

H2020-ISSI-2015-1

Topic: ISSI-3-2015 Knowledge Sharing Platform

MARINA

**Marine Knowledge Sharing Platform for Federating
Responsible Research and Innovation Communities**

Grant Agreement No. 710566



MS2 Report on international MML workshops
R1

MML WORKSHOP	DETAILS
Date	04/04/2016
Duration	From 09.00 to 18.00
Location	Venice, Italy
Title	Sustainable maritime and coastal tourism, sea pressures and responsible research and innovation
The Marine Challenge that the MML workshop has tackled	Pollution caused by human land and sea pressures
Type of workshop	International
Round	First
Selected methodology	Structured Democratic Dialogue (SDD)
Language of the workshop	English
Name of the organizing institution	ISPRA
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1 Purpose of the report

The purpose of this document is to report the results of the Mobilisation and Mutual Learning (MML) workshop on “Sustainable maritime and coastal tourism, sea pressures and responsible research and innovation“ that took place in Venice (San Giorgio Maggiore Island), Italy, on 4th of April 2017. The workshop was organized by the Italian National Institute for Environmental Protection and Research (ISPRA) - one of the partners of the MARINA Project. It was conducted by professional facilitators from the Cyprus Neuroscience and Technology Institute (CNTI) as part of the MARINA Project 1st round of International MML workshops. The document reports, analyses and discusses the findings and the results of the MML workshop, illustrating the relationships between the actions specified by the participants and the principles of Responsible Research and Innovation.

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3 Executive Summary

A Mobilisation and Mutual Learning (MML) workshop took place in Venice (San Giorgio Maggiore Island), Italy, on 4th of April 2017. The workshop was organized by the Italian National Institute for Environmental Protection and Research (ISPRA) - one of the partners of the MARINA H2020 Project (Grant Agreement No. 710566) as part of a Mobilisation and Mutual Learning Process composed of two phases at local and international levels. The MARINA project deals with Responsible Research and Innovation (RRI), a recent approach aiming at ensuring that the processes and outcomes of Research and Innovation are aligned with the values, needs, and expectations of society. This goal is crucial for achieving a sustainable and inclusive growth and it will be reached only through the active implementation of certain principles (dimensions), defined by the European Commission¹: Public Engagement, Gender Equality, Science Education, Open Access and Open Science, Ethics, Governance, Sustainability, Social justice/inclusion.

The Workshop, lasting an entire day, aimed at evaluating how RRI can contribute towards making tourism a driver for sustainability in coastal and marine areas of the European Union. It was facilitated applying the Structured Democratic Dialogue (SDD) participatory method. Participants provided inputs in response to the following triggering question (TQ): **“What policy, social/cultural, economic, technological, legal and environmental actions are needed for the tourism sector to be environmentally sustainable?”**

Through this process, participants co-created and agreed on a roadmap of actions that should be implemented to make tourism sustainable while taking into account RRI principles. According to this roadmap, the first step identified by participants was the urgency of building a solid knowledge base: no solution or action could be undertaken if the problem is not well known. The process encompasses a very well structured information campaign to be undertaken by translating the scientific results into clear messages that can reach everyone, in particular young people. The plan foresees that future educated and sensitized citizens will be more luckily to become part of the policy process and participate in the creation and implementation of touristic strategies that will balance economic, environmental and social aspects. Four ideas could be considered “visions”, part of a big picture that we must tend to: in a long-term perspective we should move, among others, towards (i) a general change on individual values that leads to positive behaviour on tourism; (ii) empowering citizens in decision making and governance; (iii) considering climate resilience in planning touristic infrastructures, (iv) shifting from oil to cleaner fuels for boat, cruise ships etc.

When observing the results of the workshop through the lens of Responsible Research and Innovation, it comes up the importance for the UE Countries of engaging stakeholders and citizens in orienting Research and Innovation agenda to tackle the needs and inclusively embrace actors out from the research and innovation themes into its Governance. Research and Innovation into the tourist sector can be seen as a trigger to reach its sustainability, through the direct and indirect support to key actions. These should include, among others, promoting less known destination through investments and infrastructures, provide different touristic offers, implement monitoring programmes, introduce incentives and increase controls against illegal practices, all require an integrated approach and a tight cooperation between different Authorities and all the stakeholders, with a clear definition of duties and responsibilities.

¹ https://ec.europa.eu/research/swafs/pdf/pub_public_engagement/responsible-research-and-innovation-leaflet_en.pdf

Governance in research and innovation also means that governments (and their research institutions) must be able to get suggestions, requests and concerns from multiple societal actors to anticipate emerging problems such as those coming from climate change. Its impacts on coastal structures and populations living along the actual coastline must not be underestimated and should be addressed by ad hoc studies and actions. Another case is represented by new markets and globalization: Chinese tourism, for instance, is supposed to become an important source of income for Europe in the next years but also a severe cause of threats to the environment if governments do not promptly react and adapt their structures and policies.

It also emerged that European citizens need to boost their scientific knowledge and professions (Science Education), in order to be ready for the adoption of sustainable innovations and technologies and implement tourism strategies that integrate and balance economic, environmental and social aspects. Unfortunately, Italy in particular needs to overtake complex legislation and long administrative paths that slow down the research and innovation process, such as the construction of filling points for cleaner marine fuels.

Tourism sustainability builds on Public Engagement in research and innovation. Citizens of the coastal areas can be advantaged by tourism, of course, but mass tourism is proved not only damage marine and coastal habitats, but also has a negative impact on the social structure of local communities, turning all economic and societal activities in tourist-oriented tasks. All items whose magnitude (and reversibility) should be addresses.

A stronger inclusion of the stakeholders in educational Programmes and touristic planning, investments in different touristic offers in buffer-areas, a long-term strategy that takes into consideration both societal and environmental global changes, a strong support by the National and European institutions to science education, innovation and smart technologies, are considered to be crucial steps to ensure a sustainable development of tourism in marine areas and coastal regions.

4 How MARINA partnership engaged societal actors in Responsible Research and Innovation for sustainable coastal and maritime tourism in Europe.

4.1 International Mobilisation and Mutual Learning Workshops

The international Mobilisation and Mutual Learning (MML) workshops held in the framework of the MARINA project have been part of a Mobilisation and Mutual Learning Process composed of two phases at local and international levels. Each phase includes 17 local MML workshops and 4 international MML workshops and is connected to the international RRI practitioner and policy-maker event. The second phase of the MML workshops will end by the high-level policy conference.

The first round of the international MML workshops was carried out from April 2016 to October 2017 and resulted from the local MML workshops that addressed similar or related topics. The outcomes of the

international MML workshops will be related tightly to the international RRI practitioner and policy-maker events and the final high-level policy conference. The process can be illustrated as follows:



Figure 1 - MARINA Mobilisation and Mutual Learning process

The international MML workshops:

1. Engaged European citizens and stakeholders in highly participatory debate, consultation and co-creation activities with regards to marine societal challenges.
2. Integrated citizens' visions, needs and desires into research and innovation processes in joint RRI-driven roadmaps.
3. Started the process of federating the existing communities and networks of researchers, Civil Society Organisations (CSOs), citizens, industry, policy-makers, research funders and communicators.
4. Set in motion inclusive mechanisms for sharing knowledge and best practice, building common understanding and co-creating solutions to marine societal challenges and base them on the RRI principles and socio-technical approach.
5. Facilitated joint co-creation of the Web Knowledge Sharing Platform.
6. Suggested policy options for embedding the RRI in the marine sectors at EU, national and sub-national levels.
7. Initiated spill-over to other activity sectors.

4.2 How can Responsible Research and Innovation contribute towards making tourism in coastal and marine areas of the European Union a driver for sustainability?

A pan-European Mobilization and Mutual Learning process to involve stakeholders and citizens in drawing roadmaps towards sustainable coastal and maritime tourism in Europe.

From November 2016 to March 2017, MARINA partner organisations held 17 local MML workshops attended by over 400 European societal actors all over Europe. They discussed marine societal challenges such as fishing and aquaculture, pollution caused by human land and sea pressures, renewable energy, tourism and coastal cities, and marine changes caused by climate and suggested Responsible Research and Innovation-driven roadmaps to address these challenges. As a result, among several factors affecting coastal and marine ecosystems, tourism was identified both as a major source of pressures and as a driver of economic growth. Its correct management could encompass not only a need to reduce its impacts, but it can also be a driver of the sustainable development of economic activities and foster the protection of marine and coastal environments while maintaining economically and socially viable local communities.

In the Blue Growth strategy, the European Union has identified coastal and maritime tourism sector as an area with special potential to foster a smart, sustainable and inclusive Europe. Tourism is the biggest coastal maritime sector in terms of gross added value and employment and, according to the Blue Growth Study², it is expected to grow by 2-3% by 2020. It employs almost 3.2 million people, generating a total of

² https://ec.europa.eu/maritimeaffairs/sites/maritimeaffairs/files/docs/body/study-maritime-and-coastal-tourism_en.pdf

€ 183 billion in gross value added and represents over one-third of the maritime economy³. In 2012, there were 534 million tourist arrivals in Europe, which is 17 million more than in 2011 and 52 % of all international arrivals worldwide. Revenue generated by inbound tourism reached € 356 billion, i.e. 43% of the world total.

In 2015 members of the United Nations Organisation adopted the 2030 Agenda for Sustainable Development, along with 17 Sustainable Development Goals (SDGs). They aim to end poverty, protect the planet, and ensure prosperity for all. The tourism industry can contribute to achieving several of these goals. Moreover, tourism has been included as a target in Goal 14 on the sustainable use of oceans and marine resources, thus requiring a clear implementation framework, financing, and investment in technology, infrastructures and human resources.

Furthermore, the United Nations (UN) Organisation has declared 2017 as the International Year of Sustainable Tourism for Development. This represented a unique opportunity for the MARINA partnership to raise awareness among public and private sector, decision-makers and the general public about **tourism** as a catalyst for societal and environmental positive changes and to bring these stakeholders together to propose innovative and smart solutions to the multiple challenges facing the sector in the key areas identified by the UN:

- Inclusive and sustainable economic growth
- Social inclusiveness, employment and poverty reduction
- Resource efficiency, environmental protection and climate change
- Cultural values, diversity and heritage
- Mutual understanding, peace and security

Responsible Research and Innovation (RRI) can help to overcome the current marine and societal challenges and unlock the potential for Blue Growth. There is a strong need for redefining and refocusing the business model of tourism. Therefore, the future success of maritime and coastal tourism will depend on the ability of the European countries to develop sustainable and integrated value propositions that take into account the needs and ambitions of society and reflect its values. In this context, Responsible Research and Innovation (in processes, products, services and technologies) can provide valuable solutions. Its dimensions of public engagement, gender equality, science education, open access, ethics, governance and environment protection, can become a framework for allowing societal values and expectations as well as the environment to be taken into account in the process of reshaping coastal and maritime tourism business models.

Stemming from the results of the local MML workshops and from the international agendas, the MARINA partners (ISPRA, Nausicaa, University of Aalborg and SmartBay) organized four International MML workshops for citizens, scientists, business and industry representatives and policy makers in Italy, France, Denmark and Ireland. They discussed the question

“How can Responsible Research and Innovation contribute to implementing tourism as a driver for sustainability in marine and coastal areas of the European Union?”

by taking into account the Horizon 2020 societal challenges in the context of four marine issues:

A. Sea pressures and marine environmental status (*Sustainable Maritime and Coastal Tourism, Sea Pressures and Responsible Research and Innovation*, 4th April 2017, Venice, ITALY)

³ Communication From The Commission To The European Parliament, The Council, The European Economic And Social Committee And The Committee Of The Regions; A European Strategy for more Growth and Jobs in Coastal and Maritime Tourism, Brussels 2014, COM(2014) 86 final, https://ec.europa.eu/maritimeaffairs/sites/maritimeaffairs/files/docs/body/com_2014_86_en.pdf

- B. **Food security, management of marine living resources and sustainable seafood** (*Maritime Cuisine Meets Sustainable Tourism*, 11th May 2017, Boulogne sur Mer, FRANCE)
- C. **Planning the uses and urbanization of coastal areas** (*Sustainable Tourism in Coastal Areas: the Challenge of Urbanisation*, 30th May 2017, Copenhagen, DENMARK)
- D. **Marine Protected Areas** (*Explore the Development of Sustainable Tourism Opportunities within Marine Protected Areas through Responsible Research and Innovation*, 5th October 2017, Galway, IRELAND)

4.3 *Sustainable Maritime and Coastal Tourism, Sea Pressures and Responsible Research and Innovation*

Tourism development of the last decades appears to be increasingly problematic for the coastal and marine environment conservation: massive waste production, emissions in the water and air, water pollution and biodiversity degradation are only some of the emerging threats. Enhancing coastal and maritime tourism in Europe while assuring a sustainable use of natural capital and marine cultural heritage for achieving a marine good environmental status by 2020 is now one of the biggest challenges of the blue growth.

Hot Topic & Sustainable Development Goals

This specific MML hot topic is also related to the following Sustainable Development Goals (SDGs) of the 2030 Agenda for Sustainable Development, and can contribute to their achievement through the creation of a shared and integrated road-map of recommendations on the specific topic:

Goal 14 - Conserve and sustainably use the oceans, seas and marine resources for sustainable development

Coastal and maritime tourism, which are the biggest segments of tourism, particularly for Small Island Developing States' (SIDS), rely on healthy marine ecosystems. Tourism development must be a part of Integrated Coastal Zone Management in order to help conserve and preserve fragile marine ecosystems and serve as a vehicle to promote a blue economy

Goal 15 - Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and biodiversity loss

Majestic landscapes, pristine forests, rich biodiversity, and natural heritage sites are often main reasons why tourists visit a destination. Sustainable tourism can play a major role, not only in conserving and preserving biodiversity but also in respecting terrestrial ecosystems, owing to its efforts towards the reduction of waste and consumption, the conservation of native flora and fauna and its awareness-raising activities

Source: World Tourism Organization (UNWTO) – Tourism and the Sustainable Development Goals

4.4 *The MML workshop methodology: Structured Democratic Dialogue*

The international MML workshops were facilitated according to the Structured Democratic Dialogue (SDD) participatory method. A week before the workshop the participants provided their input in response to the triggering question by e-mail or published it on the MARINA Knowledge Sharing Platform. The face-to-face workshop lasted one day and was carried out by a professional facilitator from Cyprus Neuroscience and Technology Institute. The SDD method ensured that the participants developed a joint roadmap based on a common vision and focused on the RRI-driven solutions and actions addressing an aspect of the sustainable maritime and coastal tourism.

The Structured Democratic Dialogue (SDD) was developed by Aleco Christakis (Christakis, 1973), John Warfield (Warfield, 1982) and Hasan Özbekhan (Özbekhan, Jantsch & Christakis, 1970) in the Club of Rome in the 1970s. The method enables a *democratic* and *structured* dialogue among a heterogeneous group of stakeholders in a limited amount of time. It is effective in resolving multiple conflicts of purpose and values, in identifying obstacles as well as generating action plans to sufficiently respond to complex questions. The SDDSM allows for integrating contributions from individuals with diverse views, backgrounds and perspectives through a process that is structured, inclusive and collaborative.

Avoiding “Groupthink” and the “Erroneous Priorities Effect”

Whenever no measures are taken for the protection of the authenticity of all ideas, there is a risk that some participants might support ideas that represent the majority of the group simply because they would not want to “go against the flow”. Consequently, the participants end up with an apparent agreement that in reality represents the views only of the “dominant group”. This phenomenon, known as “Groupthink,” is eliminated in the SDDSM as it exploits a scientific methodology known as the Nominal Group Technique (NGT). The NGT is based on equal time and emphasis allocated to each idea ensuring thus, that the “Groupthink” phenomenon does not appear.

If several stakeholders discuss, propose and then choose ideas that are viewed as more important by the majority, it is very likely that they will decide to invest in solving sub-problems that at first seem to be important (as viewed by the majority). However, judging these ideas under the prism of how influential they are with other ideas that have been submitted, the likelihood is that those initially viewed as more important are not really the most important as they are less influential than others. This phenomenon, known as the Erroneous Priorities Effect (EPE), is eliminated in the SDDSM by exploiting the Interpretive Structural Modelling (which is embedded into the Cogniscope™ software), the designed algorithms of which prioritize ideas based on the influence they have over each other.

