"MARINAzine. Our engagement with the Ocean" is the official, four-monthly issued newsletter from the Horizon 2020 MARINA Project. Each MARINAzine issue aims to deepen the analysis of one of the six dimensions of Responsible Research and Innovation when applied to marine and maritime issues, namely: Public Engagement; Gender Equality; Science Education; Open Science; Ethics; Harmonious Governance models. It is developed and compiled with contributions from the MARINA Consortium Partners and relevant stakeholders.

Realized by APRE. Contacts: marina@apre.it.

This project has received funding from the European Union’s Horizon 2020 Research and Innovation Programme under GA No. 710566.
We live in an increasingly complex world – a world that also faces major global challenges. In order to be able to understand and interpret the information around us, we need knowledge and skills to access and evaluate it in order to be able to make different types of decisions. At the moment, Europe faces a shortfall in science-knowledgeable people at all levels of society. This is a good time to expand opportunities for science learning, in formal, non-formal and informal settings. Evidence shows that European citizens, young and old, appreciate the importance of science and want to be more informed, and that citizens want more science education.

Over 40% out of European citizens believe science and technological innovation can have a positive impact on the environment, health and medical care, and basic infrastructure in the future. Therefore, collaboration between formal, non-formal and informal science education providers, enterprises and civil society should be enhanced to ensure relevant and meaningful engagement of all societal actors with science and increase the uptake of science studies, citizen science initiatives and science-based careers, employability and competitiveness.

Science education in the Swafs-programme

In Horizon 2020 “science” is interpreted as STEM (science, technology, engineering and mathematics). Those involved in the platform believe that sustainable development and other global challenges, for example, are knowledge areas that are important in other disciplines too. Therefore, the term and the focus of efforts should be broadened to include all the sciences and basic scientific literacy.

Innovative formal and informal science education teaching and learning is important in order to raise both young boys’ and girls’ awareness of the different aspects encompassing science and technology in today’s society and to address the challenges faced by young people when pursuing careers in Science, Technology, Engineering and Mathematics (STEM).

In order to make science education and careers attractive for young people, a sustainable and cross-cutting interaction between the relevant actors in the field is crucial. More specifically there is a view for:

- stimulating informal STEM learning;
- stimulating so called “open schooling” i.e. collaborations between formal and informal learning, for example, involving schools, civil society and business;
- adopting certain pedagogical teaching methods, such as Inquiry Based Science Education, which is considered to increase young people’s interest in STEM;
- supporting certain events aimed at spreading knowledge and interest in science and research among the general public.

To tackle global challenges, fulfil ethical requirements and safeguard sustainable development, it is also important for citizens to be engaged in research and innovation. In order to be able to do this, they require basic knowledge about what science is, as well as facts on important subjects. Having a basic understanding of scientific concepts is known as “scientific literacy”.

Stimulating the public’s interest in science, research and innovation and increasing citizens involvement in research is an important area. The long-term nature of the work means that children and young people are a particularly relevant target group.

Expected impact:

- Develop scientific citizenship by promoting innovative pedagogies in science education, attracting more young people towards science, with a special emphasis on girls, and addressing the challenges faced by young people, in pursuing careers in science, technology, engineering and innovation;
- Develop responsible research and innovation in higher education curriculum;
- Ease the access to scientific careers by increasing the service level of the EURAXESS Services Network.
The scientific research is more and more addressing a holistic and multidisciplinary approach in the perspective of the Responsible Research and Innovation, aiming to anticipate and assess implications and societal expectations and to foster the design of inclusive and sustainable research and innovation.

The concept of RRI is relatively recent and it is part of the Europe 2020 strategy with the objective to promote a vision for a stronger collaboration among social, natural and physical scientists, societal actors and citizens in order to achieve a wider dimension of science and innovation and improve the role of society in environmental preservation.

Many researches, European initiatives and projects in different domains and contexts already started to address RRI principles and themes, but in the last years a wide discussion is arising on these topics that requires to systematically share information and knowledge.

The multi-conference overall aim is to establish, organise and activate a Responsible Research and Innovation (RRI) community which involves scientists and societal actors working together during the whole research and innovation process, with the common goals of aligning both the process and its outcomes with the values, needs and expectations of the society and integrating citizens visions, needs and desires into science and innovation.

