biofuels and enzymes for detergents, papers and textiles. Blue biotechnology (or biotechnological applications) requiring bio-resources collected from the marine environment. The main applications of biotechnology in the EU economy fall into four broad groups:
 1. Healthcare and pharmaceutical
 2. Agriculture, livestock, veterinary products, and aquaculture
 3. Industrial processes and manufacturing
 4. Energy production

Other sectors

- **Seabed mining:** It refers to the extraction and processing of non-living resources in the ocean, in particular minerals and metals (e.g. cobalt, copper and zinc). NO commercial EU exploitation exists, and only a limited number of jobs in research and development.
- **Desalination:** refers to the process of removing salts and minerals from marine or brackish water in order to produce water suitable for human consumption or irrigation.

2. Profile of the experts in the field of Circular Economy

Education (Degrees, Certification and Training) and Professional experience

The expert in the **Circular Economy** should have the following:

- A chemical background and/or engineering background
- A working knowledge and experience in a variety of waste conversion techniques and technologies as the expert should provide expert advice in things like waste reduction, sustainable product regeneration, climate change mitigation. The preferred sectors can be agriculture, fertilisers and forestry, bioeconomy, buildings and infrastructure, furniture, mobility and transport.
- good knowledge of the Circular Economy as a teaching subject
- a minimum of 2 years proven work experience either in teaching or in a Circular economy sector enterprise
- experience in teaching all levels of students (school leaving level and university level)
- a good knowledge of the local, general Circular Economy context, including examples from local industry (case studies) to advise and serve as expert witnesses in circular economy matters
- An adequate level of English to enable them to lead/participate in curricula development webinars and meetings with the other experts in the CET group (curricular experts' team) and produce a document in English containing the 3 levels of curricula. Advised minimum of B2/C1
- Adequate IT skills to permit the expert to conduct activities via digital conferencing platforms and to communicate via email etc.

Desirable qualities

- good team skills and ability to lead (actively participate) in a team of international experts
- good cultural awareness of Mediterranean countries
- good awareness of the **Circular Economy** in the other Helios partner countries

Tasks and responsibilities:

- Lead (or assist for other partners) the development of Circular Economy curricula* for 3 levels of teaching (basic, intermediate and advanced level) in collaboration with the other nominated experts of the Helios consortium. We expect the collaborative curricula development to require 15-20 hrs of webinars and exchanges.
- assist with the development of Circular Economy reference materials for the teaching (a 'library' of documents in English needs to be created for the teaching staff from the partner organizations to use and for the Helios e-learning platform)
- teach the curricula developed on 6 courses (25 hours each course) over the lifetime of the project to various levels of participants. This includes site visits to Circular Economy SMEs collaborating with the project (this activity may need to be organized digitally for the first courses implemented)

*By 'curricula' we intend the structure and minimum descriptors of the course contents. The course content tailored to the local level includes a study of local case studies to bring to the classroom.

We are looking for a person who has a solid background in the theoretical side of the Circular Economy and the various areas connected to the Circular Economy in a context of sustainability.

This person needs to have good experience in teaching all levels of students, not necessarily in teaching Circular Economy subjects only. The candidate needs work as a team to develop the curricula together with the 6 colleagues from other Mediterranean partner countries. The curricula and descriptors will be developed in English but the reference materials and teaching will be done in the language of the course participants.

How many hours shall the person dedicate to the activity?

According to the road map developed by UCAS⁵ project team, 3 curricula will be developed for the **2 courses given each year**. The courses will be 80-hr face-to-face teaching courses (8hr/day for 10 days) and will be replicated in the 6 partner countries. Each course will contain an average of 20 trainees.

- We expect the collaborative curricula development to **require 15-20 hrs of webinars and exchanges**.
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2.1 Circular Economy sectors

As mentioned by the report of Ellen-MacArthur-Foundation, **Circular economy** is “an industrial system that is restorative or regenerative by intention and design. It replaces the end-of-life concept with restoration, shifts towards the use of renewable energy, eliminates the use of toxic chemicals, which impair reuse, and aims for the elimination of waste through the superior design of materials, products, systems, and, within this, business models”⁶.

The transition towards a circular development model can generate several environmental benefits, associated with the use of secondary materials instead of primary materials and the reduction of GHG emissions mainly connected to the reduction of use of virgin raw material and to use of renewable energy.

