



Project acronym: ArtReefs

Project title: Innovative, competitive and integrated tools for sustainable coastal tourism and inclusive Blue Growth in the Mediterranean and Black seas

Grant agreement no. EASME/EMFF/2015/1.2.1.7/03/SI2.735917

D1.1
Joint Vision

Due delivery date: M6

Actual delivery date: M8

Organization name of lead participant for this deliverable: CNR-ISMAR

Dissemination level	
PU	Public



ArtReefs project has received funding from the European Union under grant agreement No. EASME/EMFF/2015/1.2.1.7/03/SI2.735917

CO	Confidential, only for members of consortium	X
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Deliverable number:	D1.1
Deliverable responsible:	CNR - ISMAR
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Workpackage:	Joint Vision

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Abstract
<p>The present document <i>D1.1</i> is part of Work Package 1 <i>Joint vision</i>.</p> <p>It is prepared at Month 8 and intends to provide common transnational strategic objectives for the development and promotion of Artificial Reefs as a tool for sustainable tourism development and Inclusive Blue Growth in the Mediterranean and Black seas.</p>

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1 Introduction

The Europe 2020 strategy launched in 2010 states that “we want the EU to become a smart, sustainable and inclusive economy”. This means making the most of our available resources to create jobs and deliver durable growth integrating the assets and needs of our economy, society and environment.

Among the key strategic fields that can feed such growth is the Blue Growth: the combined but as yet most often untapped potential of seas and oceans to provide with integrated services, resources and opportunities across all marine and maritime activities. This is deeply rooted in the EU, where the maritime economy already provides with around €500bn/y and 5.4M jobs. Furthermore, the EU counts with the largest combined Exclusive Economic Zone in the world and an unique projection of maritime assets spanning across the global maritime domain, meaning that the EU’s efforts to unleash Blue Growth can provide competitive and scalable impact worldwide.

Blue Growth is forward looking. Building on top of traditional sectors like shipping and energy, it focuses on the potential of new sectors to seize the new opportunities that are already available today, and pave the way for those to come. Under such light, it currently highlights five strategic areas: **renewable energies, seabed mining, biotechnology, aquaculture and maritime and coastal tourism.**

For Blue Growth to happen, the EU relies on an Integrated Maritime Policy (IMP), which is an overarching tool to make sure that all activities are aligned and compatible with each other, as well as economically, socially and environmentally sustainable. Some of the pillars for IMP directly tackle particular marine challenges in order to improve governance, coordination and access. Among these are some urgent issues: to improve knowledge and its accessibility; to foster Maritime Spatial Planning (MSP) and to adopt regional and strategies for each of the EU sea basins, including necessary cooperation with neighbour countries.

Indeed, each of Europe's sea-basins has its own economic, social, environmental, geographic, climatic and institutional characteristics, and each contributes in its own way to a differentiated Blue Growth path.

Following the Blue Growth study, the European Commission has commissioned different studies to better understand the **potential development of maritime cluster and elaborate the Blue Growth findings at the level of sea basins.**

The studies focused on the **Mediterranean and Black sea basins** found that an estimated 600-700 thousand people are employed in maritime clusters, which is equivalent to at least 1 out of 3 jobs in the Blue Economy and **that coastal tourism is by far the most important maritime job creator, approaching 50% in the various parts of the Mediterranean and even exceeding this in the Black Sea and remains one of the most promising activities in all countries surveyed.**

Mediterranean and Black Sea coastal areas are very mature tourist destinations accounting for one third of total arrivals worldwide. However, despite its socio-economic potential, the coastal and maritime tourism industry is faced with huge socio-economic and environmental challenges that threaten the important contribution of this strategic sector to the economic recovery and growth of the Mediterranean and Black Sea regions and of their coastal communities.

Furthermore, both basins also face common challenges since both area are characterized by entrenched unemployment (particularly severe for women and youth), low rates of innovation, accumulated and intense environmental impact, scarce entrepreneurship, a lack of collaboration

between stakeholders and structural obstacles for the up-take of technological and social advance, and climate change.