The annual multi-conference is the best occasion to reach and federate diverse targeted RRI groups and to discuss case studies and experiences on RRI principles. These conferences are launched also for reinforcing the RRI community identity. Case studies and experiences will be collected and presented in the conference proceedings so providing an overview of several cases and experiences on Responsible Research and Innovation performed in several past and running projects on RRI.

The multi-conference is organized in six conferences:
- Co-Create! - Co-creation of curricula, tools and educational scenarios for building soft competences for personal development and employability
- The Young Engaged Researcher: Ideas, Experiences, Reflections (YERR 2018)
- Responsible Research and Innovation: the challenges of the Information and Communication Technologies (RRI-ICT 2018)
- Responsible Innovation in Sustainable Ecosystems (RISE 2018)
- Towards RRI Practices and Policies (TRRIPP 2018)

Call for papers open. Submissions must be in an electronic form as PDF format and should be uploaded using the EasyChair system. The submitted paper should be at most 10 single-space printed pages. (Please use the following templates to generate your PDF: MS Word).

Submissions will be peer-reviewed by at least three peer reviewers. After the preliminary notification date, authors rebut by evidence and arguments all reviewer inquiries and their comments. Based on the rebuttal feedback, reviewers notify authors with the final decision. Selection criteria will include: relevance, significance, impact, originality, technical soundness, and quality of presentation. Preference will be given to submissions that take strong or challenging positions on important emergent topics related to Responsible Research and Innovation. At least one author should attend the conference to present the paper.

The Conference Proceedings will be submitted to Springer to be considered in “SpringerBriefs in Research and Innovation Governance” series as in the edition of the RRI-SIS2017.
Summary

1 Opinions

1.1 Connecting people to their oceans: engaging and empowering Europeans to become ocean literate
by Olga Mashkina, Pierre Strosser, and Eleonora Pantò, ResponSEAable

1.2 Science Education: which is the role of creativity to engage citizens with science?
by Cristina Paca, Ecsite - The European Network of Science Centres and Museums

2 RRI Stories

2.1 Embedding RRI in science education: the HeiRRI Project story
by Nuria Saladié, Project Manager HeiRRI Project

3 Voices from stakeholder

3.1 Renewable energies from the sea. An interview with Gianmaria Sannino, ENEA at MARINA Workshop in Rome
by Chiara Buongiovanni, APRE

3.2 Science Education: takeaways from a policy survey
by Niamh Flavin, SmartBay and Francesca Ronchi, ISPRA

4 MARINA Highlights

4.1 First glimpse of the MARINA RRI Roadmap
by Xenia Theodotou Schneider, XPRO Consulting Limited

4.2 Inspirations from Denmark: which factors make citizens more likely to get involved with science?
by Mette Mechlenborg, Aalborg University
Connecting people to their oceans: engaging and empowering Europeans to become ocean literate

by Olga Mashkina, Pierre Strosser, and Eleonora Pantò, ResponSEAble

Improving Ocean Literacy in all components of European society is becoming major challenge to foster behavior changes expected from all actors of blue economy.

No matter where they live, Europeans are connected to the ocean. They go there to fish or on holiday, they are linked to it for energy issues or transport. At the same time these human activities produce pressures that can cause ocean health degradation. These human-ocean connections touch the lives of the people who live along coastlines and make their living from the sea, and still - even if they are living far from the sea - there is high chance that they have responsibility in its state.

How can we encourage Europeans to take a closer interest in their seas and to treat them with greater respect? In order to do effective ocean literacy we need to go beyond traditional approach which targets mainly education in schools. We need to include all other actors, who (directly or indirectly) can make a change. The questions we have to answer are the following:

- Who should be targeted?
- What knowledge do they need?
- How we should communicate it?
- What are the conditions for translating “better knowledge” into acts?

ResponSEAble project funded by H2020 (www.responseable.eu) focuses on these questions and develops a framework for effective and dynamic European ocean knowledge system that contributes to raising awareness on everybody’s responsibility and interest in a healthy and sustainable ocean. It covers all European regional seas: Baltic, Black, Mediterranean, North seas and the Atlantic Ark.

The project identifies links between ocean preservation issues in Europe and the economy as a whole in order to better understand the links between European inhabitants and European seas.