Structure and Process of an SDD workshop

The process of a typical SDDSM session, with its phases, can be viewed in the following figure and is explained in detail below:

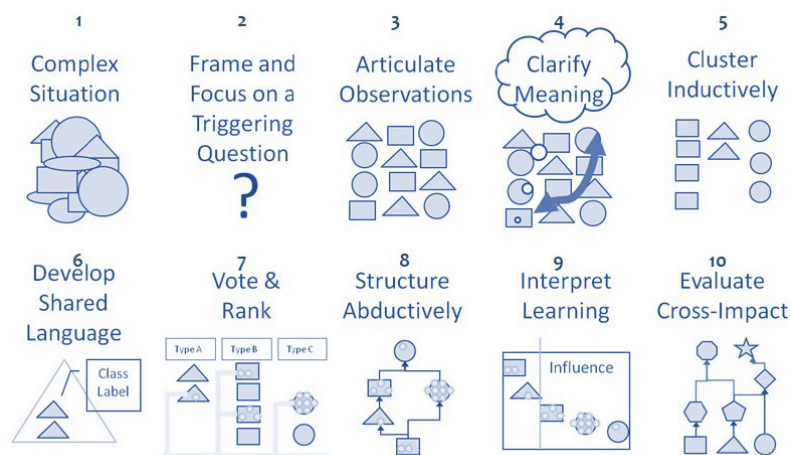


Figure 2 - Phases of the SDDSM session

The dialogue was constrained and sharpened with the help of a **Triggering Question** [Figure 2, Shapes 1&2]. It was formulated by the Knowledge Management Team composed of the owners of the complex

problem (i.e. the workshop organiser and the MARINA MML workshop coordination team) and the SDDSM expert. The triggering question was sent by email to all participants some week before the MML workshop, and they were requested to respond with at least two contributions on the MARINA Knowledge Sharing Platform before the meeting.

All contributions/responses to the triggering question were recorded on the Knowledge Sharing Platform or/and in the *Cogniscope III*TM software. They were submitted in two forms: a short and concise phrase (one idea in one sentence) and a paragraph where the authors clarified their ideas in a few additional sentences [Figure 2, Shapes 3&4].

The ideas were clustered into categories based on similarities and common attributes. If time was short, this process was carried out by small groups [Figure 2, Shapes 5&6].

All participants were given five votes and were asked to choose the ideas that were most important to them. Only ideas that received votes went to the next phase [Figure 2, Shape 7].

In this phase, the participants were asked to explore influences of one idea on another. They were to *decide whether solving one problem would significantly contribute to solving another problem*. An influence receiving a majority was established on the map of ideas. Thus, the items at the bottom of the map were the most influential factors and the priority actions to take [Figure 2, Shapes 8&9].

Using the root factors, stakeholders developed an efficient strategy by identifying actions that were Specific, Measurable, Achievable, Realistic and Time-specific, and came up with a road map [Figure 2, Shape 10]

5 Sustainable maritime and coastal tourism, sea pressures and responsible research and innovation

5.1 *The Hot Topic description*

The Workshop focused on how Responsible Research and Innovation can contribute to the Maritime and Coastal Tourism sustainability, in relation to the **reduction of the tourism-related sea pressures and the achievement of a good environmental status**

The extraordinary beauty and cultural wealth of EU's coastal areas have made them the preferred destination for many holidaymakers from Europe and abroad, making coastal and maritime tourism an important tourism sector. Employing over 3.2 million people, this sector generates a total of € 183 billion in gross value added and representing over one-third of the EU maritime economy. Coastal areas are important for growth and jobs, in particular for young people, since 45% of tourism workers are between 16 and 35 years old and the EU Commission (EC) is developing policy measures for maritime and coastal tourism at EU level.

Taking into consideration the two dimensions “Volume of tourists” and “Amount of economic value”, four types of possible maritime and coastal tourism “offers” can be identified:

- **Low-profile tourism**, also called eco-tourism, characterised by a relatively low volume of visits and a relatively low amount of average spending per visitor (the environmental impacts of this model tend to be only limited or even positive).

- Niche tourism focuses on high added-value services (adventure tourism, wildlife, eco-gastronomy and luxury) or locations attracting a lower volume of visitors (The economic value created by this model can be captured by local players, but also be monopolised by few larger players. In this case only limited economic and social gains may be transferred to local communities.)
- High-profile tourism refers to a business model which offers a high level of quality to a relatively large amount of people (This business model maximises profits whilst minimising negative externalities).
- Mass tourism refers to those locations or services offered which tend to target or attract high volumes of visitors with a relatively low average spending potential.

The current maritime and coastal tourism offer is not considered sufficiently 'future proof', also taking into consideration the goals of Good Environmental Status of the EU's marine waters that Europe must achieve by 2020 in the framework of the MSFD; consisting mainly of 'mass-tourism' business model, tourism appears to be increasingly problematic and less sustainable.

Tourism depends on a healthy environment and the sustainable use of natural capital, but the last few decades have demonstrated that tourism activities and in particular mass tourism can threaten local ecosystems, as well as the overall attractiveness of such areas. Vast increases in water demand, more waste and emissions from the air, road and sea transport at peak periods, more risks of soil sealing and biodiversity degradation (from infrastructure developments), eutrophication are only a few of the pressures created. Adding to this are the challenges due to climate change and coastal erosion that are expected to increase in the future.

Moreover, mass-tourism as a business model limits the potential for adding value, to capture this value at the level of coastal communities and pose increasingly unsustainable challenges in relation to social consequences for local communities, skills and qualifications of workers.

It appears very clear that there is a strong need to redefine and refocus the business model of 'mass tourism' and, possibly, increase the offer of the others. The future success of maritime and coastal tourism and the achievement of the goals of the MSFD depends also on the ability of the Countries and of Europe to develop sustainable and integrated value propositions that take account of the many issues arising from this sector.

Such approach could help in shaping tourism as a driver of sustainability, rather than a threat.

5.2 How is the workshop topic related to Responsible Research and Innovation?

In this context, research and innovation (both in processes and products, and technology) could provide valuable solutions. The Hot Topic chosen for the Workshop is strictly related to the 6 RRI dimensions.

Public Engagement. Coastal citizens and tourists should be involved to ensure their needs and concerns are heard and promoted at all levels in setting Research and Innovation priorities. Threats to the environment coming from tourists and from a non-sustainable use of resources can be reduced first of all through a massive change in the behavior of tourists themselves. Once assessed, impacts coming from high tourist pressure must be clearly explained and circulated, along with identified potential innovative solutions, in order for all citizens to participate to their adoption and to take responsible decisions when it comes to their holiday activities.

Governance. The Commission, Member States, regional and local authorities, industry and other stakeholders must take targeted action in coherence with EU policies that have an impact on this sector. Such process needs the definition of priorities, and the engagement of the public in decision-making. This process starts from engaging citizens in the governance of innovation and research. Coastal and maritime

tourism must face issues like IT connectivity, sustainable transport, safety issues, environmental protection, regional development, training, consumer protection and climate change mitigation and adaptation policies thus needing a comprehensive research and innovation policy framework.

Science Education. The innovative capacity of the coastal tourism sector is curbed by the shortage of marketing and other skills required for product diversification, as well as the relatively limited presence of clusters of enterprises, universities and institutions aimed at fostering such innovation.

Coastal regions and particularly those on the Mediterranean and the Black Sea shore tend to have low levels of education and low levels of productivity. This often leads to lower levels of professionalism – particularly so in the tourism sector. Lower levels of professionalism also limit access to finance, needed for investments in a future-oriented tourism offer.

Open Access. Promote skills, innovation and access to resources are important issues also related to the importance of maritime/marine data and knowledge. There is also need for a better collection, analysis and spread of existing good practices in more sustainable business models in maritime and coastal tourism. Open access to new technologies, and processes, should be granted to allow best technological solutions to be adopted.

Ethics. The sector is very well equipped to develop new products promoting attractiveness and accessibility of coastal and marine archaeology, maritime heritage, underwater tourism, eno-gastronomic activities etc.; raise sensitivity to host countries' political, environmental, and social climate; decrease economic inequality and social tensions between relatively poor locals and relatively rich tourists. Furthermore, sustainable tourism should aim to reduce the gap between low-paid tourism-related jobs being accessed by local inhabitants whilst highly-rewarding jobs being accessed by more skilled and qualified foreigners coming for temporary jobs in high-peak season

Gender equality. The tourism sector faces several challenges that can negatively affect women's presence in this sector. In particular, women are over-represented in lower-skilled and lower-paid areas of hotel, catering and tourism (HCT) work, particularly in areas such as housekeeping and some customer service areas. In addition, women's presence in decision-making positions is not particularly high: in a survey covering 78 tourism companies with information publicly available (including international tour operators, airlines and cruise ships, hotel groups and international professional associations and certification bodies) indicates that women make up 18.5% of all board members, i.e. 99 women out of a total of 526 positions. All this limits gender equality in promoting/identifying key Research and Innovation topics.

5.3 The triggering question (TQ):

The workshop stimulated the participants who were asked to answer a triggering question providing a short and clear action that should be undertaken to start solving the issue we proposed. The triggering question was:

“What policy, social/cultural, economic, technological, legal and environmental actions are needed for the tourism sector to be environmentally sustainable?”

In order to facilitate the formulation of actions from participants, the TQ was later on rephrased (see 5.4 for further details) as: **“For the tourism sector to be environmentally sustainable, we need to...”**

5.4 *Generating ideas*

The participants received the Hot Topic description and the Triggering Question 2 weeks before the workshop, and were asked to:

1. Read the Triggering Question carefully along with the relevant information provided on the Hot Topic;
2. Write one or two actions (one sentence each) that they believe are necessary to be designed and implemented for making the tourism sector environmentally sustainable;
3. Add one paragraph text explaining the actions.

All the ideas were uploaded by participants in the Knowledge Sharing Platform (<http://www.marinaproject.eu/>), in an event page dedicated to the workshop, visible to all.

This phase was a challenging task due to the active involvement asked to the participants. Moreover, most often participants provided as answers interesting but very general statements, rather than very short actions (as requested by the process).

In order to ensure coherence in the statements provided by participants, we rephrased the question, in order to obtain short and doable tasks easy to be discussed. Accordingly, we asked participants to complete the following sentence with a single and concise answer:

“For the tourism sector to be environmentally sustainable, we need to...”

In total 23 participants generated 47 different actions and related clarifications. One of participants could not attend the WS, so his statement was not considered during WS activities, as required by the methodology (Annex 2).

5.5 *Clarifying and merging ideas*

During the first phase of the workshop, one by one, the participants stated and explained to other participants the actions they proposed; their brief talks were video-recorded. All participants were invited to ask for explanation; however, in this phase, they were not allowed to argue about the content of the actions themselves, as the objective of this activity was only to understand each other's perspective.

Due to the high number of participants and submitted ideas, this phase almost doubled in time the duration foreseen in the agenda. One action was divided into two different actions during this phase, due to its complexity. At the end of the process the set was composed of 47 ideas.

5.6 *Clustering and prioritizing ideas*

The participants were divided into 3 groups and each group was provided with a sub-set of actions to process. Participants clustered ideas grouping actions that shared similar futures, or fields of application. 13 clusters were created in total (Figure 3).

In addition, participants were asked to vote the most important actions, in their opinion: every participant could assign only 5 votes in total (i.e. vote 5 action out of 47).

Moreover we highlight that, due to the lack of time, the clustering process was conducted with a different approach from that adopted by the SDD methodology that would have entailed the involvement of the whole group of participants in a common session.

Due to the atypical clustering process, some of the clusters identified by some groups of participants were very similar or strictly related to those created by others.

In order to fix this issue, that potentially results in less clear patterns, we grouped the 13 clusters into five “thematic” groups, i.e. groups of homogenous contents (Table 1):

Table 1 – Number of action that fit under the 5 thematic groups created by the authors.

Theme Group	N. of actions
1 - Raising awareness, education, stakeholder engagement	20
2- Knowledge, data management and data sharing	9
3 - Innovation and mitigation actions	9
4 - Incentives, reward and control	4
5 - Integrated approaches	5

The majority of the actions’ topics were related to raising awareness among stakeholders and their direct engagement in the policy process (touristic plans etc.): this aspect was perceived as the most urgent and important to implement. It is worth noting that technological and innovative groups (2 and 3) gathered together 19 actions: data management and innovation seems to be the other main topic stemmed from the discussion.

In Figure 3 the 5 Theme Groups, the Clusters and related Actions are graphically represented. Cluster names have been identified by participants groups.

GROUP 1 - RAISE AWARENESS, EDUCATION, STAKEHOLDER ENGAGEMENT

Cluster 1: Raise Awareness

ACTION 28

Promote diffuse tourism (0 votes)

ACTION 29

Promote programs of environmental education for students and specific categories of tourists and operators (2 votes)

ACTION 39

Generate a campaign where messages are developed and shared making the problem tangible for all concerned stakeholders by translating facts and figures into something simple and impactful (4 votes)

ACTION 47

Foresee the guidance of a 'super partes' actor, ethically exemplary (1 vote)

ACTION 48

Develop Tourism Business Ecosystems for a better understanding of stakeholders relations reaching sustainable solutions (3 votes)

Cluster 2: Awareness, knowledge, engagement capacity development

ACTION 1

Raise awareness on existing legislations (1 vote)

ACTION 2

Educate stakeholders (policy makers, researchers, entre/intrapreneurs, workers, citizens, tourists) on civic duty and sustainability (economic, social, environmental) rather than on own private benefits (1 vote)

ACTION 6

Stakeholder participation to touristic planning (4 votes)

ACTION 8

The establishment of a novel partnership between private sector, public bodies and volunteers so that, in real life, all voices are heard and citizens' requirements for the sustainable use of their environment can fit policy needs and vice versa (0 votes)

ACTION 10

Building capacity in those involved in developing and implementing tourism strategies and plans to make them able to integrate and balance economic, environment and social aspects (6 votes)

ACTION 11

Simplify and unify rules to ease the construction of LNG/LPG filling stations for marine use. Prepare a new generation of technicians to manage the more technological gaseous fuels used in the marine field (1 vote)

ACTION 13

Effective communication against greenwashing (0 votes)

Cluster 9: Education

ACTION 17

Enhance the capacity building of public-private tourism related stakeholders for a sustainable management of the coastal tourism maritime destination's cultural and environmental assets (1 vote)

ACTION 20

Educate people to understand the value of resources (5 votes)

ACTION 25

Develop a Europe-wide educational programme on main marine environmental issues (4 votes)

ACTION 27

Communication and education campaigns (0 votes)

Cluster 10: Decision Making with Stakeholder Engagement

ACTION 21

Implement the network of 'environment's angels'/ 'leaders to be' at the local level, starting from the youngest ages (4 votes)

ACTION 22

Develop a communication strategy aimed at raising public awareness on maritime biodiversity to promote change in awareness of the natural values (including ecosystem services for which Maritime Protected Areas have been set up) that leads to positive behavioral changes in tourism related social, administrative and economic sectors (6 votes)

ACTION 23

Enhance a multi-stakeholder dialogue (1 vote)

ACTION 24

Involve all possible stakeholders in innovative actions, take care of their expectations (1 vote)

GROUP 2 – KNOWLEDGE, DATA MANAGEMENT AND DATA SHARING

Cluster 5: Data Collection & Analysis

ACTION 5

Measuring and monitoring tourism impacts (7 votes)

Cluster 11: Data Sharing

ACTION 30

Specify conditions to engage citizens beyond the collection of observations on their environment and to empower them in decision-making and governance (5 votes)

ACTION 33

Better and shared data and information to inform decisions (0 votes)

ACTION 35

Encourage knowledge transfer (0 votes)

ACTION 44

Establish discussion platforms involving on a stable basis the different stakeholders of the tourism sector (1 votes)

ACTION 46

Agree on trade-offs and support them (0 votes)

Cluster 13: Indicators Parameters

ACTION 34

Clarify and establish baseline parameters and conditions for 'sustainable' tourism (3 votes)

ACTION 42

In order to be environmentally sustainable the tourism sector needs to be identified through clear parameters that can be easily understood by the general public (3 votes)

ACTION 45

Effective measurement of pedestrian tourist fluxes in high density destinations (2 votes)

GROUP 3 – INNOVATION AND MITIGATION ACTIONS

Cluster 4: Research & Innovation

ACTION 4

Promote RRI processes able to introduce innovation in the ship building industry, to reduce the impacts of sea transportation related to the tourism sector (3 votes)

ACTION 11

Simplify and unify rules to ease the construction of LNG/LPG filling stations for marine use. Prepare a new generation of technicians to manage the more technological gaseous fuels used in the marine field (1 vote)

Cluster 12: Mitigation Actions

ACTION 31

Start considering climate resilience when planning or re-organizing structures used for coastal tourism (buildings, harbours, etc.) (6 votes)

ACTION 32

Support the utilization of LPG as very clean fuel for boating tourism (4 votes)

ACTION 36

Upgrading sewage network and wastewater treatment plants in coastal areas, where the tourism flows generate significant impacts (3 votes)

ACTION 37

Road networks in a buffer region (0 votes)

ACTION 38

Foster to use very clean Natural Gas as fuel for cruising ships (0 votes)

ACTION 40

Recycling to other production of waste materials (carpet; 3-5% per annum of restyling investment (4 votes)

ACTION 41

Create a system similar to car-sharing platforms where a smart co-mapping program allows people to plan a sustainable mobile tourist trip by connecting coastal towns and islands through hop-on-hop-off practices. In addition, the smart web-based mapping system will host additional information: biodiversity records, cultural heritage, etc (4 votes)

ACTION 43

Assess impact of tourism on society and environment, with a specific focus the built environment and on land-use (1 vote)

GROUP 4 – INCENTIVES, REWARD AND CONTROL

Cluster 3: Incentives Rewards

ACTION 7

Introduce incentives and reward measures in the touristic areas that actively sustain marine and coastal environmental protection (2 votes)

ACTION 9

Enhance responsibility of tourism operators and tourists for future generation by economic incentives (pricing of natural resources, taxes etc.) (2 votes)

ACTION 18

Valorise the sustainability of tourist destinations (3 votes)

Cluster 6: Control

ACTION 3

Increase the controls to avoid illegal practices of tourist settings on the coast, e.g. discharge of wastewater into the sea (1 vote)

GROUP 5 – INTEGRATED APPROACHES

Cluster 7: Marketing

ACTION 16

Improve the European quality of the environment as value to capture the growing rich market of Chinese tourism (1 vote)

Cluster 8: Objectives

ACTION 14

Holistic, integrated, long-term wide scale approaches feeding sound and consistent local scale measures (1 vote)

ACTION 15

Limiting the impacts and challenges to the environment and social fabric of large cruiseships (0 votes)

ACTION 19

Optimization of dedicated labor market; optimize purchases (savings reinvested in environmental compatibility) (0 votes)

ACTION 26

Reduce impacts of the seasonal fluctuations in tourists and visitor numbers to marine destinations, spreading them out over the year, through the promotion of a wider range of resources and offerings (0 votes)

Figure 3 – Clusters assembled by the participants and related Actions. Clusters have been grouped under 5 themes, for reporting purposes, by the authors. Votes obtained by each action are in brackets.