2 The ArtReefs Initiative

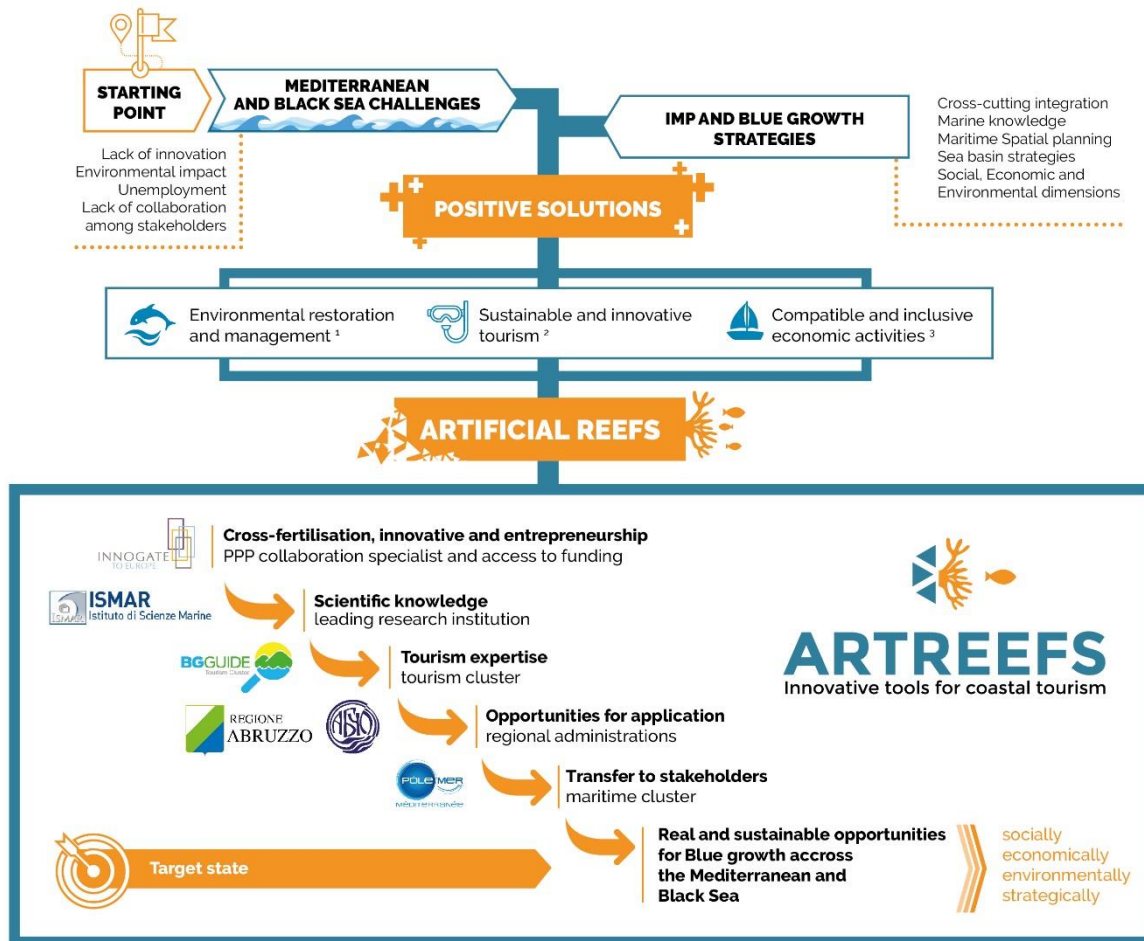
In order to meet the above mentioned challenges, foster the Blue Growth development and taking into account the **potential of coastal tourism** as the most important maritime job creator in the Mediterranean and Black Sea basins, **the ArtReefs network has been set up to promote the use of custom-designed artificial reefs (ARs) as versatile infrastructures to generate innovative tourism packages, complementary economic activities and beneficial services for nature, leading to the creation of jobs and greater cooperation between IMP related stakeholders.**

Artificial Reefs are natural or man-made structures deployed on the seabed randomly or geometrically assembled to mimic some characteristics of the natural rocky habitats and having several functions such as:

- protection, restoration, enhancement of aquatic resources.
- enhancing biodiversity, providing new substrates for benthic organisms and mollusc culture;
- enhancing professional and recreational fisheries;
- creating suitable areas for diving;
- providing a mean to manage coastal activities and reduce conflicts;
- research and educational activities;
- creating potential networks of marine protected areas (MPAs) to manage the life cycles of fish and connectivity.

Furthermore, different international experiences have explored the **usefulness of ARs for other purpose and maritime tourism is one field that has proven particularly successful**, where custom-built reefs have allowed the development of innovative tourism package linked to diving, surfing, more attractive beaches and improved biodiversity, marine life abundancy and overall environmental health.