By generating greater public debate and knowledge, ResponSEAble project, intends to support all sectors of European society to develop a more informed and responsible attitude and help secure healthier and more sustainable seas.

The ResponSEAble project addresses different facets of the “Who” question relevant to the development and dissemination of ocean literacy “products” and strategies, as a means of limiting risks that key messages are being ‘lost in translation’. In particular, it maps stakeholders of the value chains for identifying “who matters” in solving key marine issues.

For any target group, we need to understand what they already know about the human-ocean relationships, and which knowledge, they might need to have.

It is very challenging to identify actors who “most matter” in solving a marine problem, and who could be targeted by Ocean Literacy initiatives. In some cases, the combination of actions targeting different (all?) actors connected to a problem is the recipe of success.

Knowledge is not the only thing that in the end triggers behavior change: often, other factors, such as social pressure, emotion as well as economic factors come to play. However, it makes a big difference the way we communicate and engage with different actors and which channels do we use.

For engaging and empowering relevant actors to start acting as “chagemakers” we used the power of storytelling, by creating six Key Stories. The Key Stories drive the development of the Ocean Literacy Tools (OLT) for each target audience. These include films and film making competitions, cartoons, a serious game, learning materials for both children and professional actors, as well as interactive platform and data visualizations.

In development of the OLT we adopt the Living Lab approach by involving different stakeholders (policy makers, professionals, teachers, experts) starting from the design phase to better fit their needs, expectations and future use. As a part of a process we also perform effectiveness assessment of the OLT, which are then further improved and prepared for a wider uptake.

Engaging users, policy makers and different networks in this process is very challenging, but if in doing so we find a way to reach ‘right’ people with the ‘right’ messages via ‘right’ channels – we can succeed in getting our messages across to people who need to be ocean literate, and act responsibly towards our oceans, especially in a world where we all have no time while facing so many opportunities.
Science Education: which is the role of creativity to engage citizens with science?

by Cristina Paca, Ecsite - The European Network of Science Centres and Museums

This opinion piece is based on Ecsite’s experience in the H2020-funded Sea Change project and draws on the work of project partners and collaborators.

Creativity is, together with critical thinking, one of the central values our network aims to foster in European society. It is reliably listed as a 21st century skill, deemed essential to meet the needs of society and the challenges ahead. Renewed attention for creativity is also part of a broader trend of understanding and connecting with the cognitive processes that drive engagement and learning.

Creativity requires imagination, flexibility and the willingness to go on less-travelled routes to connect citizens and science while generating or recognising ideas, alternatives or possibilities that may be useful in solving problems from new perspectives.

Citizen engagement with science has provided fertile ground for experimentation with creativity; examples include co-creation initiatives between citizens, educators and science communicators or the increasing popularity of design thinking, start-ups and incubators.

The Sea Change project stands out as a project that leads by example in the context of creativity in marine education and engagement. One of its essential features is experimentation with 5 Sea Change Co-Creation Principles for Ocean Literacy; it is no surprise that creativity made it in the top five! The “Creative Principle” has a simple and powerful message: “Find imaginative ways to manifest solutions with stakeholder and target groups”!

Given the tight competition for citizens’ attention, Sea Change approaches needed to be attractive and motivating as possible, without shying away from making engagement fun in creative ways. By introducing elements of imagination and innovation, the Creative Principle encouraged a move away from serious, moralising calls to action and towards compelling new visions and alternative, more sustainable behaviours towards the Ocean.

Sea Change project partners and Ecsite members experimented with these principles in a range of engagement and educational activities. Creativity is evident in the vast array of tools and approaches selected or specifically developed to share the Ocean Literacy message with citizens, in terms of different media, hands-on activities and ways to connect the ocean with people’s daily experiences related to food, leisure or health.

We paraphrase just a few remarks Ecsite members made about the benefits of creative solutions:

- Experiment – not all ways are right, but you will not find it unless you try
- Be open to potentially challenging situations in your organisation – they can help find great innovative solutions
- Don’t hesitate to play with ideas to get around the issue of limited finances – there is always a way to do something engaging for a reasonable amount of money
- Invite audiences to less usual settings and take them out of their comfort zone – it works very well both in terms of content as well as for the successful marketing of events

One consistent observation is that co-creation and collaboration are particularly conducive to fostering creativity. As one member put it, several heads are better than one: “Our co-creation group was helpful in discussing creative matters and resulted in imaginative solutions for the design and visuals of our educational activities.” Creativity thrives in co-creation conditions and, in turn, strengthens the co-creation process, just as creativity enables innovative engagement with science and is, in turn, fostered by such engagement.