5.7 Mapping influences and building a roadmap

The output of mapping ideas process is an ‘influence tree’ (Figure 4). This ‘tree’, or ‘roadmap’, reveals which are the root actions that must take place at first, in order to facilitate the achievement of the other actions. In the influence tree the actions at the top represent overarching, general visions that require big changes in behavior, societal priorities and policies. Action at the bottom, far from being the less important, are often more practical, local-scale actions that sustain the achievement of the big goals at the top. The structuring phase included only ideas that received at least 1 vote.

Participants agreed on the need of building actions on a solid knowledge base (Level 5), i.e. for tourism impacts (as well as for other threats) no effective action can be undertaken if the problem is not well known. Thus the first step is to have an objective measure of the relevance of the impact while identifying responsible actors and behaviours that contribute to it. This step will also help to identify the most sensitive targets in order not to waste energies and resources.

Once the seriousness of the problem and the local actors are clear, a very well structured information campaign can be undertaken by translating the scientific results into clear messages that can reach everyone, in particular young people (Level 4). This process will include all the groups that share interest in the marine and coastal environment (Level 3), ending with the establishment of a new generation of people that are aware of the problems afflicting their coastal area and that wants to be involved in the creation of touristic plans, for example, or take action in different ways to solve them.

In particular, new educated and sensitized citizens will be more luckily to become part of the policy process and participate in the creation and implementation of touristic strategies that will balance economic, environmental and social aspects (Level 2).

The application of local strategies will consequently facilitate the implementation of a Europe-wide education programme on marine issues that too often find an echo only in the scientific sector (Level 2).

Starting from the bottom, from educated and active citizens, is actually the necessary step to make big changes understood and accepted. From the workshop emerged, at the top of the road map, some actions that could be considered as “visions”, part of a big picture that we must tend to, by implementing the others (Level 1):

- A general change in individual values that leads to positive behavior on tourism
- Empower citizens beyond data collection, in decision making and governance
- Consider climate resilience when planning touristic structures
- Change in fuel usage, shifting from oil to cleaner fuels like LPG for boats, cruise ships etc.

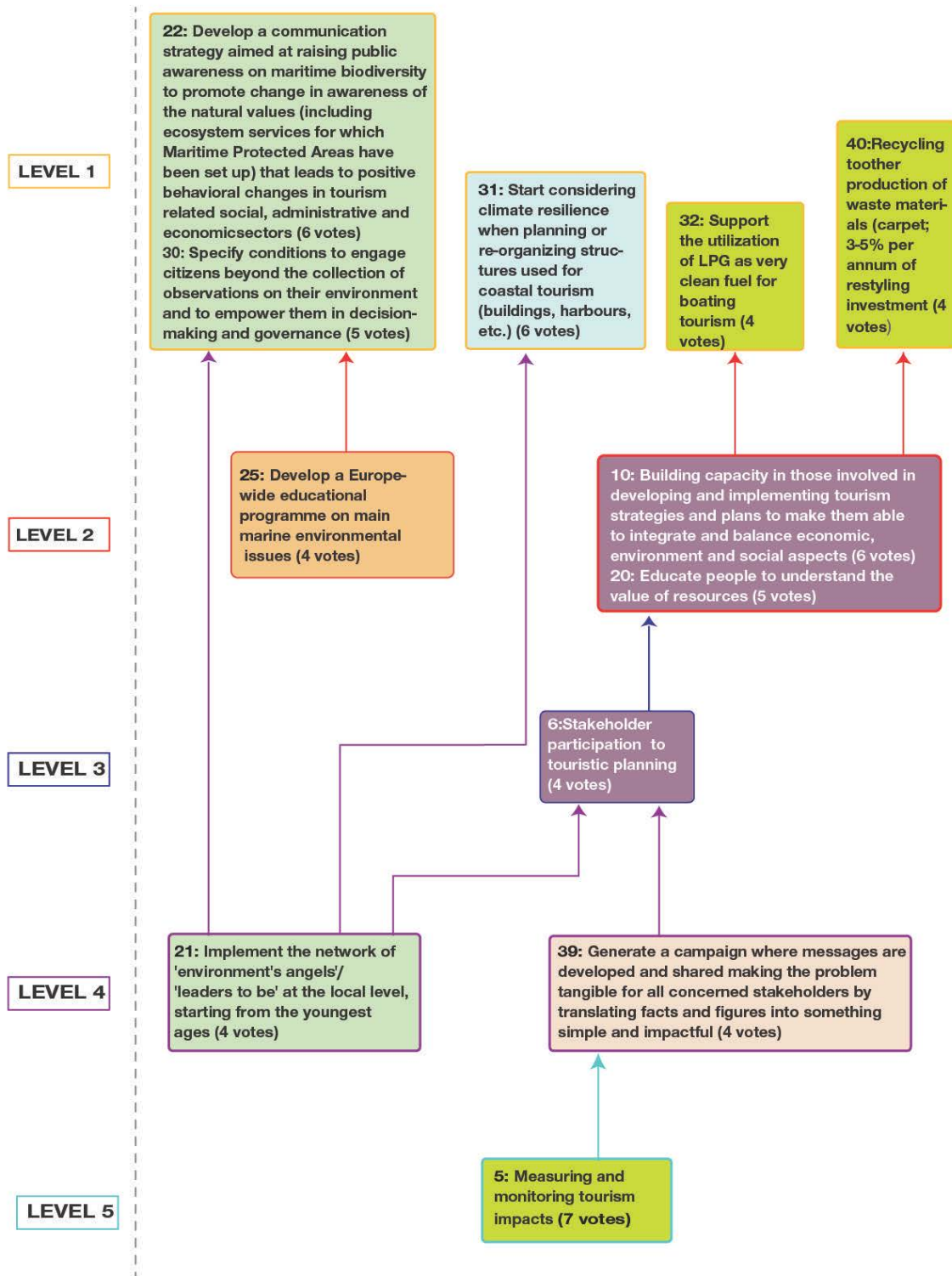


Figure 4 - Final roadmap produced by the participants

5.8 Developing SMART action plans

In order to better understand if and how the roadmap can be realistically implemented, we asked the participants to indicate, for each of the 4 root actions (Levels 5 to 3; Figure 4), one or two specific activities needed. We also asked them to give us their estimate on how could we measure their completion, if they are achievable, realistic, and in which time-frame we could hope to implement them. The results of this survey are reported in Table 2.

This process was established as a follow up of the WS in Venice inviting all participants to provide SMART actions; in total 8 participants provided their input.

Table 2 - SMART action plans proposed by some of the participants for root actions 5, 6, 21 and 39.

Action Plan 5: Measuring and monitoring tourism impacts				
S	M	A	R	T
Describe the SPECIFIC Activity you propose	Is the implementation of the specific activity MEASURABLE? How?	Is the implementation of the specific activity ACHIEVABLE? How?	Is the implementation of the specific activity REALISTIC? Why?	How long would it take (time) to fully implement the activity?
Exhaustive, complete accurate database of all housing, accommodation and empty properties in Venice. Privately owned and public. Historic city and islands.	Yes. Straightforward digital database that can be structured in different ways	Yes providing new regulations and institutional transparency. Some special measures will be needed to overcome privacy issues but this should not obstruct the policy mission.	Yes. It is fundamental to being able to understand where to set limits on land use.	1-3 years
To identify environmental and socio-cultural indicators to be measured. For instance: species disappearance, deforestation rates, change in pollution and property prices and a number of returning tourists.	Yes, it is measurable (row data, ratio, percentage)	Local stakeholders, policy makers, citizens should be trained by experts in data collection.	As far as the training is well done, good quality of data collection, the credibility of information and the understandability to users are ensured and the proposed implementation is realistic.	>10 years
Identify indicators to measure and monitor impacts, identify every how often they need to be measured	yes	by setting up a monitoring scheme	lists of indicators are available	1-3 years
This issue could be tackled within the Mr. Goodfish program (sustainable consumption of seafood products), and its implementation within the touristic regions	Consumption number of species recommended by Mr. Goodfish in the selected touristic region.	Yes, through the program Monitoring and Evaluation activity that enables to follow this.	Yes, as this is already an ongoing activity that needs to be adjusted for this specific MARINA action.	Cannot provide a response on this.
To activate covenants between public administration, university and stakeholders in order to collect, record and elaborate tourism impacts maps and reports	Yes, with a "road-map" and values/percentage of success.	yes but only with economical and motivational support	Not so much. There are too many prerequisite and actors which have to collaborate together in short time	1-3 years
Innovative planning solutions according to ICZM/MSP based on quantitative tools and on econometric analysis	Planning solutions to tackle territorial assets sustainable use, while balancing conflicts between landscape preservation and tourism growth pressures and tailoring responses to destination cycle	Through the utilization of a territorial model that takes into account the Anthropic assets (Urban infrastructure, Accessibility, Accommodation capacity, Tourism Facilities, Cultural Heritage), Environmental Assets (Climate, Natural resources), Economic Assets (Sectorial structure of the local economy, Tourism business capacity, Destination management), Social assets (the positive attitude of residents to the tourism, the associative fabric, the incorporation of local values of the territory), Institutional Assets (Good governance of the institutions, Inter-institutional relations, Regulation of tourism activity)	through the development of Smart Integrated Tourism Data System (SITDS), integrating the various database (tourism territorial assets) in a new smarter database based on the use of Big Data making it more Comprehensive, covering a different data multitude (with the strategic role of private companies in transport, telecommunications...) bridging the gaps	1-3 years
Awareness Campaign on the importance of safeguarding the environment	Yes, on the basis of the number of participants/tourists	Yes. Defining with the Hotel Associations a program and season for implementation	Yes. It starts from the willingness of realizing it	1-3 years

Collect data about additional waste and other impacts on environment during touristic season and evaluate the differences with same data collect during different period of the year	Yes, it is. It's possible to compare different data and to analyze the needs in terms of service for waste disposal and mitigation of other impacts during touristic season	Yes, it is. It need that the local administration monitors and analyses the supplementary work need to answer to the exigence in terms of quantity of waste collected during the touristic season	Yes, it is. The local administration have to instruct some internal personal into to spend some time in this activity	1-3 years
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Action Plan 6: Stakeholder participation to touristic planning

S	M	A	R	T
Describe the SPECIFIC Activity you propose	Is the implementation of the specific activity MEASURABLE? How?	Is the implementation of the specific activity ACHIEVABLE? How?	Is the implementation of the specific activity REALISTIC? Why?	How long would it take (time) to fully implement the activity?
To evaluate the perception of managers of tourism on general business success factors and personal success factors.	Yes it is through a quantitative survey on a group of managers of tourism business.	The data can be collected using questionnaires captured on Excel spreadsheets and analyzed	Yes, it is since this study has been already done in Soshanguve, South Africa. Indeed, the results reveal discrepancies between what the managers perceive to be general business success factors in the community and the factors they consider to have contributed to their personal business success	4-6 years
Identify who are the stakeholders to be engaged	very difficult to measure	yes, workshops, focus groups, interviews and other activities can be organized	Very common to involve stakeholders, there are many examples of methodologies, such as the very good one you have used in Venice!	1-3 years
Legislation awareness	This could be done throughout measuring the impact of a raising awareness campaign (e.g. number of recipients)	It depends if such campaign is being developed and launched (based on the organization agenda and available resources)	Yes: this campaign can be led by any stakeholder.	no idea
Activate a motivational plan in order to obtain local participation by citizens and local associations	yes, monitoring activities and participation as a percentage of all citizens	Not so much. it requires intense activities and economic support	Yes, because people who live in the territory are really interested in plan and participate, but usually they don't know how or they have no time.	1-3 years
The territorial problems of the tourism destinations to be faced are wide-ranging, since they do not only relate to the well-known "direct impacts" (environmental, economic and social) generated by tourism, but also to the "way" in which the "territorial system" and its stakeholders may actually tackle these challenges, by improving their scientific knowledge and cooperation, as well as, surpassing structural gaps underlying their inability to support a sustainable tourism development operationally	Development of a Tourism Business Ecosystem for a better understanding of stakeholders relations reaching sustainable solutions	through the development of tools for a common approach, in particular a Participatory Decision Support System (PDSS) that will create effective synergies and cooperation mechanism to enhance the involvement and the coordination of both private and public stakeholders	Through the finalization of the SHAPETOURISM project protocol that will enable public and private stakeholders and target groups to implement a more effective, sustainable and responsible coastal and tourism development	1-3 years
Almost fundamental. It should already have taken place. However, organizing two/three meetings before, during and after the Touristic season	Yes, both for their participation and the feedback	Yes, through the involvement of the operators	Yes, as it starts from who already exists	1-3 years
Create a working group composed by all the most important stakeholder with the scope of sensitizing them and planned all the action useful to reduce touristic impact	No, it isn't.	Yes, it is. It's important to prepare and sensitize all the stakeholder and involved them with the perspective of increase accommodation capacity and touristic flux	Yes, it is. All the action for involved the stakeholder at the local level could have success if correctly prepared. But it is necessary to inform them before the start of the touristic season and perhaps introduce some incentive or primal tools	1-3 years

Action Plan 21: Implement the network of 'environment's angels'/ 'leaders to be' at the local level, starting from the youngest ages

S	M	A	R	T
Describe the SPECIFIC Activity you propose	Is the implementation of the specific activity MEASURABLE? How?	Is the implementation of the specific activity ACHIEVABLE? How?	Is the implementation of the specific activity REALISTIC? Why?	How long would it take (time) to fully implement the activity?