ArtReefs will set-up public-private-partnerships in the Mediterranean and Black Sea Countries involved for the creation of comprehensive tourism packages **around ARs facilitating the use of artificial reefs as successful and affordable tool to boost innovative and sustainable coastal and maritime tourism, while offering inclusive opportunities for transversal Blue Growth across a wide range of compatible activities that combine economic, social and environmental benefits.**



¹ E.g. to enhance environmental quality, biodiversity and biomass, spatial diversity, sediment stability and water transparency
² E.g. better beaches, diving and snorkelling, recreational angling, yachting and moorings, heritage and art and gastronomy
³ E.g. fisheries and aquaculture, monitoring and surveillance, research and education, maritime spatial planning and coastal management

To this aim a transnational joint vision is needed to allow Mediterranean and Black Sea countries to maximize and exploit at their best the potential of custom-designed Artificial Reefs as a tool for an integrated approach fostering coastal sustainable tourism development and environmental management and increasing IMP stakeholders’ participation in the setting up of participative governance models.

3 The main policy drivers

The ArtReefs transnational vision will contribute to promote the potential of Mediterranean and Black Sea economy, having a positive impact on the value of the Mediterranean and Black Sea maritime economy while contributing to maintain and secure the good environment status, responding to the to key policy drivers at regional, macro regional and European scale.

Following is a list of the framework policies and strategic documents, further to the conventions and other tools (e.g. guidelines) already developed at international, European and at sea basins level for the deployment of artificial reefs embedded in the ArtReefs vision and the strategic objectives definition.

The Integrated Maritime Policy (IMP)¹	<p>The IMP has been launched by the EU Commission in 2007 to ensure that sea-related policies are developed in a joined-up way in order to allow the extraction of value from the sea and at the same time addressing the accumulated effect of conflicts of use and the deterioration of the marine environment.</p>
The European Union’s Marine Strategy Framework Directive² (MSFD)	<p>The MSFD has been adopted in June 2008 to protect more effectively the marine environment across Europe. It aims to achieve good environmental status (GES) of the EU’s marine waters by 2020 and to protect the resource base upon which marine-related economic and social activities depend. The MSFD constitutes the vital environmental component of the Union’s maritime policy, designed to achieve the full economic potential of oceans and seas in harmony with the marine environment.</p>
The Blue Growth strategy³	<p>The Blue Growth strategy was adopted by the European Union in 2012 to support sustainable growth in the marine and maritime sectors as a whole, recognizing that seas and oceans are fundamental drivers for the European economy. It is the maritime contribution to achieving the goals of the Europe 2020 strategy for smart, sustainable and inclusive growth. The 'blue' economy represents roughly 5.4 million jobs in EU and generates a gross added value of almost €500 billion a year. However, further growth is possible in a number of areas which are highlighted within the strategy. The strategy consists of three components:</p> <p>1) Develop sectors that have a high potential for sustainable jobs and growth, such as: a. aquaculture; b. coastal tourism;</p>

¹ An Integrated Maritime Policy for the European Union, COM (2007) 575 final of 10.10.2007, and SEC (2007) 1278 of 10.10.2007. <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52007DC0575&from=EN>

² Directive 2008/56/EC of the European Parliament and of the Council of 17 June 2008 establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive) <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32008L0056&from=EN>

³ Communication on “Blue Growth opportunities for marine and maritime sustainable growth (COM(2012) 494 final, the European Commission set the way forward for unleashing the potential of coasts, seas and oceans to help put the EU economy back on track, while at the same time safeguarding biodiversity and protecting the marine environment. http://ec.europa.eu/maritimeaffairs/documentation/publications/documents/blue-growth_en.pdf