To find out more about the Creative Principle and be inspired by a list of concrete examples where it is at play, consult McHugh, P., Domegan, C., Devaney, M. and Hastings, G. (2015) A Set of Sea Change Guiding Principles and Protocols, EU Sea Change Project.

To explore developing trends in education and society, Maria Xanthoudaki’s “Inquiry, stretched: A new approach to education and learning”, published in Spokes - the Ecsite online magazine, is a thought-provoking read.
Embedding RRI in science education: the HeiRRI Project story

by Núria Saladié, Project Manager HeiRRI Project

The HEIRRI project (Higher Education Institutions and Responsible Research and Innovation) is an initiative funded by the European Commission that wants to integrate the concept of “Responsible Research and Innovation” (RRI) within the education of future professionals involved in the research and innovation system, in order to promote its alignment with societal needs, values and expectations. HEIRRI understand RRI as a transformative, critical and radical concept, although also considering the six key aspects identified by the European Commission (public engagement, gender, open access, science education, ethics and governance).

RRI can potentially make research and innovation investment more efficient, while at the same time focus on global societal challenges. That is why it is important to learn as early as possible the skills and tools to incorporate RRI as a regular part of the scientific professional practice. The impact of HEIRRI is expected to be a greater social involvement of the higher education institutions and their role with and for society, and also to have future researchers and innovators with the tools, skills and qualifications to truly engage with society.

HEIRRI has done a thorough State of the Art Review and has published a Database with 23 exemplary cases of RRI teaching. Results from the Review and Database are the basis for the training programs on RRI that have been developed, which are complemented with specific materials addressing different educational levels (bachelor’s, master’s, PhD, MOOC, Summer schools, train-the-trainer, secondary school teachers). The methodologies used are innovative and participative (following a “Problem-based learning” approach), and are presented in multimedia formats. Strong plans of internationalization and communication guarantee the future use of the materials around the world.

Together with the 17 pilots organised by the HEIRRI team among Pompeu Fabra University (Spain), University of Bergen (Norway), Aarhus University (Denmark), University of Split (Croatia), and the Institute of Advances Studies (Austria), other institutions have also participated in 22 pilots organised around the world. Universities from Algeria, India, Brazil, Mexico, Bulgaria, Bosnia-Herzegovina, Lithuania, Germany and Spain have tried the programmes and materials in their own contexts and have already given feedback to the consortium. Results from the testing will be taken into account to improve the final version of the training materials. All HEIRRI results have been shared on open access in the RRI Tools platform (link: www.rri-tools.eu/heirri-training-programmes).

The HEIRRI project has a total duration of three years (Sep 2015 – Aug 2018). It is coordinated by Pompeu Fabra University (Spain), together with 8 more European institutions: University of Bergen (Norway), Aarhus University (Denmark), Institute for Advanced Studies (Austria), University of Split (Croatia), the European network of science centres and museums Ecsite (Belgium), “la Caixa” Foundation (Spain), the network of universities ACUP (Spain), which chairs the Global University Network for Innovation, GUNi, and the private company Innovatec (Spain).
Would you briefly introduce yourself?

I am the head of the Climate Modelling Laboratory and Impacts of ENEA since 2015. I’ve more than 20 years of experience in climate and ocean modelling. In particular, during the last years, I worked in the field of regional climate modelling and ocean energy. I was involved as PI and WP leaders in many European and National projects on climate change, oceanography, and ocean energy. I am the Italian representative at the Working Group “Ocean Energy” of the EU Strategic Energy Technology Plan. I am in the scientific committee of the Joint Program “Ocean Energy” of the European Energy Research Alliance (EERA). I am also a member of EuroGOOS, EERA (European Energy Research Alliance), and in the scientific committee for ECRA (European Climate Research Alliance) and Med-CORDEX (Mediterranean CORDEX initiative). I have published more than 60 papers in SCI journals and books and contributed to several technical reports and presentations at international conferences.