To promote educational campaigns inside and outside the school to popularize environmental awareness along with rules of courtesy and good manners, they are all valuable for the youngest ages.	Yes through face-to-face interviews.	Creating a higher degree of awareness of the fact that young of the third millennium will inherit the environmental degradation of today and encourage them to be more concerned than older generations about the need to repair the environment.	It can be realistic, time will tell.	>10 years
Contacts with schools to engage students	Very difficult to measure, the number of 'angels' involved could be measured, but the quality of the engagement would not be reflected in the simple number, and the quality in this case counts more, e.g. few people involved but with a high interest would be good	Special programmes and laboratories for schools should be designed as part of the curricula	not sure how realistic the implementation is	4-6 years
World Ocean Network Ambassadors (Adults and Youth)	Number of distributed WON passport per category	Yes, as this is an ongoing existing activity at the WON, and among its members	Same response.	1-3 years
Activities at primary school and the inclusion in a sovra-structure when children became teenagers	Yes, with a percentage account related to young peoples reached at school	only with a long-time perspective and uninterrupted economical support (it is not so expensive but need that managers do not spend time for search and require money but stay focalized to children's activity and training)	yes	>10 years
Environment issues are tackled with a participatory and holistic approach.	Improved monitoring tools in a wider ICZM and MPS perspective of sustainable utilization of territorial assets for tourism purposes	Green issues and enabling conditions through the creation of new functions of a responsible and sustainable coastal tourism for a Heritage site	We provide an effective contribution to the Pillars "Sustainable Tourism" and "Environmental Quality" of the EU Strategy for the Adriatic-Ionian Region (EUSAIR): through tools and responses for better and integrated management of Coastal Tourism with a transnational and regional perspective, providing tools necessary for a better implementation of both ICZM and MPS directives.	1-3 years
Organize small groups of young leaders guided by an adult trained to explain the youngest how much important is to respect the environment	Yes, on the basis of the number of groups you put together during a touristic season	Yes. For example, at the seaside during holidays many places organize funny activities for the youngest. You can put among them also the one regarding the awareness of the safeguard of the environment	Yes as it benefits from the boys and girls and places that already exist	1-3 years
Work with the student since the first classes and increase educational programs and initiative about environmental problems	Yes, it is. It's possible to measure the number of young end student involved.	Yes, it is. The schools are open to this activity and so it's possible to implement this action with more investments and a specific planning of this activities.	Yes, it is. Just many associations do it. It's important that the local administration and local stakeholders plan some specific program and stimulate the school to realize this initiative.	7-10 years

Action Plan 39: Generate a campaign where messages are developed and shared making the problem tangible for all concerned stakeholders by translating facts and figures into something simple and impactful

S	M	A	R	T
Describe the SPECIFIC Activity you propose	Is the implementation of the specific activity MEASURABLE? How?	Is the implementation of the specific activity ACHIEVABLE? How?	Is the implementation of the specific activity REALISTIC? Why?	How long would it take (time) to fully implement the activity?
Tools and knowledge which describe the impacts should be designed and made available to the relevant people	the number of people from the tourism sector who are engaged could be a good thing to measure	through an adequate campaign to involve people by making them understand that they need to take into consideration climate change impacts just as any other issue to plan their activities	Just as any other campaign to disseminate knowledge	1-3 years
Raising awareness campaign with the usage of a series of communications means (ex: Mr.Goodfish program)	Measuring/ following the impact of each of the communications means used to disseminate the campaign's message.	Yes, by developing a monitoring and evaluation protocol, as the Mr.Goodfish program has adopted.	Yes: when a raising awareness campaign is launched, its impact is usually followed (identification of valuable criteria, and change of behaviors items) this is already the case for the Mr.Goodfish program.	based upon the program agenda and available resources
Good contracts with really good marketing societies that can work locally	Not too much, in short time. it has only a few direct returns but high indirect ones	no	no	1-3 years

Stakeholders and targets groups are involved to reduce the gap between study results and applicability. Awareness and dissemination activities will be held in order to acknowledge them about the responses they can achieve by accessing the Smart Integrated Tourism Data System (SITDS), stimulating at the same time their participatory feedback in order to improve the whole process	Target groups will be involved in surveys and interviews. This approach is double-faced: we need to gather data and information from direct source to elaborate our analysis, but at the same time we have the benefit and the opportunity to engage them in our project.	Through dissemination and awareness activities and meetings with regional and local authorities, and at the same time the results are transferred to the international network of the project	The results and outputs of the project are transferred to public authorities having competence in strategic planning and tourism sustainable development. This will enhance their capacity building in tackling the major challenges of the maritime and coastal tourism destinations.	1-3 years
I would generate a campaign not with the bad news but what can be better done	In a long time but yes, just checking out the new behaviors people adopt	it's achievable but in the medium-long term	Yes	>10 years
Invest on designing of campaign about this themes with the involvement of all the stakeholders that have an interest in this problems and using the expertise and the companies that are in the territory and just work in the field of communication and environmental education	Yes it is. It's possible to measure all the activities of sensitization both in terms of products for dissemination and in number of persons contacted and involved	Yes it is. It's useful and important that the initiative starts from the local administration and with the participation of stakeholder and that a part of the fund used for the impact of the tourism would be used for this scope.	Yes it is. The campaign of information and sensitization are important and they have a return in terms of reduction of touristic impact. So it's very realistic that some funds are destined for this action from local administration with a small contribution from the stakeholder that have more damage by touristic impact	1-3 years

6 Sustainable tourism and Responsible Research and Innovation

6.1 How do the results relate to the RRI dimensions?

To the purpose of this report we analysed the 47 actions proposed by participants **assessing their links with eight RRI principles** (Figure 5). Governance is the RRI principle that collects more action (32): this is an expected result because of most of the actions, in a civil society, require an integrated approach and tight cooperation between Authorities and other stakeholders, with a clear definition of duties and responsibilities. Governance is required mainly for raising awareness purposes and innovation and mitigation actions. The sustainability of every process put in place, mostly in the innovation field, and the increasing consideration of civil society needs and expectations explain why Sustainability and Public Engagement were also tackled by several actions (17 and 14). On the contrary, no action could be directly related to Gender Equality. 2/3 of the 47 actions fitted under 2 or more RRI dimensions (Table 3), as a further confirmation that an integrated approach is by now felt as necessary by the general audience too. Specific analysis, for each dimension, are reported below.

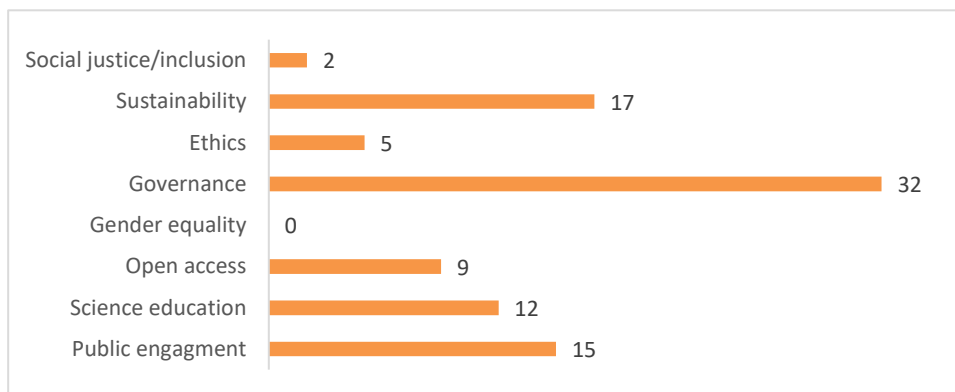


Figure 5 - Number of actions related to the eight RRI dimensions considered and theme groups.

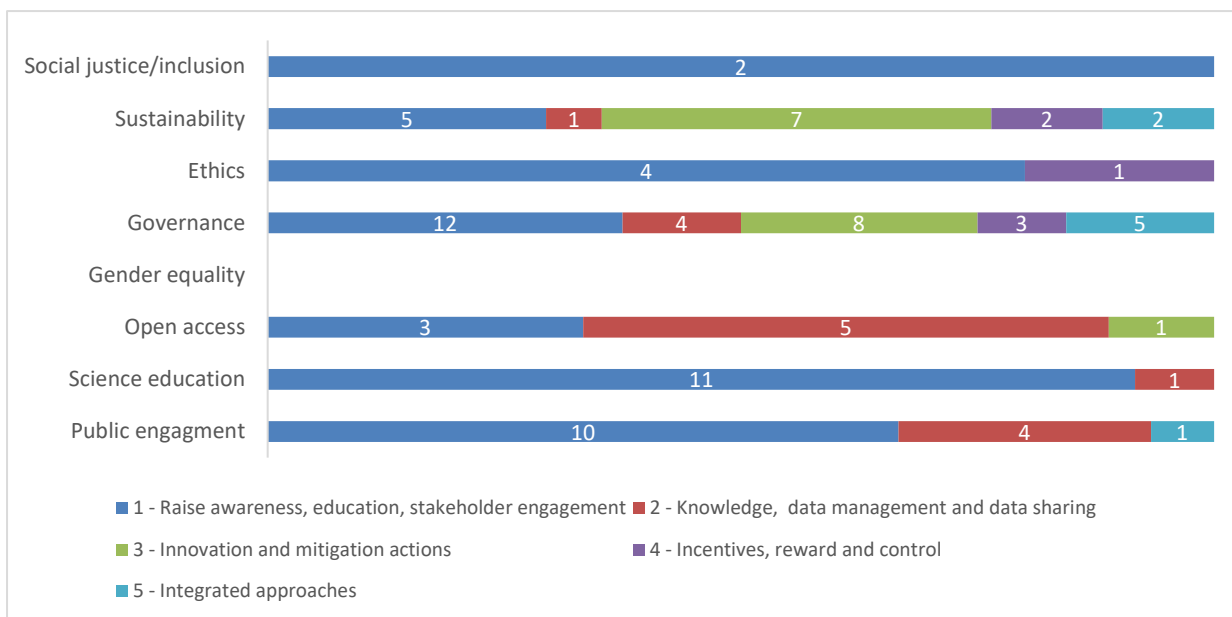


Figure 6 – Proportional distribution of the actions related to the 5 Theme groups identified by the Authors in the 8 RRI dimensions

Table 3 – Relations, elaborated by the Authors, of the 47 actions with the RRI dimensions. Please see Appendix 2 for titles and clarifications of the actions

n.		Public engagement	Science education	Open access	Gender equality	Governance	Ethics	Sustainability	Social justice / inclusion
1	Raise awareness on existing legislations	Yes				Yes			
2	Educate stakeholders on civic duty and sustainability rather than on own private benefits	Yes	Yes				Yes		
3	Increase the controls to avoid illegal practices					Yes	Yes	Yes	
4	Promote RRI processes able to introduce innovation in the shipbuilding industry					Yes		Yes	
5	Measuring and monitoring tourism impacts			Yes		Yes			
6	Stakeholder participation to touristic planning	Yes		Yes		Yes			
7	Introduce incentives and reward measures in the touristic areas					Yes			
8	The establishment of a novel partnership between private sector, public bodies and volunteers	Yes				Yes		Yes	
9	Enhance responsibility of tourism operators and tourists					Yes			
10	Building capacity in those involved in developing and implementing tourism strategies and plan		Yes			Yes	Yes	Yes	
11	Simplify and unify rules to ease the construction of LNG/LPG filling stations for marine use		Yes			Yes		Yes	
12	The development of new technologies (Seaplanes)								
13	Effective communication against greenwashing	Yes		Yes		Yes	Yes		
14	Holistic, integrated, long-term wide scale approaches	Yes				Yes			
15	Limiting the impacts and challenges to the environment and social fabric of large cruise ships					Yes		Yes	
16	Improve the European quality of the environment to capture the growing rich market of Chinese tourism					Yes			
17	Enhance the capacity building of public-private tourism related stakeholders		Yes			Yes			
18	Valorize the sustainability of tourist destinations							Yes	
19	Optimization of dedicated labor market					Yes			
20	Educate people to understand the value of resources		Yes	Yes					
21	Implement the network of 'environment's angels'		Yes						Yes
22	Develop a communication strategy	Yes	Yes						
23	Enhance a multi-stakeholder dialogue	Yes				Yes			

24	Involve all possible stakeholders in innovative actions	Yes				Yes			
25	Develop a Europe-wide educational programme on main marine environmental issues	Yes	Yes			Yes			Yes
26	Spreading tourism out over the year					Yes		Yes	
27	Communication and education campaigns		Yes						
28	Promote diffuse tourism					Yes		Yes	
29	Promote programs of environmental education for students, tourists and operators		Yes						
30	Specify conditions to engage citizens beyond the collection of observations	Yes				Yes			
31	Start considering climate resilience when planning or re-organizing structures					Yes		Yes	
32	Support the utilization of LPG as very clean fuel for boating tourism					Yes		Yes	
33	Better and shared data and information to inform decisions			Yes					
34	Clarify and establish baseline parameters and conditions for 'sustainable' tourism					Yes		Yes	
35	Encourage knowledge transfer		Yes	Yes					
36	Upgrading sewage network and wastewater treatment plants in coastal areas							Yes	
37	Road networks in a buffer region					Yes			
38	Foster to use very clean Natural Gas as fuel for cruising ships					Yes		Yes	
39	Generate a campaign where messages are developed and shared	Yes	Yes						
40	Recycling to other production of waste materials					Yes		Yes	
41	Create a co-mapping program allows people to plan a sustainable mobile tourist trip			Yes		Yes		Yes	
42	Identify clear parameters that can be easily understood by the general public	Yes		Yes		Yes			
43	Assess impact of tourists on society and environment					Yes			
44	Establish discussion platforms involving the different stakeholders of the tourism sector	Yes							
45	Effective measurement of pedestrian tourist fluxes in high density destinations			Yes					
46	Agree on trade-offs and support them	Yes							
47	Foresee the guidance of a 'super partes' actor, ethically exemplary						Yes		
48	Develop Tourism Business Ecosystems					Yes		Yes	

6.1.1 Public engagement

Fifteen actions were related to public engagement, a societal commitment to provide encouragement, opportunities, and competencies in order to empower citizens to participate in debates around Research and Innovation.

Actions on the map		
Action n.	Title	N. of votes
22	Develop a communication strategy aimed at raising public awareness on maritime biodiversity to promote change in awareness of the natural values (including ecosystem services for which Maritime Protected Areas have been set up) that leads to positive behavioral changes in tourism-related social, administrative and economic sectors	6
30	Specify conditions to engage citizens beyond the collection of observations on their environment and to empower them in decision-making and governance	5
6	Stakeholder participation in touristic planning	4
25	Develop a Europe-wide educational programme on main marine environmental issues	4
39 (Root)	Generate a campaign where messages are developed and shared making the problem tangible for all concerned stakeholders by translating facts and figures into something simple and impactful	4
Actions not on the map		
42	In order to be environmentally sustainable, the tourism sector needs to be identified through clear parameters that can be easily understood by the general public	3
1	Raise awareness of existing legislations	1
2	Educate stakeholders (policy makers, researchers, entre/intrapreneurs, workers, citizens, tourists) on civic duty and sustainability (economic, social, environmental) rather than on own private benefits	1
14	Holistic, integrated, long-term wide scale approaches feeding sound and consistent local scale measures	1
23	Enhance a multi-stakeholder dialogue	1
24	Involve all possible stakeholders in innovative actions, take care of their expectations and agree on trade-offs, under the guidance of a <i>super partes</i> actor, ethically exemplary	1

44	Establish discussion platforms involving on a stable basis the different stakeholders of the tourism sector	1
8	The establishment of a novel partnership between private sector, public bodies and volunteers so that, in real life, all voices are heard and citizens' requirements for the sustainable use of their environment can fit policy needs and vice versa	0
13	Effective communication against greenwashing	0
46	Agree on trade-offs and support them	0

These actions aim at improving sustainability in marine and coastal areas through the public participation in the decision-making process and through strong education on civic duty and sustainability. Coastal areas in Italy are highly urbanized and tourism apply a massive impact both on cities and on marine habitats. Local citizens can be advantaged by tourism, of course, but mass tourism has a negative impact on the social structure of the communities, turning all economic and societal activities into tourist-oriented tasks. This often leads not only to high pollution, increased waste production and habitat destruction, but also to a severe loss of identity of the local communities. The workshop took place in Venice, where this problem is deeply perceived due to the strong number of tourists visiting the city. The high local impact, a problem not limited to Venice, is reflected in the high number of action proposed that request a multi-stakeholder dialogue and the consideration of public expectations. Citizens, operators, entrepreneurs, want to be informed through public meeting and awareness raising activities and ask to participate in the tourist planning.

Box 1 –Tools for enhancing capacity building

Daniele Sferra – Ca' Foscari Venice University

Global changes of the last decade pose relevant challenges for the sustainable preservation of the cultural and environmental assets of the coastal tourism destinations Public and private stakeholders and policy-makers must take immediate action to implement innovative policies to assure a balanced competitiveness, growth and sustainability of the maritime tourism sites.

A key tool in this perspective is the development of a DSS (Decision Support System) that takes into account the most important factors of tourism attractiveness, competitiveness and sustainability identifying the dynamics of the coastal territorial assets (natural and cultural) that may be fostered in an approach of sustainable exploitation and in the perspective of facing the current global challenges. The DSS supports stakeholders and private operators in their strategic choices providing addresses and realistic strategies on how to connect entrepreneurial innovative ideas in tourism through a business ecosystem approach, balancing the massive tourism flows with the challenge to ensure sustainable use of the seas, including the sustainable development of marine areas and coastal regions, while revealing their economic potential.

6.1.2 Science education

“With knowledge comes responsibility, therefore an environmental education Programmes must be developed, in joint collaboration with different stakeholders, to inform both tourists, and those working in the tourism industry about main marine environmental issues.” Francesca Santoro – UNESCO

Science Education is every activity that aims at promoting an interest in science, in particular among young people: educate about scientific facts as well as engaging citizens in science and generating awareness (e.g. Museum) and cooperation (e.g. Citizen Science) on science-related issues.