This section introduces the **sectors and subsectors** into which the **Circular economy** is grouped for training purposes. Here below are mentioned the most relevant **sectors and subsectors**. Most of the definitions for each sector and subsector come from the European Union sources (i.e., EU portals⁷, Publications⁸, Studies, etc.).

⁵ Mr. Hatem Sultan and Ms. Samah Hammouda, UCAS WP5 Leaders.

⁶ TOWARDS THE CIRCULAR ECONOMY, Economic and business rationale for an accelerated transition, Ellen-MacArthur-Foundation, 2013, p.8.

⁷ <https://ec.europa.eu/environment/waste/index.htm>
https://ec.europa.eu/environment/water/index_en.htm
<https://ec.europa.eu/environment/water/reuse.htm>

⁸ Action Plan. For a cleaner and more competitive Europe, European Commission 2020. Source: https://ec.europa.eu/environment/circular-economy/pdf/new_circular_economy_action_plan.pdf

Renewable energy:

Wind power, solar power, hydroelectric power, ocean energy, geothermal energy, biomass and biofuels are alternatives to fossil fuels that contribute to reducing greenhouse gas emissions, diversifying energy supply and reducing dependence on unreliable and volatile fossil fuel markets, in particular oil and gas

Waste management:

The European Union's approach to waste management is based on the "waste hierarchy" which sets the following priority order when shaping waste policy and managing waste at the operational level: prevention, (preparing for) reuse, recycling, recovery and, as the least preferred option, disposal (which includes landfilling and incineration without energy recovery).

Re-use, recycling and remanufacturing:

- **Re-use:** operation by which products or components that are not waste are used again for the same purpose they were originally designed
- **Recycling:** refers to any operation by which waste materials are reprocessed into products or materials
- **Remanufacturing:** manufacturing activity applied to an end-of-life product or component in order to return it to like-new or better performance with a warranty to match.

Repair and maintenance:

Activities taking place during the use phase of product that aim at prolonging its life span.

- **Repair:** defined as a correction of a specified fault in a product or component and returning it to satisfactory working condition⁹
- **Maintenance:** activities carried out in the use phase of the product 'to prolong system availability'. Includes installation, repairs and servicing, cleaning, diagnostics (on-site and remote), technical support (documentation and personal) as well as courtesy replacement of product whilst product is being repaired as well as cleaning

Water reuse:

Reclaims water from a variety of sources then treats and reuses it for beneficial purposes such as agriculture and irrigation, potable water supplies, groundwater replenishment, industrial processes, and environmental restoration.

Electric mobility:

Electric mobility is an essential step towards low-carbon and fossil-fuel-free transportation. At the same time, by applying the principles of circular economy at all stages of the vehicle's life cycle we can achieve a more efficient and sustainable use of raw materials. Electric mobility and circular economy are also absolutely complimentary given the need for strategic

⁹ In line with the new sustainable products policy framework set up the EU, the 'Circular Electronics Initiative' initiative will promote longer product lifetimes and include, among others, the following actions: focus on electronics and ICT as a priority sector for implementing the 'right to repair', including a right to update obsolete software.

materials-such as cobalt for EV batteries-in the transition to electric mobility and the importance of not losing these precious and limited resources at the end of a vehicle's life.

Transport:

Optimising the use of different modes of transport is of outmost importance in the transport industries. Current modes of transport (automobile, truck, plane, etc.) have changed our lifestyle (long trips from home to work, holidays in distant places, etc.) by encouraging urban spread and a global organisation of logistics which draws on ever increasing externalities: decreasing reserves of fossil fuels, local pollution, sound pollution, etc.

Several solutions have been proposed solutions for resolving the problems associated with transport, as mentioned shortly below:

- Reducing travelled distances: - reverse logistics, - optimisation of logistical places, etc.
- Preferring clean transport (river, rail, etc.) and clean fuels (NGV, BioNGV, etc.
- Mutualising transport (people/ goods): - shared fleets, - Inter-company Travel Scheme Mutualisation of logistical functions.

Companies are currently working to reduce their environmental impact, by adopting these solutions¹⁰.

¹⁰ Circular economy for the preservation of resources and the climate, A flows and channels approach towards a territorial ecosystem, ORÉE's Working Group, 2015.