Why do you think the RRI perspective is important in your work?

In the ocean energy sector, Italy has made great steps forward in both research and device implementation, and it has by now acquired a prominent position among the international insiders. Targeted policy interventions and investment would now fully disclose the potential offered by the ocean energy sector in terms of economic growth, high-skilled job creation and strategic positioning of the Italian industry in the competitive global market. However, to achieve an effective policy action, it will be necessary to involve at an early stage of the process citizens, environmental associations and energy stakeholders, both from Large-Enterprises and SMEs. By leveraging on the vitality and creativity of a well-established community of actors: researcher (including social science), non-profit and non-governmental sector, environmental associations, citizens, public and private sectors, such policies would support the full development of the ocean energy sector. The reason for such broad engagement is that the interests and values at stake are multifaceted, possibly intertwined although often competing, so that the decision process must be fully participatory, achieving the best balance between all the goals and constraints.

Since the MARINA workshop has taken place, which emerging issues and stakeholders would you point at as the key ones in relation to the hot topic discussed in Rome?

In general, the discussion with the various stakeholders present at the MARINA workshop was very interesting. In particular, I found the interaction with people from environmental associations particularly stimulating. They stressed the importance of taking into account environmental/ecological impacts already at an early stage of the design of new wave and tidal conversion devices.

Moreover, all the stakeholders dealing with the development of ocean energy devices raised concerns about the authorization procedure required for installing their device off-shore (including those at a prototype scale!). They stressed that the time necessary to obtain authorizations is excessively long and the process to obtain such permissions is not well defined.

According to your experience, to what extent has the MARINA workshop been successful in strengthening the linkage between policy, RRI and citizen awareness?

As far as I know the MARINA workshop was the first National meeting that facilitated the exchange of information among a broad range of stakeholders operating in the field of marine renewable energy. I also found the methodology applied during the different phases of the workshop to facilitate the interaction between the stakeholders particularly effective.

Do the exchanges with other stakeholders you had at the workshop somehow produced an impact on your organization activities?

Definitely yes. After the workshop I contacted some stakeholders for a further exchange of ideas and comments on the state of marine energy in Italy. I invited some of them to actively participate in the initiatives promoted by PELAGOS, the ongoing InterregMED project focused on the creation of the first Mediterranean technological cluster for the promotion of marine energy at Mediterranean level.

... did you enjoy the MARINA workshop?

I very much enjoyed attending the MARINA workshop. The round table discussions were really valuable and some of the stakeholders I wished to speak to were there.
One of the key uses of Marine Knowledge Sharing Platform is to serve as a knowledge broker bridging the science-policy gap. Building this connection requires a better understanding of policy-makers’ awareness and engagement with Responsible Research and Innovation, which obstacles may exist in incorporating them into the policy-making process and what they perceive are the needs and benefits of their full application. We investigated this through a series of surveys carried out over a four-month period at the end of 2017. A three-pronged approach was utilized: an online questionnaire with closed answers, an open face-to-face interview and the online interactive dialogues hosted directly on the MARINA Platform in which a dialogue between citizens and a selected policymaker were facilitated.

The survey engaged a total of one hundred and twenty-two policy-makers and ten citizens. Policy makers from sixteen different countries took part over the three activities, with twenty regional, sixty-six national, six international and ten from countries not represented in the MARINA project.

Overall the survey revealed a positive predisposition towards Science Education across all participants, but over half of respondents indicated that their organizations carried out a low percentage of projects or activities that delivered educational resources. The most frequent group of barriers identified by the participants was related to a strong need for investments in time, resources and skilled personnel.

Indeed, interviewees were fully aware of the benefits of a better implementation of Science Education in the policy process such as a better awareness in citizens about science, of course, but also their increased capacity of judgement and criticism - which could lead their choices as consumers - thus guiding the policy decisions: “If you want to make any kind of decision - said one of the policy-makers - it requires a scientific analysis. If there is a scientific analysis involved, then the State wins”.

They also foresee future benefits in attracting young people to research, increasing professionals in scientific careers. As another interviewee clearly stated: “Longer-term marine science education will produce a more ocean-literate population who understand the value of the Ocean and the opportunities it provides. This would lead to more people pursuing careers in ocean-related fields. This is important as the number of marine-related jobs is predicted to substantially increase”.