	<p>c. marine biotechnology; d. ocean energy; e. seabed mining</p> <p>2) Essential components to provide knowledge, legal certainty and security in the blue economy: a. marine knowledge to improve access to information about the sea; b. maritime spatial planning to ensure an efficient and sustainable management of activities at sea; c. integrated maritime surveillance to give authorities a better picture of what is happening at sea.</p> <p>3) Sea basin strategies to ensure tailor-made measures and to foster cooperation between countries: a. Adriatic and Ionian Seas; b. Arctic Ocean; c. Atlantic Ocean; d. Baltic Sea; e. Black Sea; f. Mediterranean Sea; g. North Sea</p>
<p>Communication on "A European Strategy for more Growth and Jobs in Coastal and Maritime Tourism" ⁴</p>	<p>The Communication has been adopted by the EU Commission on 20 February 2014, presents a new strategy to enhance coastal and maritime tourism in Europe in order to unlock the potential of this promising sector. The tourism sector is growing and the challenge is to exploit its potential in a way that sustainably produces economic benefits while protecting natural and cultural heritage. This Communication proposes joint responses to the multiple challenges, with a view to capitalize on Europe's strengths and enabling it to substantially contribute to the Europe 2020 objectives for smart, sustainable and inclusive growth.</p>
<p>Blue Growth ⁵country and sea-basin reports (Mediterranean, Adriatic & Ionian, and the Black Sea).</p>	<p>The study is part of the overall Study to support the development of sea-basin cooperation in the Mediterranean, Adriatic and Ionian, and Black Sea. It identifies the blue growth needs and potential in the Mediterranean and Black Sea countries by providing a breakdown of the marine and maritime activities that make up the blue economy of each country and elaborating policy recommendations for those activities identified as "most relevant and promising". In the framework of this study Coastal tourism turned out to be one of the most promising activities in all countries surveyed – one that would have even greater potential if it were given a wider perspective that includes other leisure activities such as cruise tourism, and yachting and marinas.</p>
<p>IMO (International Maritime Organization) London Convention and Protocol/UNEP (United Nations Environment Programme) Guidelines for the Placement of Artificial Reefs.</p>	<p>The guidelines have been developed within the context of the London Convention and Protocol. The purpose of the Guidelines is to:</p> <ul style="list-style-type: none"> - assist those countries that have recognized the need to assess proposals for the placement of artificial reefs on the basis of scientifically sound criteria, as well as to develop an appropriate

⁴ Communication on a European Strategy for more Growth and Jobs in Coastal and Maritime Tourism COM(2014) 86 final http://ec.europa.eu/maritimeaffairs/policy/coastal_tourism/documents/com_2014_86_en.pdf

⁵ Studies to support the development of sea basin cooperation in the Mediterranean, Adriatic and Ionian, and Black Sea CONTRACT NUMBER MARE/2012/07 - REF. NO 2 https://webgate.ec.europa.eu/maritimeforum/sites/maritimeforum/files/Report_1_full_final.pdf

<p>Regional Seas Report and Studies No 187, 2008⁶.</p>	<p>regulatory framework;</p> <ul style="list-style-type: none"> - assist with the implementation of regulations in those countries where such regulations are already in place, but where there is nevertheless a need for such guidance; - assist in updating existing guidelines or regulations.
<p>Practical Guidelines for the Use of Artificial Reefs in the Mediterranean and the Black Sea⁷. Studies and Reviews. General Fisheries Commission for the Mediterranean. No. 96. Rome, FAO 2015</p>	<p>The document provides for up-to-date information and guidance regarding specific management practices for the planning, siting, construction and anchoring of artificial reefs in the Mediterranean and the Black Sea and for monitoring their effectiveness from an ecological and socio-economic point of view. After providing an overview of existing definitions and legislations relating to the deployment of artificial reefs, this document illustrates the main aspects related to the different steps involved in the planning, siting and construction phases. A detailed presentation of the specific types and purposes of artificial reefs follows, with a description of their possible impacts and of existing methodologies to monitor and assess their effectiveness. Finally, these guidelines give insights about the socio-economic effects of artificial reefs and control, surveillance and maintenance issues.</p>

⁶ IMO (International Maritime Organization) London Convention and Protocol/UNEP (United Nations Environment Programme) Guidelines for the Placement of Artificial Reefs. Regional Seas Report and Studies No 187, 2008
http://www.unep.org/regionalseas/publications/reports/RSRS/pdfs/rsrs_187.pdf

⁷ Practical Guidelines for the Use of Artificial Reefs in the Mediterranean and the Black Sea. Studies and Reviews. General Fisheries Commission for the Mediterranean. No. 96. Rome, FAO 2015. <http://www.fao.org/3/a-i4879e.pdf>

4 Our Vision: Challenges and Opportunities of ARs as sustainable tool for tourism development

The Joint vision document is intended to guide the key actors in the Mediterranean and Black Sea regions with an interest in the potential use of **Artificial Reefs** as a preferred tool for competitive, innovative and sustainable tourism development, ensuring mutual understanding and identifying common challenges.

Vision Statement

Our vision is an increased and optimized use of artificial reefs in the Mediterranean and Black Sea regions - driven by the support of the communities and IMP-related stakeholders as well as by public authorities responsible for coastal planning, marine resource management and environmental protection - as a versatile tool for sustainable tourism development, providing for innovative entrepreneurship and job opportunities while ensuring that the marine environment is protected, restored, and enhanced.

Strategic objectives

The transnational joint vision provides for the foundation of the ArtReefs action plan that will detail operational actions for the development and promotion of artificial reefs as a tool for tourism and Inclusive Blue Growth in the Mediterranean and Black Seas. Further, it drives the development of Guidelines on artificial reef infrastructures for a tourism purpose, and a business model generator on how to design, deploy and maintain ARs, providing the most relevant information to developers of artificial reefs and to potential users as local authorities and actors of the tourism industry.