Actions on the map		
Action n.	Title	N. of votes
22	Develop a communication strategy aimed at raising public awareness on maritime biodiversity to promote change in awareness of the natural values (including ecosystem services for which Maritime Protected Areas have been set up) that leads to positive behavioral changes in tourism-related social, administrative and economic sectors	6
25	Develop a Europe-wide educational Programme on main marine environmental issues	4
39 (Root)	Generate a campaign where messages are developed and shared making the problem tangible for all concerned stakeholders by translating facts and figures into something simple and impactful	4
10	Building capacity in those involved in developing and implementing tourism strategies and plans to make them able to integrate and balance economic, environment and social aspects	6
20	Educate people to understand the value of resources	5
21 (Root)	Implement the network of 'environment's angels'/ 'leaders to be' at the local level, starting from the youngest ages	4
Actions not on the map		
11	Simplify and unify rules to ease the construction of LNG/LPG filling stations for marine use. Prepare a new generation of technicians to manage the more technological gaseous fuels used in the marine field.	1
17	Enhance the capacity building of public-private tourism-related stakeholders for a sustainable management of the coastal tourism maritime destinations cultural and environmental assets	1
2	Educate stakeholders (policy makers, researchers, entre/intrapreneurs, workers, citizens, tourists) on civic duty and sustainability (economic, social, environmental) rather than on own private benefits	1
27	Communication and education campaigns	0
29	Promote programs of environmental education for students and specific categories of tourists and operators	2
35	Encourage knowledge transfer	0

The participants identified the need for a deep behavioral change in citizens to effectively face the issue of touristic pressures. Tourists, citizens, students, and operators that take advantage of the touristic activities need a nature-based, environmental education-base in order to correctly understand the environmental, cultural and resource management values. Education is more than just a one-way transfer of information, it is about explaining, stimulating, provoking and understanding. Tourists must be educated but also involved in interesting and enjoyable manners that are supposed to bring a change in their behavior, from the choice of their holiday location and activities to a more sustainable behavior on beaches, cruises, cities etc. (i.e. waste disposal). Again, Venice is a fragile city with a non-sustainable daily touristic flux from all over the world, and as all other location in Italy and Europe, it could take great advantage from the developing of a Europe-wide educational Programme on main marine environmental issues.

Box 2 – Knowledge transfer

Nathalie Gamain, Word Ocean Network

Encourage knowledge transfer can be led by imagining, sharing and testing ideas together while answering each other's needs and concerns, through "Local Living Labs" for instance. "Local Living Labs" are opportunities for researchers, industry, and policymakers to work together at local level to share ideas and look for solutions with citizens.

Target groups and roles:

- Citizens: share their questions and ideas,
- Researchers and Industry: analyses these questions and ideas,
- Students and Industry: common workshop, learn while contributing, generate ideas
- Local media: raise the activity profile and work on solutions,
- Policymakers: analyses and search solutions with the others.

Another important element enhanced by participants is the fundamental need of scientific knowledge and professional growth that will help to implement tourism strategies that integrate and balance

economic, environmental and social aspects on one hand, and sustain the adoption of sustainable innovations and technologies in the other. In the last years the impact of big cruise ships on small and fragile sites have been more and more highlighted by citizens and non-profit organizations: in Venice, this problem is actual and green solutions are strongly asked and needed.

6.1.3 Open access / Open Science

Some of the actions were related to Open Access / Open Science, the practice in which the policy and research and innovation processes are shared completely by making results freely available and to give access to research data.

Actions on the map		
Action n.	Title	N. of votes
6	Stakeholder participation in touristic planning	4
5	Measuring and monitoring tourism impacts	7
20	Educate people to understand the value of resources	5
Actions not on the map		
41	Create a system similar to car-sharing platforms where a smart co-mapping program allows people to plan a sustainable mobile tourist trip by connecting coastal towns and islands through hop-on-hop-off practices. In addition, the smart web-based mapping system will host additional information: bio-diversity records, cultural heritage, etc.	4
42	In order to be environmentally sustainable, the tourism sector needs to be identified through clear parameters that can be easily understood by the general public	3
45	Effective measurement of pedestrian tourist fluxes in high-density destinations	2
33	Better and shared data and information to inform decisions	0
35	Encourage knowledge transfer	0
13	Effective communication against greenwashing	0

A certain number of action urge for a better communication of results and parameters related to the tourism, such as impacts, fluxes etc. A better knowledge transfer from research / authorities to local citizens or tourists could help them understand the value of the resources they are exploiting or benefit for. Shared data could also be used for building innovative solutions like smart co-mapping programs that allow people to plan a sustainable trip while giving information about environment, cultural heritage, recreational opportunities etc.

Box 3 – A smart co-mapping

Emilio Cocco, Università degli Studi di Teramo

The use of a system similar to car-sharing platforms where a smart co-mapping program allows people to plan a sustainable mobile tourist trip by connecting coastal towns and islands through hop-on-hop-off practices. In addition, the smart web-based mapping system will host additional information: bio-diversity records, cultural heritage, etc.

Coastal cities and islands are usually the targets of intensive and high-impact tourist flows, mostly concentrated in peak tourist seasons. Accordingly, material infrastructures are heavily shaping the urban landscape although they are fully exploited for a short period of the year. This is mostly true for land-based infrastructure of mobility for tourism in coastal towns and islands, which are largely "terrestrialized" and depending on motor-vehicles: motor-bikes, cars, mini-buses, etc.

I believe it takes a joint action involving public and private stakeholders (including NGOs) to support the development of strategies of integrated sustainable mobility, namely diversified used of boats, bikes and electric car-sharing. The goal is to create regional based systems of sustainable mobility connecting coastal towns and islands that allow hop-on-hop-off practices. ICT is a crucial part of the above-mentioned practice because it brings actively people together and enables smart information sharing.

As a result, we reduce the impact of the environment and the overall ecological footprint. Plus, using the same web-based technology for interactive mapping we can use the same tool to record important geo-located information such as biodiversity and cultural heritage.

6.1.4 Gender equality

No one of the proposed action was directly linked to gender equality, meaning that no one of the action foresees a particular gender issue. This result could be partially review considering that some actions refer to Social inclusion, which considers the inclusion of all minority or disadvantaged groups, including women. Nevertheless, it is important to observe that the direct involvement of women, or their non-exclusion, is not considered as a straight or an opportunity in the process of making tourism sustainable.

6.1.5 Governance

A very high number of actions, such as monitoring programmes, the introduction of incentives, change in legislation, opening to other markets, the establishment of partnerships etc. require a collaborative effort that mainstream different authorities and stakeholders for their accomplishment.

Participants highlighted the need to promote less known localities and to develop different touristic offers (cyclists or Nordic walk parkour and infrastructures, families or students-tailored solutions etc.), with the aim of distributing services and economic advantages on a wider area and release the pressures on the most visited locations.

These actions all fit the Governance principle in the sense that an effective cooperation between all the actors is needed, creating a long-term investment plan that is responsive to society, taking care of the different societal needs and desire.

Governance, intended as RRI principle, addresses the responsibility of policy makers to prevent harmful or unethical development in research and innovation by adopting and supporting all the other RRI principles, fostering the creation of networks of stakeholders that collectively assume responsibility for the outcomes. Governments must support innovative technologies in the marine field and smart solutions such as new fuels, road networks new recycling options etc., while preventing possible impacts of the innovation on the environment and societies.

Some of the actions raised from the difficulties that Italian companies and citizens encounter with complex legislation and long administrative paths. To be efficient and responsive, a government should have a light structure and organization, able to adapt to technical and societal changes and to anticipate tensions or possible impacts in order to quickly react and find solutions. Climate change is one of these factors: its impacts on coastal structures and populations living along the actual coastline must not be underestimated. The emerging Chinese tourism is an inevitable societal development that could lead to severe impacts on the environment and coastal communities if not considered in a wide touristic plan, flexible enough to adapt to new situations and needs.

Actions on the map		
Action n.	Title	N. of votes
5 (Root)	Measuring and monitoring tourism impacts	7
10	Building capacity in those involved in developing and implementing tourism strategies and plans to make them able to integrate and balance economic, environmental and social aspects	6
31	Start considering climate resilience when planning or re-organizing structures used for coastal tourism (buildings, harbor, etc.)	6
30	Specify conditions to engage citizens beyond the collection of observations on their environment and to empower them in decision-making and governance	5
6 (Root)	Stakeholder participation in touristic planning	4
25	Develop a Europe-wide educational Programme on main marine environmental issues	4

32	Support the utilization of LPG as very clean fuel for boating tourism	4
40	Recycling to other production of waste materials (carpet; 3-5% per annum of restyling investment)	4
Actions not on the map		
41	Create a system similar to car-sharing platforms where a smart co-mapping program allows people to plan a sustainable mobile tourist trip by connecting coastal towns and islands through hop-on-hop-off practices. In addition, the smart web-based mapping system will host additional information: bio-diversity records, cultural heritage, etc.	4
4	Promote RRI processes able to introduce innovation in the shipbuilding industry, to reduce the impacts of sea transportation related to the tourism sector	3
42	In order to be environmentally sustainable the tourism sector needs to be identified through clear parameters that can be easily understood by the general public	3
34	Clarify and establish baseline parameters and conditions for 'sustainable' tourism	3
48	Develop Tourism Business Ecosystems for a better understanding of stakeholders relations reaching sustainable solutions	3
7	Introduce incentives and reward measures in the touristic areas that actively sustaining marine and coastal environmental protection	2
9	Enhance responsibility of tourism operators and tourists for future generation by economic incentives (pricing of natural resources, taxes etc.)	2
3	Increase the controls to avoid illegal practices of tourist settings on the coast, e.g. discharge of wastewater into the sea	1
11	Simplify and unify rules to ease the construction of LNG/LPG filling stations for marine use. Prepare a new generation of technicians to manage the more technological gaseous fuels used in the marine field	1
1	Raise awareness of existing legislation	1
16	Improve the European quality of the environment as value to capture the growing rich market of Chinese tourism	1
17	Enhance the capacity building of public-private tourism-related stakeholders for a sustainable management of the coastal tourism maritime destinations & cultural and environmental assets	1
14	Holistic, integrated, long-term wide scale approaches feeding sound and consistent local scale measures	1
23	Enhance a multi-stakeholder dialogue	1
24	Involve all possible stakeholders in innovative actions, take care of their expectations and agree on trade-offs, under the guidance of a super partes actor, ethically exemplary	1
43	Assess impact of tourists on society and environment, with a specific focus the built environment and on land-use	1
19	Optimization of dedicated labor market; optimize purchases (savings reinvested in environmental compatibility)	0
28	Promote diffuse tourism	0
8	The establishment of a novel partnership between private sector, public bodies and volunteers so that, in real life, all voices are heard and citizens' requirements for the sustainable use of their environment can fit policy needs and vice versa	0
37	Road networks in a buffer region	0
38	Foster to use very clean Natural Gas as fuel for cruising ships	0
15	Limiting the impacts and challenges to the environment and social fabric of large cruise ships	0
26	Reduce impacts of the seasonal fluctuations in tourists and visitor numbers to marine destinations, spreading them out over the year, through the promotion of a wider range of resources and offerings	0
13	Effective communication against greenwashing	0

Box 4 –Monitoring tourism impacts

Erica Mingotto, Ciset

Achieving sustainable tourism is a continuous process that requires, among other things, to measure and monitor on a regular basis, the impacts brought by tourism on the environment but also on the economy, culture and society. In such a way it is possible for the destination to build an accurate picture about the level of sustainability of its tourism development and then to develop more effective tourism strategies for greater sustainability and competitiveness with a long-term vision. As a consequence it is important to promote among tourism destinations the implementation of measurement tools and indicators systems, starting from the initiatives already developed at international and European level, such as the UNWTO (see for example the Guidebook on Indicators of Sustainable Development for Tourism Destinations), GSTC (GSTC-Destination criteria), the European Commission (see ETIS – European Tourism Indicator System), etc.

Measuring and monitoring impacts is important not only at destination level but also for tourism companies. At international and European level several reporting and certification systems specifically addressed to tourism companies (tour operators, accommodation, etc.) have been developed and promoted in order to allow tourism

firms to assess their performance also in terms of contribution to sustainable development and to guide them in carrying out responsible actions

Box 5 – The Chinese tourism

Qiong Wang, X-Tech

Chinese traveling for tourism has grown at double-digit percentage rates since 2012. According to a Bank of America Merrill Lynch forecast, outbound Chinese travelers could number around 174 million by 2019, spending about 264 billion of US\$ annually. Chinese overseas travelers make up a sizable group of consumers, acclaimed as the world's largest, most favorable spenders, spending \$164.8 billion overseas in 2014, a fourfold increase over 2008.

During recent years, China's outbound travel market has grown rapidly partly due to another emerging reason: the poor air quality in major Chinese cities. Chinese traveler tourists are now usual to have a "smog insurance" for who choose to spend a holiday in Chinese cities, regularly affected by poor air quality. This is the reason why most prefer overseas destinations, in condition to grant better and great environmental conditions. *"I feel great there just to go around in the sunshine under the blue sky"* is one of the priority demand of the majority of such Chinese tourists, and Europe can have the answer to such demand.

6.1.6 Ethics

Some of the actions pointed out specifically on ethical aspects, such as education on civic principles rather than private benefits, so that societal needs would be considered. A strong need for control over illegal practices such as dumping, wastewaters and other non-acceptable practices in touristic areas emerged, been those practice sadly quite common in Italy.

Actions on the map		
Action n.	Title	N. of votes
10	Building capacity in those involved in developing and implementing tourism strategies and plans to make them able to integrate and balance economic, environmental and social aspects	6
Actions not on the map		
2	Educate stakeholders (policy makers, researchers, entre/intrapreneurs, workers, citizens, tourists) on civic duty and sustainability (economic, social, environmental) rather than on own private benefits	1
3	Increase the controls to avoid illegal practices of tourist settings on the coast, e.g. discharge of wastewater into the sea	1
47	Foresee the guidance of a 'super partes' actor, ethically exemplary	1
13	Effective communication against greenwashing	0

6.1.7 Sustainability

“As cruise ships get larger, along with the risks and environmental impacts in coastal zones, the economic interests grow too, making it increasingly difficult for other factors to be taken into consideration by policy makers. This has been the experience of Venice. More robust systems need to be developed to objectively combine an integrated analysis from the viewpoints of environmental protection, impacts on society, scientific and technical possibilities, and economic parameters.” Jane da Mosto, We are here Venice

Sustainability is related to what extent does a research field, programme or a Research & Innovation initiative contribute to inclusive and sustainable growth. This aspect of R&I was not fully considered in Europe until the rationale of Europe 2020 clearly stated that our growth model must achieve “smart,

sustainable and inclusive growth”, and was consequently set as the topic of the workshop. The sustainability of our action, especially in innovation where consequences can widely affect the environment and human communities, is essential for the future health of the planet and the group of participants seems to have very clear in mind that R&I cannot leave this aspect behind. Social aspects, as well as climate change or water pollution were considered in several fields, from policy to urban planning, from sea transportation to energy. The actions proposed contain the idea of making optimal use of environmental resources - which constitute a key element in tourism development - maintaining essential ecological processes and helping to preserve natural heritage and biodiversity. Environmentally sustainable solutions, like LNG/LPG fuels used in marine fields, can, for example, minimize several pollution sources but require dedicated and high specialization of technician, operators, engineers etc.

Actions on the map		
Action n.	Title	N. of votes
10	Building capacity in those involved in developing and implementing tourism strategies and plans to make them able to integrate and balance economic, environmental and social aspects	6
31	Start considering climate resilience when planning or re-organizing structures used for coastal tourism (buildings, harbor, etc.)	6
32	Support the utilization of LPG as very clean fuel for boating tourism	4
40	Recycling to other production of waste materials (carpet; 3-5% per annum of restyling investment)	4
Actions not on the map		
41	Create a system similar to car-sharing platforms where a smart co-mapping program allows people to plan a sustainable mobile tourist trip by connecting coastal towns and islands through hop-on-hop-off practices. In addition, the smart web-based mapping system will host additional information: bio-diversity records, cultural heritage, etc.	4
4	Promote RRI processes able to introduce innovation in the shipbuilding industry, to reduce the impacts of sea transportation related to the tourism sector	3
34	Clarify and establish baseline parameters and conditions for 'sustainable' tourism	3
48	Develop Tourism Business Ecosystems for a better understanding of stakeholders relations reaching a sustainable solutions	3
18	Valorize the sustainability of tourist destinations	3
3	Increase the controls to avoid illegal practices of tourist settings on the coast, e.g. discharge of wastewater into the sea	1
11	Simplify and unify rules to ease the construction of LNG/LPG filling stations for marine use. Prepare a new generation of technicians to manage the more technological gaseous fuels used in the marine field	1
36	Upgrading sewage network and wastewater treatment plants in coastal areas, where the tourism flows generate significant impacts	3
28	Promote diffuse tourism	0
8	The establishment of a novel partnership between private sector, public bodies and volunteers so that, in real life, all voices are heard and citizens' requirements for the sustainable use of their environment can fit policy needs and vice versa	0
38	Foster to use very clean Natural Gas as fuel for cruising ships	0
26	Reduce impacts of the seasonal fluctuations in tourists and visitor numbers to marine destinations, spreading them out over the year, through the promotion of a wider range of resources and offerings	0
15	Limiting the impacts and challenges to the environment and social fabric of large cruise ships	0

Box 6 – LNG and LPG: clean opportunities for marine fuels

Rubens Basaglia - X-Tech

The fast-growing tourism on cruising ships is becoming a very great challenge for the environment, as the heavy pollution that such giant vessels has in the seas and in the air. One only modern large cruising ship, that usually utilizes HFO – Heavy Fuel Oil – as fuel for all the needed power on board, every day can pollute the air more than 13 - thirteen - millions of cars and dump in the water more than half million of liters of human sewage! LNG – Liquid Natural Gas – has started to be used as ultra-clean power source for cruising ships and must be supported by the EU authorities as the first important step to strongly reduce the environmental impact of such kind of tourism.