Dr. Giangreco, from the Italian Ministry of Environment, commented on the Marine Knowledge Sharing Platform: “All the topics emerged are extremely interesting, but the importance of a scientific-based education, starting from primary school, is a key point for our Ministry: by working with schools we aim to build the ability to read scientific data and to make the youngest people passionate about the marine environment”.

by Niamh Flavin, SmartBay and Francesca Ronchi, ISPRA
MARINA Highlights

First glimpse of the MARINA RRI Roadmap

By Xenia Theodotou Schneider, XPRO Consulting Limited

MARINA supporting the 3Os Strategy
In 2015, the European Commissioner for Research, Science and Innovation, Carlos Moedas, identified three main priorities for Europe: Open innovation, Open science and Open to the world. This is the “3Os” Strategy, which focuses on wide-actor participation in research and innovation. Looking deeper in Open Science, we find citizen engagement and involvement, an important factor for linking science and innovation to the society. This in result expects science and innovation to focus on societal challenges for identify viable solutions.

Societal Challenges and Citizen Science
Looking at our societal challenges today as for example marine litter, climate change issues, food security, energy crisis, securing raw materials, urbanization are all complex issues that require multi-stakeholder actors involvement including citizens. Citizen science, as one approach to open science, has become an umbrella term for a variety of forms of public participation in scientific research and describes the active involvement of non-scientists in research. Another aspect of the 3Os strategy is to have outreach activities, various forms of public engagement with science and to focus on Responsible Research and Innovation (RRI). Lately however, it seems that RRI has become a buzzword in European projects. So why is RRI needed? RRI requires change in the way of identifying solutions for societal issues from the very beginning, by bringing a wide range of stakeholders in defining the scientific and innovation agendas. RRI covers public engagement, science education, open science, gender equality, ethics and governance. But, open debates are insufficient if the actors do not reach a common vision and define specific actions how to reach it.

Lessons Learned feed the MARINA RRI Roadmap
The RRI Roadmap aims to provide the guidelines and hands-on approaches based on best practices extracted from the MARINA lessons learned. In the MARINA project we have been collecting lessons learned from 45 European workshops treating all above mentioned societal challenges through the application of RRI: from marine pollution to fisheries and aquaculture; from sustainable tourism to ocean literacy; from climate change to coastal urbanization; from wave energy to sustainable maritime; from marine biotechnology to deep sea mining. Each of these workshops has engaged citizens, scientists, businesses, policy-makers and civil organizations and it has defined an action-plan for a specific societal challenge. The MARINA lessons learned are extracted from these participatory workshops by analyzing the participatory methods used; feedback from the organizers and the participants; the actions defined and the RRI dimensions. Then these lessons learned are distilled into best practices that will be published later in the RRI Roadmap.

How does the MARINA RRI Roadmap looks like?
This is the first glimpse of the MARINA RRI Roadmap, which focuses on public engagement and co-creation of solutions for a societal challenge. Basically this part of the RRI Roadmap guides the interested into the different phases of involving non-scientists and non-innovation oriented stakeholders in creating an understanding by engaging together, framing a problem and co-defining a vision, ideate together by evaluating different actions for solutions, co-creating an action-plan and anchoring the change. Finally, provide input to policy guidelines.
The RRI Roadmap will focus mainly on how to effectively:

- Explore and support citizen science by engaging citizens so that research and innovation actions are better aligned with expectations of society;
- Open up resources and knowledge bases so that science works for the society;
- Increase science literacy through societal issues’ awareness;
- Frame a societal issue;
- Co-create a Vision towards solutions for the societal issue;
- Co-define an Action Plan with SMART actions to achieve solutions;
- Identify needed institutional changes in scientific and policy-making processes for better focusing on solutions of societal challenges;

The challenge of RRI is to foster collaboration in the conduct of R&I so that it is “with and for society”. This requires not only open debates, but also the active participation and collaboration of all stakeholders in actually “co-designing and co-creating R&I”. The involvement of societal actors and the integration of societal concerns needs to be more systematic and sustainable, e.g. through institutional changes in R&I organizations that have lasting impact and effect. This is the aim of the MARINA RRI Roadmap: to provide the basis for achieving the above.