The transnational joint vision embodies the **following strategic objectives as guiding principles of the ArtReefs Initiative detected and shared by an interactive involvement of cross-sectoral stakeholders in the participating Mediterranean and Black Sea countries:**

To promote artificial reefs for environmental protection and coastal management	Raising awareness on innovative artificial reefs
	Ensuring communication and participation
	Preserving and valorising natural resources under sustainable criteria
	Protecting and restoring the marine environment
To showcase the potential of artificial reefs for sustainable tourism and complementary activities	Improving the Mediterranean and black sea regions image as regards maritime tourism
	Fostering sustainable development at local level
	Enhancing jobs opportunities in the field of sustainable maritime and coastal tourism
	Improving the access to funds
	Reducing seasonality, renovating and diversifying tourism model

	Favouring integration of fisheries and tourism sectors into strategic coastal policies
To promote cooperation between imp stakeholders around the issue of artificial reefs	Technical knowledge, available scientific information, management practices sharing and competences enhancement
	Fostering regional and transnational communication and information exchange
	Improving cross-sectoral and public-private cooperation, supporting the opportunities for public-private partnership in the field of maritime sector management
	Improving regulatory and policy framework
	Monitoring and promoting best practice
	Risk management
To ensure that new artificial reef developments are sustainable and properly managed	Improving joint management of coastal resources
	Reducing spatial conflicts
	Ensuring long-term management plans
	Sharing costs and benefits

5 Policy Recommendation

A series of policy recommendations are proposed that could help to fulfil the ArtReef strategic objectives and support policy-makers to address the planning and the use of artificial reefs in the best-way, as an excellent tool within an integrated approach which could support sustainable tourism and local development and contextually contribute to good environmental management, increasing IMP stakeholders' participation in the setting up of participative governance models.

- **“Know your policy”**, set out the complete policies framework through a detailed knowledge of legislation, regulations and already developed guidelines having impact on artificial reefs projects at European, state and local level (Policies on environmental impact, fisheries management, protected species, integrated spatial planning, monitoring, control and surveillances, tourism activities of the sea). This is particularly important for public officials at local and regional scale.
- **Involve all the authorities acting at different levels from the beginning of the planning phase** (appropriate state, regional and local authorities, bodies in charge of permits, ect.) ensuring that the provisions for siting, constructing, monitoring and managing artificial reefs for a touristic purpose are consistent with the actual regulations and standards and financial responsibilities are clearly established.
- **Take stock of the best scientific knowledge available** for the planning and implementation of artificial reef projects aimed to enhance sustainable tourism development, including the opinion of marine scientists, coastal engineers, environmental impact experts... as well as the expertise of outstanding professionals in the fields of tourism and stakeholder management.

- **Put the environment first:** environmental impact assessment (EIA), a precautionary approach, monitoring, knowledge transfer, materials and methods... all are important to promote an approach to artificial reef development, such that even where a reef is built primarily for commercial purposes (fisheries, tourism, etc.), it nevertheless has environmental benefits.
- **Keep a broad and forward-looking perspective and commitment:** knowledge and benefits will be better if specific ARs are understood, designed and managed within a larger framework and information is shared (look for synergies within MSP/ICZM, marine technology, research, tourism etc.)
- **Increase participation and build consensus** involving all IMP-related stakeholders through consultation since the planning phase of the AR project in order to avoid conflicts of use and to create a local community of interest.
- **Promote public-private initiatives** to maximize opportunities and benefits, support and mainstream AR management and governance processes.
- **Analyze the socioeconomic and environmental benefits** of the artificial reef project, including direct and indirect effects, and carry out technical and financial feasibility studies.
- **Identify possible target group/s and intended users** potentially involved (e.g. number of sports as diving, recreational fisheries, fishing tourism, educational activities, beach managers...) and make sure that they participate in design validation and management planning.
- **Establish a monitoring plan** supported by a scientifically-based approach. A multi-user approach could help to reduce costs.
- **Promote and integrate artificial reefs projects into tourism and sustainable development programmes and plans** at local, regional and national level.

Furthermore, the ArtReefs initiative will support developers of artificial reefs and potential users as local authorities and actors of the tourism industry with technical recommendations for the planning, deployment and management of artificial reefs for a tourism purposes, detailed in the documents “Guidelines on Artificial Reefs for Blue Growth” and “ArtReefs Business Model Generator”.