Since 2013 EU has issued new rules to strongly reduce the emissions of any kind engines used on pleasure boats. An alternative to the LNG solution, that due the complexity and the high costs is suitable only for large vessels, is the possibility to utilize LPG as ultra-clean fuel for recreational boats up to 24 meters. To be evidenced LPG as is a naturally occurring by-product of natural gas extraction (70% and this means that also this clean fuel can be called “natural LPG”) and crude oil refining (30%), and consequently, we either use it or it is wasted.

6.1.8 Social justice / Inclusion

Social justice / Inclusion dimension identifies if the action is addressing an access problem of a disadvantaged group, or if it is related to new products/technology affordable to everyone.

Actions on the map		
Action n.	Title	N. of votes
21	Implement the network of 'environment's angels'/ 'leaders to be' at the local level, starting from the youngest ages	4
25	Develop a Europe-wide educational Programme on main marine environmental issues	4

7 Workshop impact and implications for the future

Implementation

The action plan, generated by the group of participants, contains 4 root actions whose completion could facilitate the entire process. According to the participants, the 4 root actions could be implemented through specific activities in a range of 1-3 years, with a few exceptions. Tourism impacts could be monitored with realistic monitoring programs and integrating the existing database (tourism territorial assets) in a new smarter database based on the use of Big Data: economic and social impacts could be detected in 1-3 years, while environmental impacts (species disappearance, deforestation rate etc.) need longer time series to be assessed. Stakeholder participation in touristic planning (and its Research and Innovation agenda) is another basic action that could be implemented in short time.

Many of the actions proposed by the group were related to a more tight dialogue between stakeholder groups in order to set priorities and action plans (e.g. Action 44: Establish discussion platforms involving on a stable basis the different stakeholders of the tourism sector). This action could be strongly facilitated by the MARINA Knowledge Sharing Platform, whose main aim is to federate stakeholder to discuss relevant topics and share knowledge, experience and solutions.

Emerging topics were (1) climate change, which could impact coastal structures and populations, (2) new markets and globalization as for Chinese tourism that will increase in the next years, (3) the opportunity to shift from oil to clean fuels in marine transportation and activities. All topics that would benefit from enforcing responsible research and innovation activities.

Policy implications

Three actions (10, 13, 25) were related to 4 RRI dimensions and seven (2, 3, 6, 8, 11, 41, 42) were related to 3 RRI dimensions, demonstrating that a policy-oriented, holistic and integrated approach is required to tackle a complex issue like tourism and its environmental impact.

A very high number of actions proposed by participants were related to policies whose implementation could be achieved in the short-term (such as the setting of monitoring programmes, an increased engagement of citizens and tourism operators, the introduction of incentives and controls on illegal practices etc.). When considering a long-term perspective, the policy must start considering globalization and foreign markets, investments in infrastructures in non-classical destinations to spread the touristic pressure, and climate change effects on coastal areas.

A strong need to overtake complex legislation and long administrative paths in policy processes emerged from the discussion.

8 Workshop follow-up in my organization

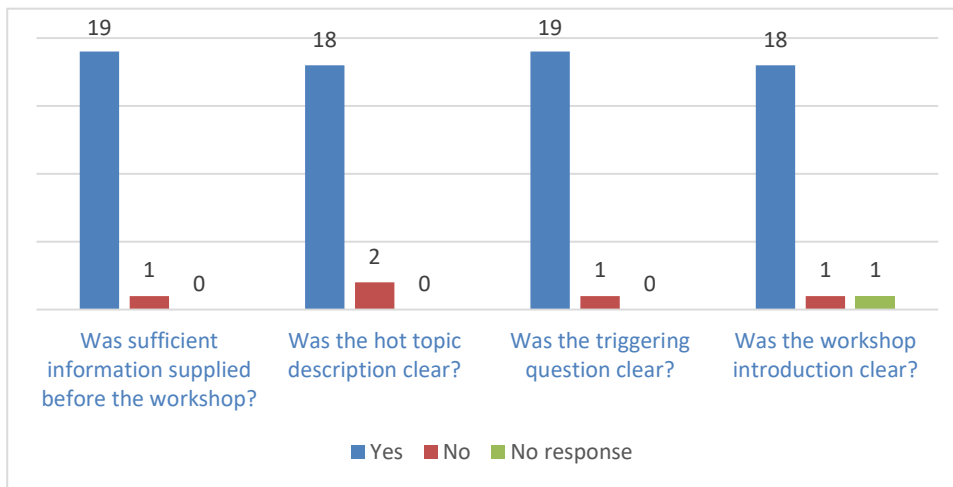
The workshop allowed the building of a network of stakeholders with high interest on marine issues and tourist impact. Some of the topics that raised from the meeting could be considered interesting and actual enough to need further analyses in the next MML workshops, or within potential future projects. The present report will be added on the KSP and sent to the participants with an invitation to discuss on the KSP any issue they may have on the results and on SMART activities. The Abstract will be published as single page document and a shorter version, focused only on the results reached by the participants and not on the methodology or workshop implementation, will also be prepared and sent for dissemination. A four pages leaflet will be released by the MARINA project in the next months, with an extract of the workshop result.

The leaflet, together with other similar reports prepared by other partners of the MARINA consortium, will be shown in all the national and international conferences and in the policy meetings that will be organized. The objective is to show the policy makers how engaging methodologies can be used not only to collect opinions but also to create a realistic and useful roadmap to face environmental and societal challenges, thus supporting citizens impact in the decision making on the policy issues.

9 How the workshop has been assessed by the participants

At the end of the workshop, we gave the participant a satisfactory questionnaire, to get input about the workshop. The results are listed below.

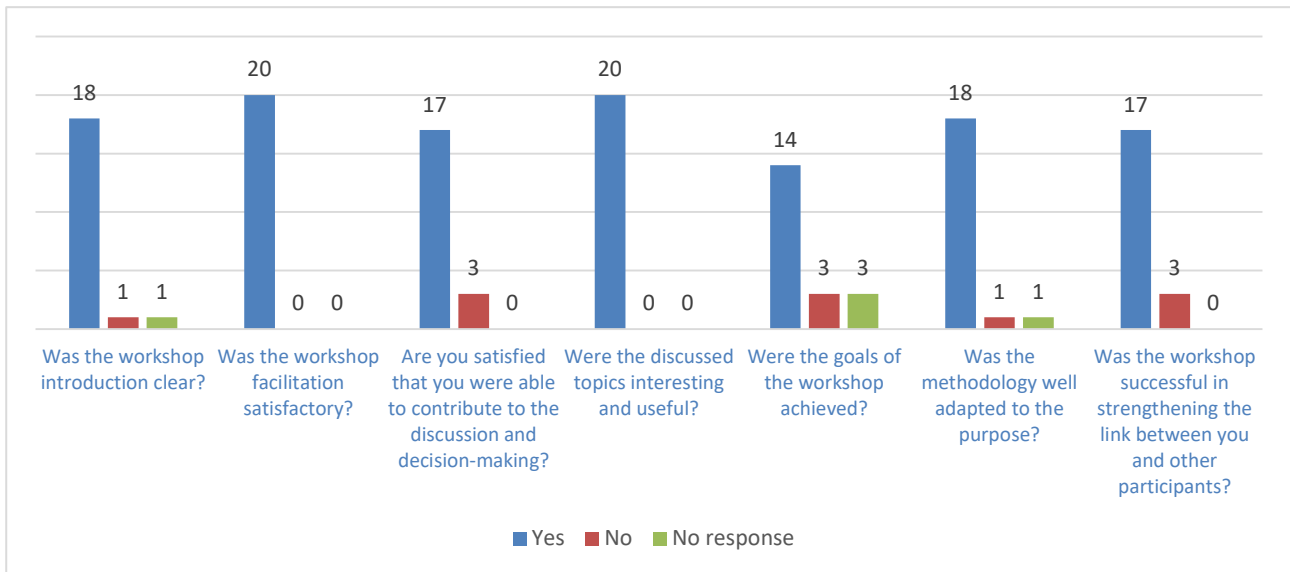
9.1 Before the workshop



What were your expectations when you registered for the MARINA MML workshop?

1. To give a concrete contribution to the definition of actions needed for a tourism environmental sustainable
2. I expected a constructive dialogue among very different people with very different point of view
3. To bring information about LPG/LNG potential and advantages in marine
4. To participate in a useful meeting and to know different point of view
5. To understand the potential market for Chinese tourists
6. I expected a more traditional discussion methodology
7. Knowledge and deepening of a topic not very tackled
8. To investigate policies for the tourism in the next future
9. To share ideas about sustainable development on tourism and to find possible solutions
10. To have an interesting discussion
11. I did not have any. I was interested in doing something new.
12. Information on the project, discussion of new strategies
13. Sharing knowledge, contribute to the discussion
14. To understood the recycling market on plastic
15. To discuss the circular economy
16. Not provided
17. Not provided
18. Share, exchange experience on the tackled issues
19. Contribute to the path toward a sustainable tourism by providing ideas and knowledge

9.2 The workshop

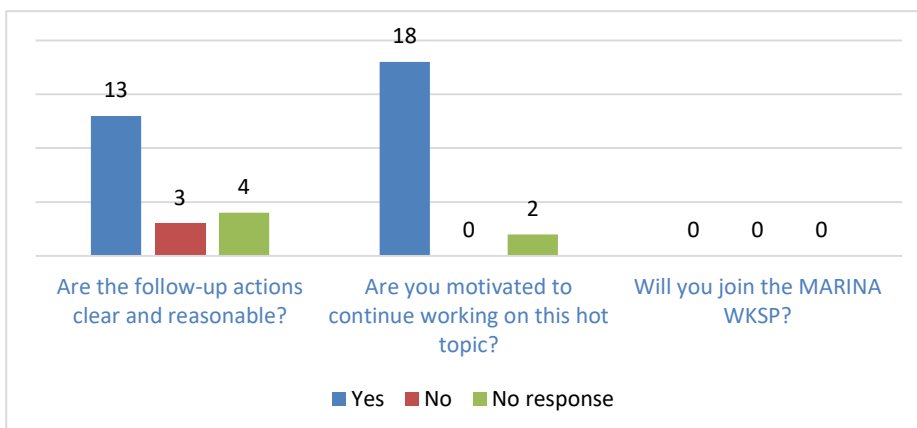


How do you think the workshop could have been made more effective?

1. I think it should have last 2 days, probably the time at disposal was limiting
2. Better selection of topics to be discussed
3. Giving a better information about the methodology (which is effective, anyway)
4. With a previous meeting (the days before) in order to explain to everyone the methodology
5. More time in the afternoon
6. More attention to specific research needs
7. Maybe it needed 2 days.
8. More dialogue / discussion
9. More participation and dialogue of the attendees
10. It was effective
11. I think it was too long and too demanding. I think it should have been more focused
12. Define better the suggested actions
13. Providing some explanation (brief) on the idea behind the software features
14. By a better definition of time needed for each session and through a better definition of the input sentences

9.3 The workshop follow-up

The workshop follow-up was not clear to all the participants, only 13 declared to have well understood the actions. Participants suggested to spread the results of the workshop, and some of them declared to be happy to participate in other MARINA meetings.



You will follow-up on the workshop's results by:

1. The MARINA platform
2. Company executives, partners and associations
3. Email (2 responses)
4. Website consultation, newsletter (if available)
5. Keeping updated and provide further contributes
6. By working on the development of Env. Educational Programme
7. Sharing with respective network
8. Reading reports
9. Disseminating methodology and actions

Which initiatives would be useful for the future in your opinion?

1. Diffusion of a detailed report about the meeting (3 responses)
2. Monitoring of the legislation about the topic
3. Discuss how concretely implement the action
4. New meeting between same participants
5. Further meetings
6. I would be delighted to participate in the future meetings (2 responses)
7. More workshops – seminars

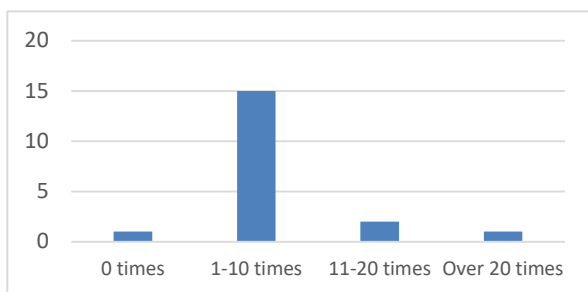
9.4 *Communication about the workshop*

How did you learn about the workshop?

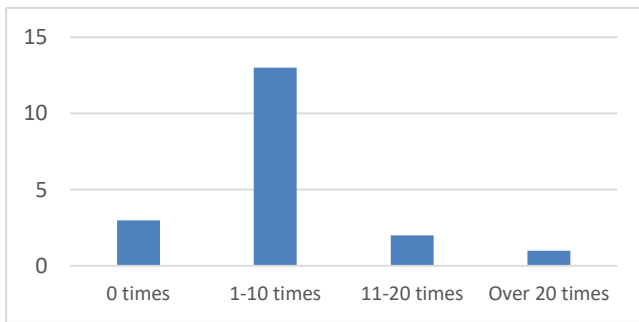
Most of the participants were involved through a massive mail delivery from the organizers.

E-mail	9
MARINA website	1
Newsletter	2
Other	2
Our website	1
Telephone	1
WKSP	2
Word of mouth	1

How many times did you visit the Marina website before the workshop?



How many times did you visit the MARINA Web Knowledge Platform before the workshop?



10 How the workshop was implemented

10.1 Recruitment of participants

Participants were recruited mainly through 3 channels: organizers sent more than 65 personalized e-mails (or telephone invitations) to already existing contacts, and the event was spread through the APRE newsletter and the ISPRA website. As for all the events of the MARINA project, a leaflet was prepared and the news was communicated on the social channels (Facebook and Twitter) and added on the MARINA site.

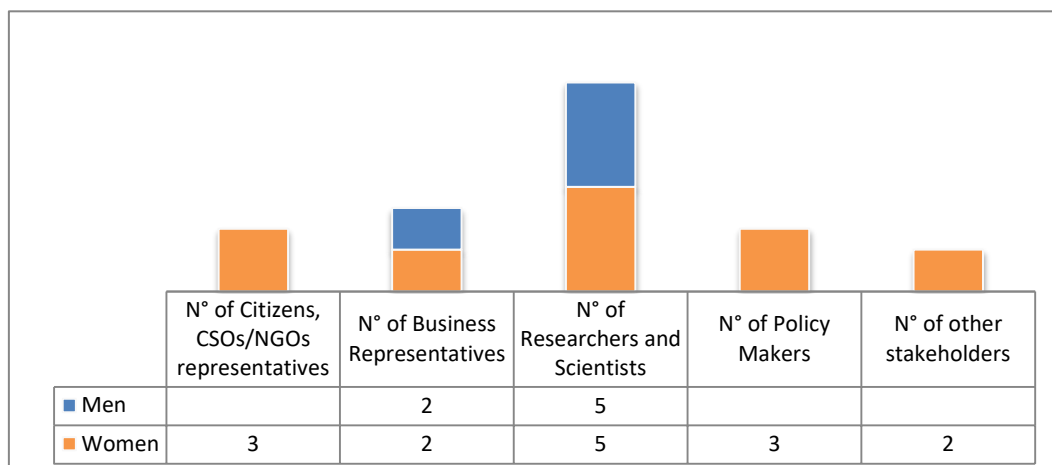
All partners of the MARINA consortium was asked to communicate to the participants of their local MMLs the possibility to be ambassadors of the workshop they attended. Two persons decided to come to the Venice Workshop, one from Italy and one from Belgium.

Several documents were prepared to clearly explain how to join the knowledge sharing platform and how to add their contributions, but several phone calls were necessary to accomplish this task. This can be explained by the general lack of time of the people that do not like to read or study instructions, but also by the state of the platform that was still not fully implemented.

10.2 Participant profile

The group was composed of a good mix of stakeholders very interested and involved in the topic. The majority came from the Veneto Region where the workshop took place, but some of them came from other Italian regions and one of the participants, the ambassador of another Marina Workshop, came from Brussels.