Please help us improve the prototype to meet your needs. Provide your input on MARINA website dedicated section: www.marinaproject.eu/index.php/bestpractices/
Inspirations from Denmark: which factors make citizens more likely to get involved with science?

by Mette Mechlenborg, Aalborg University

According to the European Commission (2013) more than 50% of all citizens in Eastern and Southern European countries are not interested or informed in developments in science and technology. Looking to the north, the picture is completely different. In Denmark and Sweden more than three of five respondents feel informed in developments, and the percentage even rise when asked about their interest. Why is that? This was the question in a minor study in Denmark and Sweden focusing on inspirational tools and recommendations for involving community and citizen in innovation projects with multi-actors and complicated societal challenges.

The study shows different structural and cultural difference due to a long history of civic engagement and enlightenment. Denmark and Sweden are for example among the top countries with less corruption in world, public investment in education is extremely high and the state works to secure freedom of speech, civic engagement and a democratic dialogue. However, a case study in the two countries also shows that these structural factors work on the practical level; in the way local projects and processes are implemented. This insight suggests different short ways for countries in Southern and Eastern Europe to engage people in science and innovative development. Focusing on (1) Network and network governance, (2) Project strategy: Objectives, visions and drivers and (3) Process & Communication, six key factors how to inspire citizens in science and innovation projects are here presented:

1. Need-driven innovations processes.
   This means that the intentional scope of the project needs to meet a need in society or in a specific target related group in society, often by a long term effect that will change the system/the conventional practices or heighten the quality of life (a “common” dimension).

2. Public engagement is equal to personal engagement
   The engagement of private citizens is always on targeted issues that have directly or indirectly influences on the day life of everyday, or on subjects that are of personal interest. In one case private citizens are deeply involved in a R&D project with the purpose of securing the coast line from climate change as they have private houses next to the see. In general, communication to the public is put on the perspective of the citizen: what does this means for me, my life and my well-being?

3. Meta-governance
   All project in the study had a formal facilitator (person or organization) who took responsibility for the process and for engaging stakeholders and actors in the co-creating. This kind of meta-governance also had an analytic role as synthetizing perspectives and translating different perspectives into drivers and barriers that during the process resulted in various conflicts or “dead-ends”.

4. Open access, mutual learning and co-working
   An open process where every member of the network are given a voice and a saying, especially at the beginning of the process gives stakeholder and actors a platform for sharing experiences and ideas, and thereby create an innovative environment. Several projects used a combination of social and science based activities to create a trustful and positive environments.

5. Differentiated communication in “translated” language
   It is crucial to have a strong communication of experiences and knowledge. But an important finding is that communication needs to be differentiated, not only between internal and external purposes, but for different target groups. That means that “hard core” knowledge or science specific language need to be translated, but also to be translated into specific context of interest or into a “common” dimensional understanding.

6. Positive side effects (practical and structural)
   The study shows that R&D often starts one place (or with one purpose) and ends of with multiple side effects which are only slightly or indirectly related to the original project. For example one project we looked at started as a community driven project, but eventually kick-started a huge private-public collaboration. In another project it has resulted in a cross- municipally approach to several challenges, not only the one that was original addressed. This draw attention to the need for a larger scope when looking at the benefits in innovative collaboration.
Our Engagement with the Ocean: Let’s Keep It Interactive!

Spring is here and with this season Mare Nostrum started a new session of beach litter monitoring. Mare Nostrum NGO started in 2014 to apply, twice a year, in spring and autumn, the beach litter monitoring methodology included in “The Guidance on Monitoring of Marine Litter in European Seas”, a guidance document within the Common Implementation Strategy for Marine Strategy Framework Directive, covering Romania’s compulsoriness to monitor Descriptor 10 – Marine Litter for beaches.

The surveys covered 8 sectors, located along the Black Sea Romanian coast. The results of this monitoring are in the process of centralization, but from the first observations during the monitoring, we can state that plastic is the main category of waste present on the beach. From pet, food containers, glasses, to building materials and abandoned sunbeds, we met all these on the beaches of the Romanian seaside. Besides all the cigarette butts, we also met some less common waste, such as a refrigerator and car tires.

Marine debris left on beaches for a long time is a danger to birds and other animals that can ingest them and unless appropriate measures are undertaken to address this problem, the abundance of marine litter in the area is likely to increase.