The group participated with enthusiasm to the discussion, which was intense but polite at all times. Representatives of business were the less involved in the discussion, despite the excellence of their



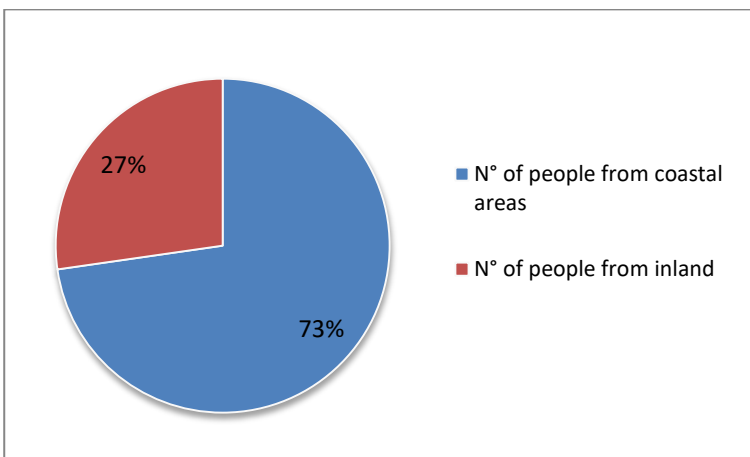
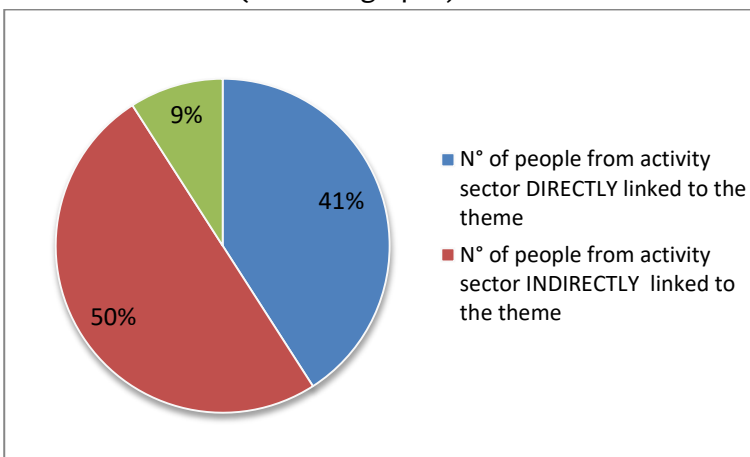
contributes: maybe they would expect a more pragmatic workshop. Despite our attempt to involve the same number of participants by gender, women were way more than men (15, 7).

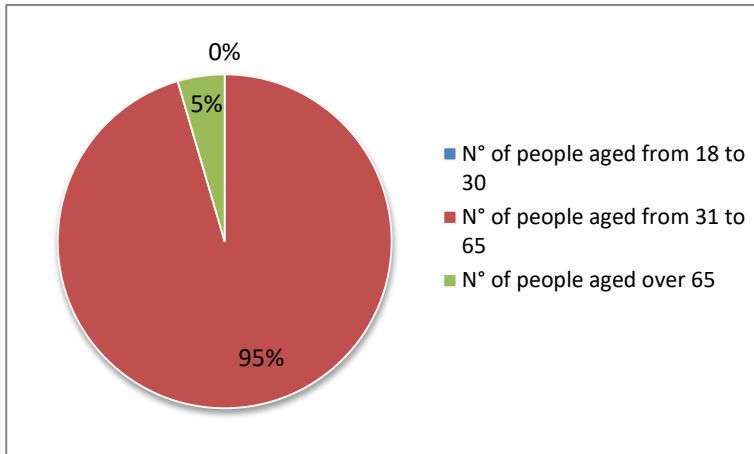
Moreover, the group had more researchers and fewer citizens than initially foreseen by the project (Table 4), but all the categories required by the project were represented.

Table 4 - Foreseen and actual composition of the participants

	% Foreseen composition	% Actual composition
Business representatives	20	18
Citizens and CSO's	44	13
Policy Makers	15	14
Researchers and Scientists	20	45
Other	1	9

Participants, which mostly aged from 31 to 65 years, were in great majority involved in the theme of coastal tourism, both directly and indirectly (81% in total) and quite obviously more than 70% of them came from coastal areas (see next graphs).





10.3 Description of the workshop implementation process

The location of the workshop was chosen considering the space available, the beauty of the structure and the facilities offered by the owner of the structure. Tables and chairs were disposed in a “U” shape as required by the facilitators, and seats were disposed of for facilitators and observers. The workshop was organized by the MARINA project’s partners Italian National Institute for Environmental Protection and Research (ISPRA) in collaboration with the Cyprus Neuroscience and Technology Institute (CNTI) that conducted the workshop through the Structured Democratic Dialogue (SDD) methodology.

The Venice workshop was the first of the international MML workshops of the project, and due to the high number of participants and ideas to be discussed, the planned agenda was impossible to follow. The methodology normally requires a minimum of two days of intense brainstorming, but as a project it was decided to limit the effort to one day. In order to overcome this change, the first part of the process (generating and collecting ideas) was conducted through an online tool (MARINA knowledge Sharing Platform) and by email. This process was not easy to finalize, and some of the participants concerned about the short time give to the discussion during the workshop.

During the workshop the streaming was not working properly: we had about 50 online contacts that would have followed the WS online and this feature should be assured in the next workshops (hint: the Wi-Fi password cannot be provided if the streaming uses the same channel).

11 Conclusions

The workshop topic was highly appreciated: we received many applications and joined the maximum number of participants allowed by the methodology. The methodology itself is very challenging but interesting ideas and solutions, based on the different experiences of the participants, were put on the table; a realistic roadmap to help a sustainable development of tourism was co-created and several interesting perspectives were collected.

We acknowledge that the time allocated to WS activities was not sufficient for all the phases to be properly accomplished. Accordingly, the clustering process was simplified as compared to original methodology. This revision in the process generated clusters from 3 groups that, being partially redundant, were grouped into major “group themes” by organizers (as a post hoc activity). Moreover,

due to time constraints, neither organizers nor participants had time to comment on the roadmap, extracting conclusions about the topic. This put some frustration on participants that would have appreciated a more exhaustive discussion at the end of the workshop. Moreover, during the WS, it was not even possible to start the definition of specific action and their SMART attributes. As already mentioned this phase was conducted online by some of the participants who volunteered to participate to this activity. However, a common discussion and synthesis from the whole group of participants on the SMART actions was not possible.

Owing to this experience, for the organization of the next set of MMLs we suggest, in the case a duration of 1 full day is considered, to make it mandatory to reduce the number of participants or the number of ideas to be considered at the meeting. A conspicuous amount of time should be foreseen at the end for a discussion among participants, organizers and facilitators about policy or practical implications of the roadmap, and to link the outcomes to the principles of Responsible Research & Innovation, a process that was conducted by ISPRA after the workshop.

12 Appendices

12.1 Appendix 1: Agenda of the workshop.

9: 00-9: 15 Registration and Welcome

9:15- 9:20 The MARINA project

9:20-9:30 SDD Methodology: what are we going to do today?

9: 30-10: 40 IDEA GENERATION PROCESS: explaining details, asking clarifications

10: 40-11: 00 Coffee break

11: 00-13: 10 GROUPING IDEAS: bottom-up clustering of ideas

13: 10-13: 30 VOTING IDEAS

13: 30-14: 30 Lunch buffet

14: 30-16.30 IDEAS HIERARCHY: creation of a road map

16.30-16.45 Coffee break

16:45-18.00 IMPLEMENTING: which actions are needed to reach the goal?

12.2 Appendix 2: A list of ALL submitted ideas with their clarifications

Information on n. of votes, Clusters or Theme groups are in the report tables.

Action Number	Title	Clarification
1	Raise awareness of existing legislations	A global lack of awareness of all actors of the tourism sector on the environmental legislation, as well as a lack of its related enforcement exist. The tourism sector stakeholders should then be better informed on the current existing legislation. More particularly: Inform all stakeholders, and in particular our citizen, on legislation so that they can make informed choices when consuming (such as the Mr.Goodfish program provides) and inform them of their legal right to participate in environmental decision-making processes at national and EU levels. o Target groups and roles: - Policymakers and implementers: inform citizens on actual and new law, and their right to participate, - CSO : keep inform and empower citizens, raise awareness on public consultation, - Citizens: target. o Related RII : Governance “ Public engagement
2	Educate stakeholders (policy makers, researchers, entre/intrapreneurs, workers, citizens, tourists) on civic duty and sustainability (economic, social, environmental) rather than on own private benefits	All people should be educated to respect other cultures and local environment. Tourists (from mass tourists to niche ones) and people working in the tourism sector are the first actors to be trained. Behavior of the workers in the tourism sector is a key aspect as they could represent the example for tourists, but workers - especially if they operate in bad working conditions - could be less committed, not controlled and not educated if they are hired for short periods and they are not provided with opportunities for growth
3	Increase the controls to avoid illegal practices of tourist settings on the coast, e.g. discharge of wastewater into the sea	A big problem, especially in some areas of the South of Europe, is related to illegal practices in tourist settings. In some cases, villages that have a small number of inhabitants during winter double the presence of people during summer. It is imperative to increase the controls done on illegal practices like discharge of untreated wastewater into the sea
4	Promote RRI processes able to introduce innovation in the shipbuilding industry, to reduce the impacts of sea transportation related to the tourism sector	The sea transport connected to the tourism sector generates impacts on marine waters, threatening their chemical and ecological state through multiple pathways (atmospheric emissions from stationary ships, losses of pollutants from paints and a variety of chemical products used in the shipbuilding) and jeopardizing the achievement of environmental objectives set up by the Water Framework Directive. Solutions to such issues may come from RRI initiatives aimed to introduce new products and practices of greater environmental sustainability
5	Measuring and monitoring tourism impacts	Achieving sustainable tourism is a continuous process that requires, among other things, to measure and monitor on a regular basis, the impacts brought by tourism on the environment but also on the economy, culture and society. In such a way it is possible for the destination to build an accurate picture about the level of sustainability of its tourism development and then to develop more effective tourism strategies for greater sustainability and competitiveness with a long-term vision. As a consequence it is important to promote among tourism destinations the implementation of measurement tools and indicators systems, starting from the initiatives already developed at international and European level, such as the UNWTO (see for example the Guidebook on Indicators of Sustainable Development for Tourism Destinations), GSTC (GSTC-Destination criteria), the European Commission (see ETIS – European Tourism Indicator System), etc. Measuring and monitoring impacts is important not only at destination level but also for tourism companies. At international and European level several reporting and certification systems specifically addressed to tourism companies (tour operators, accommodation, etc.) have been developed and promoted in order to allow tourism firms to assess their performance also in terms of contribution to sustainable development and to guide them in carrying out responsible actions.
6	Stakeholder participation in touristic planning	It could be possible to sensitize stakeholders all the yearlong and particularly during winters for a sustainable tourism, with participative policies at schools, local commercial activities, tourist agencies and so on. It could be possible, for example, to create natural itineraries for tourists with students, in order to underline un-massive attractions and to invest and promote (with direct facilities and/or tax ratios) environmental sustainable actions by sellers. Italian and, in general, coastal commercial activities are small or medium realities, so they could be interested to be involved in their territory management.
7	Introduce incentives and reward measures in the touristic areas that	In coastal touristic areas (where there is a large flux of tourists concentrated in few months) is important to know and quantify the real impact of tourism in terms of waste and damage to the environment and planning of practical intervention to

	actively sustaining marine and coastal environmental protection	reduce the same impact. Contribute to protect environment is possible, for example with the installation of a sufficient number of litter bins (or better waste compactors), introduction of walkways over the dunes, barriers around the most sensitive points of the coastal environment, such as Mediterranean scrub or other vegetation, installing of permanent mooring buoys in the sea, etc. The practical action proposed would be to incentive this type of intervention with some economic measures, for example more funding, in favor of Municipalities that use and introduce best practices in this field. The same strategy (e.g. introducing, in this case, tax reductions) could be applied to private touristic operators that provide the opportunity to reduce the impact of their customers: for example b&b, guesthouses and hotels that have containers for recycling in each rooms or shops that provide canvas tote bags, supermarket with waste compactors, etc. The idea would be focusing on rewarding measures for public and private subjects who realize best practice rather than only on policies based on sanctions for defaulters: reward those that contribute most to environmental protection, as well as to apply sanctions against those that threaten conservation.
8	The establishment of a novel partnership between private sector, public bodies and volunteers so that, in real life, all voices are heard and citizens' requirements for the sustainable use of their environment can fit policy needs and vice versa	Responsible and motivated volunteers can be involved in targeted programs of environmental observing. It is likely that citizens want to be involved in projects with great demands, for example frequent visits to distant sites or involvement in protocols that are complex and time-consuming. However the reliability of citizens' observations and how far their proposal can go to ensure themselves a sustainable use of their proximal natural capital could be a matter of an open discussion.
9	Enhance responsibility of tourism operators and tourists for future generation by economic incentives (pricing of natural resources, taxes etc.)	Why? Sustainability is based on justice also with respect to future generations, so long-term perspectives in policy-making are needed. Considering potential future impacts from unsustainable uses of coastal resources, the aim of conserving actual levels of economic and social well-being and environmental quality will be challenging in most areas interested by coastal tourism. Further to education and diversification of local economies (avoiding a touristic monoculture) economic incentives could be implemented for redistributing present day (sewerage discharge and/or treatment) and future (reduction of biodiversity) burdens among users and generations. The two ecosystem services approach could be used as a guiding principle for quantifying charges imposed by the use of common pool resources.
10	Building capacity in those involved in developing and implementing tourism strategies and plans to make them able to integrate and balance economic, environment and social aspects	The planners and policy makers in charge of managing the coastal areas and tourist destinations usually lack knowledge, capacity and tools to take into consideration environmental, economic and social aspects and apply an integrated coastal zone management approach that is fundamental for carrying out this task. Building this capacity is fundamental as well as involving all the stakeholders, from the business to the scientific world, in order to create the context for the strategies and plans implementation and support is also from a technological and financial point of view.
11	Simplify and unify rules to ease the construction of LNG/LPG filling stations for marine use. Prepare a new generation of technicians to manage the more technological gaseous fuels used in the marine field	The first Italian LPG filling station for marine, opened in Venice in 2010, has required several years of the bureaucratic path for obtaining all the needed authorizations and a consequent huge investment for his construction. The bunkering services to fill LNG on ships is a fast growing needs and today the service is operative in several European seaports in Germany, Holland, Finland and soon in Spain and U.K. But for making easy to such kind of ships to use such much more clean fuel, is now mandatory to have one only unified rule for at least all the EU countries, to make shorter, clear and with acceptable costs the realization of filling points for LNG. Related aspect to the arrival on the market of such ships and pleasure boats using such new much cleaner type of gaseous fuels like LNG and LPG, much more demanding – in term of technological equipment and safety issues, will be the availability of well trained professionals engineers and technicians. To properly satisfy such needs, EU has the duty to organize in short time the preparation and the certification of such kind of professional and expert engineers and technicians.
13	Effective communication against greenwashing	Effective communication is fundamental to make a clear distinction between sustainable maritime and coastal tourism and simple greenwashing actions. This is an opportunity that should be given to tourists: the opportunity to choose which kind of product and service they want to buy. But this is also an opportunity that managing authorities and institutions should take consciously, in order to protect their investments and to give value to their efforts.
14	Holistic, integrated, long-term wide scale approaches feeding sound and consistent local scale measures	Develop multilevel (from the strategic to the local level) / multi-governance planning and management tools, in line with ICZM-MSP principles, approaches, provisions. Threats and enabling factors have to be analyzed and should feed the planning and management effort, not to block initiatives, but to make them sustainable in time and to promote new ideas and better synergies among sectors

		of the coastal and maritime economy. A layer underlying this analysis should be a vision on how to tackle, again at different levels, the issue of adaptation to climate change in coastal areas. All this requires knowledge, in terms of: i) conceptual and methodological approaches; ii) knowledge of system functioning at different spatial scales and with time; iii) data and tools to support decisions
15	Limiting the impacts and challenges to the environment and social fabric of large cruise ships	As cruise ships get larger, along with the risks and environmental impacts in coastal zones, the economic interests grow too, making it increasingly difficult for other factors to be taken into consideration by policy makers. This has been the experience of Venice. More robust systems need to be developed to objectively combine an integrated analysis from the viewpoints of environmental protection, impacts on society, scientific and technical possibilities, economic parameters.
16	Improve the European quality of the environment as value to capture the growing rich market of Chinese tourism	Chinese traveling for tourism have grown at double-digit percentage rates since 2012. According to a Bank of America Merrill Lynch forecast, outbound Chinese travelers could number around 174 million by 2019, spending about 264 billion of US\$ annually. Chinese overseas travelers make up a sizable group of consumers, acclaimed as the world's largest, most favorable spenders, spending \$164.8 billion overseas in 2014, a fourfold increase over 2008. During recent years, China's outbound travel market has grown rapidly partly due to another emerging reason: the poor air quality in major Chinese cities. Chinese traveler tourists are now usual to have a "smog insurance" for who choose to spend holiday in Chinese cities, regularly affected by poor air quality. This is the reason why most prefer overseas destinations, in condition to grant better and great environmental conditions. "I feel great there just to go around in the sunshine under the blue sky" is one of the priority demand of the majority of such Chinese tourists, and Europe can have the answer to such demand.
17	Enhance the capacity building of public-private tourism-related stakeholders for a sustainable management of the coastal tourism maritime destination's cultural and environmental assets	Global changes of the last decade pose relevant challenges for the sustainable preservation of the cultural and environmental assets of the coastal tourism destinations. Public and private stakeholders and policy-makers must take immediate action to implement innovative policies to assure a balanced competitiveness, growth and sustainability of the maritime tourism sites. A key tool in this perspective is the development of a DSS (Decision Support System) that takes into account the most important factors of tourism attractiveness, competitiveness and sustainability identifying the dynamics of the coastal territorial assets (natural and cultural) that may be fostered in an approach of sustainable exploitation and in the perspective of facing the current global challenges. The DSS supports stakeholders and private operators in their strategic choices providing addresses and realistic strategies on how to connect entrepreneurial innovative ideas in tourism through a business ecosystem approach, balancing the massive tourism flows with the challenge to ensure sustainable use of the seas, including the sustainable development of marine areas and coastal regions, while revealing their economic potential.
18	Valorize the sustainability of tourist destinations	It is crucial to make the tourist destinations competing between them for a higher sustainability score, recognized by independent agencies. Something similar to the Blue Flag for shores. The sustainability should be measured through a metrics composed of different elements, resulting from a holistic approach, knowledge-based. This score should be presented in the tourist guides: both the consumers (the tourists) and the operators will be educated to look for a higher sustainability.
19	Optimization of dedicated labor market; optimize purchases (savings reinvested in environmental compatibility)	Not provided
20	Educate people to understand the value of resources	Recognizing the importance of recycling means giving the society an unprecedented tool for progress. Identifying clear and transparent rules, bettering the existent and implementing the gaps in recycling plastics can deeply support, among other things, a sustainable tourism. The same can happen with the resources in deep seas.
21	Implement the network of 'environment's angels'/'leaders to be' at the local level, starting from the youngest ages	How is the leadership process conducted for understanding the value, both social and economic, of resources? Which is the state of the art of the collaborations between the public and the private sector? What can be done more and what can be done better? From a researcher view in Crisis Leadership, I look with deep interest at the progress of the cultural awareness that can be channeled through the concept of sustainable tourism and the identification of a leadership channel to orient the effort to combine the respect of the environment together with the necessary economic impact.
22	Develop a communication strategy aimed at raising public awareness on maritime biodiversity to promote	The communication strategy has the goal to raise awareness of bio-diversity in a multi-sectorial perspective. It shall be carried out through a socially embedded set of actions focused on selected target groups. Target groups are defined based on

	change in awareness of the natural values (including ecosystem services for which Maritime Protected Areas have been set up) that leads to positive behavioral changes in tourism-related social, administrative and economic sectors	the statistical results provided, for instance by Eurobarometer “Attitudes towards Biodiversity” and the specific knowledge and skills for the local stakeholders. Selected target groups are: Primary, Secondary and High Schools (teacher and students), Fishermen, Maritime entrepreneurs, bathing facilities managers, lifeguards, employee in environmental sector, Tourist bureaus/office, touristic business operators, Local public bodies, NGOs with environmental purposes. The guiding idea is to combine, on one hand, cultural dissemination with scientific education and, on the other one, to translate the cultural capital of local stakeholders into active communication strategies with the aim of disseminating knowledge and raising awareness in the field of maritime biodiversity. The contents of all project activities will be strictly linked to the roles of: Nature 2000 and Marine Protected Area networks, of EU Biodiversity Strategy, Marine Strategy Framework Directive.
23	Enhance a multi-stakeholder dialogue	All stakeholders should work together for the tourism sector to be environmentally sustainable, and more particularly to reduce waste and plastic pollution. This is a critical issue, that the tourism sector’s stakeholders need to tackle. One privileged solution could be the development and implementation of a plastic bottles deposit’ system, that already exists in certain EU countries. These existing systems should be used as a model for further usage in Europe. o The identified stakeholders and respective roles are: • Industry/Business representatives: development of such schemes and users of the deposit, • Policymakers: supporting schemes • Citizens: users
24	Involve all possible stakeholders in innovative actions, take care of their expectations and agree on trade-offs, under the guidance of a super partes actor, ethically exemplary	Innovative actions should foresee an improvement and all stakeholders should benefit from this, even if at different stages and with different perceptions. Taking care of expectations can help avoiding that any actor will be disappointed in the result and will help different people to feel fully engaged in important decisions that will be affecting their lives, towns, etc. We know that cruising is high-value tourism activity that is having great success. Being selected as ‘home port’ is considered a privilege and local economy strongly benefit from this, but the price to be paid in term of pollutant hazards is still rather high. Technological solutions are ready to be implemented both on new and existing ships as well as in ports infrastructures, but it is a big endeavor to make it happen because of limiting regulations and unwillingness. Research and innovation topics should be financed following precise policy priorities and industrial needs, but in a coordinated way like puzzles pieces. Evaluators of RDI proposals should consider not strictly the technological progress and the technical validity but the overall impact and this would suggest that it would be better a multidisciplinary group of evaluators including someone with a deep knowledge of the territories specializations and priorities. Finally, since stakeholders are many and they use different languages, it could be impossible to come to trade-offs without a major actor acting as guarantor.
25	Develop a Europe-wide educational - Programme on main marine environmental issues	With knowledge comes responsibility, therefore an environmental education Programmes must be developed, in joint collaboration with different stakeholders, to inform both tourists, and those working in the tourism industry about main marine environmental issues
26	Reduce impacts of the seasonal fluctuations in tourists and visitor numbers to marine destinations, spreading them out over the year, through the promotion of a wider range of resources and offerings	Anthropogenic pressures and impacts on marine waters linked to tourism flows – represented by loads from wastewater treatment, maritime transport, etc. - are highly dependent by tourism peaks, which follow seasonal patterns. Such pressures could be effectively mitigated through solutions able to spread out tourism flows over the year. Initiatives aimed to change tourist flows dynamics, (e.g. promoting a greater number of environmental, social/cultural and recreational resources and encouraging their use throughout the year) could have a key role to make the tourism sector environmentally sustainable.
27	Communication and education campaigns	One action that is needed for making tourism more sustainable is promoting on a regular basis communication and education campaigns in the destination targeted to tourism companies, local residents, tourists and visitors in general in order to increase their awareness about sustainability and to change their behavior. These campaigns could address several themes such as natural and cultural attractions in the destination that are susceptible to degradation, alternative itineraries (in order to better distribute tourist flows) and responsible behaviors (such as carrying a separate collection of waste, using public transports for getting around the destination, reducing water consumption, etc.). As regards to this last topic, it would be useful to transfer the values and practices embraced by responsible tourism.
28	Promote diffuse tourism	It should be really important to promote local tourism instead long distance one, and marketing plans should be directed to create an idea of localities as "less known = cooler". It means that people will be interested to discover places and not concentrate in the coolest place as was in the past (see the examples of Jesolo

		beach, Rimini and so on). Moreover, it promotes an intimate relationship between tourists and the places they have "discovered", it promotes distributed services and low economical place leaving (most of them are rural or related to fishing). I'm thinking, for example, to the Po delta, with the possible reevaluation of rural and historical buildings and the "Albergo Diffuso" for cyclists or nordic walkers.
29	Promote programs of environmental education for students and specific categories of tourists and operators	Increase knowledge about eco-systemic dynamics of the marine and coastal environment would be very important. Also, it's very useful to increase general awareness about the several impacts on the marine environment of anthropic activities. This action should be directed first towards the young generations (e.g. with specific programs of environmental education for students of primary and secondary school). Similar activities could be designed and implemented also to involve specific categories of tourists, as nautical tourists or recreational fishermen (e.g. with a prevision of the obligation to pass an exam about these themes for obtaining a nautical license or fishery authorization). Knowledge is the base for the environmental respect and the improvement of awareness is fundamental for spreading correct behaviors towards the marine and coastal environment and its components. I believe that this type of cultural action would contribute greatly to making the tourism sector environmentally sustainable.
30	Specify conditions to engage citizens beyond the collection of observations on their environment and to empower them in decision-making and governance	As a citizen, I am interested in the impact that any anthropic activity might have on the health of the environment where I live. The word environment derives from the French "environ" which means around, also in Italian "ambiente" derives from Latin, "ambiens" which means to encircle. Therefore, the environment is literally the surrounding of a citizen. As such, citizens can be considered as the best observers of their environment and have the potential of strengthening public monitoring programs. Perhaps both economic and logistic factors prevent scientists and institutions from generating the volume of data (both large extent and fine resolution spatially and temporally) that is required to envisage the impact of anthropic activities on the health of coastal, urban, rural or natural areas.
31	Start considering climate resilience when planning or re-organizing structures used for coastal tourism (buildings, harbours, etc.)	Climate change impacts in coastal areas will cause more damages in areas where buildings and hard structures are situated close to the actual coastline. Many coastal resorts (example Jesolo) might become unsustainable also from an economic point of view (increasing expenditure on beach replenishment and erosion) leaving high burdens to local communities.
32	Support the utilization of LPG as very clean fuel for boating tourism	Since 2013 EU has issued new rules to strongly reduce the emissions of any kind engines used on pleasure boats. An alternative to the LNG solution, that due the complexity and the high costs is suitable only for large vessels, is the today possibility to utilize LPG as ultra-clean fuel for recreational boats up to 24 meters. To be evidenced LPG as is a naturally occurring by-product of natural gas extraction (70% and this means that also this clean fuel can be called "natural LPG") and crude oil refining (30%), and consequently, we either use it or it is wasted
33	Better and shared data and information to inform decisions	Data and information availability is still one of the enabling conditions for sustainable coastal and maritime tourism.
34	Clarify and establish baseline parameters and conditions for 'sustainable' tourism	Sometimes "sustainable" tourism in less crowded coastal areas is proposed as an alternative to reducing the concentration of mass tourism. This can be dangerous if tourism management plans and associated laws like traffic control, land use etc. are not adequately implemented. Rationalization of existing regulations among different institutional bodies needs to be reviewed before further layers are added and other types of use introduced in coastal areas.
35	Encourage knowledge transfer	Encourage knowledge transfer: This can be led by imagining, sharing and testing ideas together while answering each other's needs and concerns, through "Local Living Labs" for instance. "Local Living Labs" are opportunities for researchers, industry, and policymakers to work together at local level to share ideas and look for solutions with citizens. <ul style="list-style-type: none"> o Target groups and roles: <ul style="list-style-type: none"> - Citizens: share their questions and ideas, - Researchers and Industry: analyses these questions and ideas, - Students and Industry: common workshop, learn while contributing, generate ideas - Local media: raise the activity profile and work on solutions, - Policymakers: analyses and search solutions with the others. o Related RII: science and education, public engagement, environment
36	Upgrading sewage network and wastewater treatment plants in coastal areas, where the tourism flows generate significant impacts	Wastewater treatment plants in coastal areas are point source pressures affecting marine waters through the discharge of loads, which depend on the fluctuation of tourists on the coast during the year. Actual treatment systems may not be able to cope with peaks of tourist loads at certain times of the year, and the trouble becomes even more serious in areas where other pressures coexist and impacts are amplified. One solution could be to improve sewage networks and treatment systems where the summer peaks linked to tourism generate significant impacts

37	Road networks in a buffer region	I think that improving road networks and transportations should be strongly recommended, as important as to invest to attractions in a buffer zone around the most reached coastal localities, in order to redirect tourists to a differentiated touristic offer. Such hypothesis is strongly related to urban planning and building facilities at a national level. Long queues with consequent stress for peoples and traffic pollutions should be avoided, and it could be substituted by alternative public transports and similar relaxing places, out of canonical destinations along the coastal edge (where parking is limited and traffic flow cannot be redirected). Tourists spend a lot of time and money for their holidays, so it is essential that they consciously feel free to choose how to spend their time, and it could be efficient to offer them available local alternatives (for example, for families, specific for students, and/or for groups).
38	Foster to use very clean Natural Gas as fuel for cruising ships	The fast-growing tourism on cruising ships is becoming a very great challenge for the environment, as the heavy pollution that such giant vessels has in the seas and in the air. One only modern large cruising ship, that usually utilizes HFO – Heavy Fuel Oil – as fuel for all the needed power on board, every day can pollute the air more than 13 - thirteen - millions of cars and dump in the water more than half million of liters of human sewage! LNG – Liquid Natural Gas – has started to be used as ultra-clean power source for cruising ships and must be supported by the EU authorities as the first important step to strongly reduce the environmental impact of such kind of tourism.
39	Generate a campaign where messages are developed and shared making the problem tangible for all concerned stakeholders by translating facts and figures into something simple and impactful	If plastic pollution / marine litters are considered as a critical issue for a sustainable tourism activity, a powerful message could rely on “visualizing the damage, making the problem tangible and easy to quantify”. In this respect, the image’s use of a fish mouth filled by - cigarette butts could be quite stunning. o Target groups and roles: - Researchers and scientists: knowledge initiator, - CSO: designers of the campaign, - Policymakers: campaign endorsers - Industry: campaign vector, - Media: channel of the message. o Related RII : public engagement, environment
40	Recycling to other production of waste materials (carpet; 3-5% per annum of restyling investment)	Not provided
41	Create a system similar to car-sharing platforms where a smart co-mapping program allows people to plan a sustainable mobile tourist trip by connecting coastal towns and islands through hop-on-hop-off practices. In addition, the smart web-based mapping system will host additional information: bio-diversity records, cultural heritage, etc.	Coastal cities and islands are usually the targets of intensive and high-impact tourist flows, mostly concentrated in peak tourist seasons. Accordingly, material infrastructures are heavily shaping the urban landscape although they are fully exploited for a short period of the year. This is mostly true for the land-based infrastructures for mobility for tourism in coastal towns and islands, which are largely “terrestrialized” and depending on motor vehicles: motor-bikes, cars, mini-buses, etc. I believe it takes a joint action involving public and private stakeholders (including NGOs) to support the development of strategies of integrated sustainable mobility, namely diversified used of boats, bikes and electric car sharing. The goal is to create regional based systems of sustainable mobility connecting coastal towns and islands that allow hop-on-hop-off practices. ICT is a crucial part of the above-mentioned practice because it brings actively people together and enable smart information sharing. As a result, we reduce the impact of the environment and the overall ecological footprint. Plus, using the same web-based technology for interactive mapping we can use the same tool to record important geo-located information such as biodiversity and cultural heritage.
42	In order to be environmentally sustainable the tourism sector needs to be identified through clear parameters that can be easily understood by the general public	The general public should be able to understand easily the difference between environmentally sustainable tourism and “normal” tourism. Clear parameters can underline which are the characteristic of environmentally sustainable tourism.
43	Assess impact of tourists on society and environment, with a specific focus the built environment and on land-use	Economic, social (including cultural) and environmental impacts need equal consideration and assessment when addressing impacts derived from tourism. The impacts on these three pillars can be understood through a specific lens: that of an analysis, which can focus on the built environment, i.e. the allowed uses of buildings, and on land-uses. The strong connection among these three pillars can be described as opportunities and/or threats, with implications on the well-being of the socio-ecosystem.
44	Establish discussion platforms involving on a stable basis the different stakeholders of the tourism sector	The sustainability of the tourism sector passes through the involvement of the different stakeholders that have to share visions and strategies for their actual implementation. To this purpose, it is important to facilitate the dialogue among the different parties, systematizing the exchange opportunities and the process to arrive to define plans and strategies for sustainable tourism development. This

		should be done both at local level and at higher scales as the sustainability of the sector depends on the different scales.
45	Effective measurement of pedestrian tourist fluxes in high density destinations	Not provided
46	Agree on trade-offs and support them	Not provided
47	Foresee the guidance of a 'super partes' actor, ethically exemplary	Not provided
48	Develop Tourism Business Ecosystems for a better understanding of stakeholders relations reaching sustainable solutions	Not provided

12.3 Appendix 3: A list of text and materials (in Word, Pdf or JPG format) that you have produced and used to recruit participants. E.g. the invitation letter, articles for dissemination, press releases, posters, announcements on the website, on social media etc. Provide links to Google Drive where you have uploaded them. Also, please upload them to your event section on the WKSP.

- Invitation letter and leaflet
- Preparatory document on hot topic
- Guidelines to add contributions in the KSP
- Certificate of attendance
- USB card with hot topic and RRI related documentation
- News on the ISPRA website
- Posts on FB
- Web page on the MARINA site

12.4 Appendix 4: A list of audio-visual material and tools that you produced and used during the MML workshop: photographs, video recordings, screen shots and other. Also, please upload them to your event section on the WKSP.

Video-interview with some of the participants about how RRI is related to the hot topic:
<https://youtu.be/S8lsOH9ZgAo>