

**CNR - National Research Council of Italy**

**IAS – Institute of Anthropic Impacts and Sustainability in marine environment**

**Detached Unit of Capo Granitola**



## **Under citizens-observation: O.R.B.S. and the “OpenCoesione” experience**

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## 1. INTRODUCTION

Communication plays an essential role in scientific projects, especially since it is possible to use social media and web platforms, to reach a wide audience. OpenCoesione is the "open-government" initiative on cohesion policies in Italy, a web platform with navigable data on public programmed resources and expenses, locations, thematic areas, programmers and actuators, implementation times and payments of individual projects. It allows to evaluate how the resources are used relation to the needs of the territories. Any citizen can enrich this platform, analysing public projects and documenting the current state with open data.«A Scuola di OpenCoesione» it is part of OpenCoesione project and represents an innovative experimental project of school teaching of open government strategy of openness and transparency on development policies. It is a teaching and civic challenge addressed to students and teachers of secondary institutes of second degree. Students move from the analysis of information and data published in open format on the OpenCoesione portal, to find out how public funds are spent on their territory. The goal of A Scuola di OpenCoesione is to involve and sensitize students and teachers to the use of contents and tools to learn and monitor the projects of cohesion policies, to build interdisciplinary educational programs starting from the projects financed on their respective territories and enriching, through crowdsourcing, the information base of OpenCoesione adding information and data that are not currently available as, for example, geolocation, multimedia materials, the characteristics of the project, the physical performance of the works.

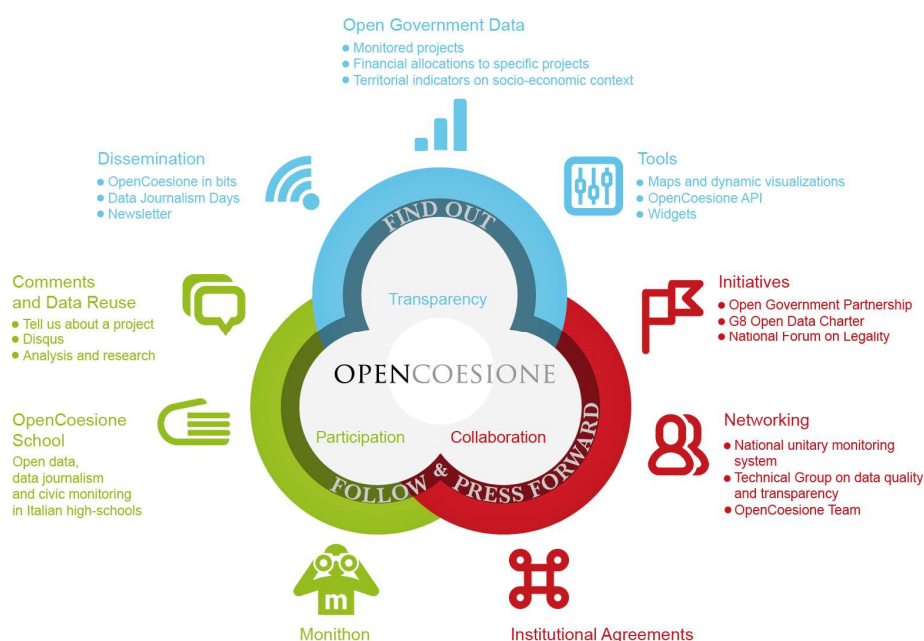
Focus of this research was the public financing aimed to the creation of O.R.B.S. (Observatory of marine and terrestrial biodiversity in Sicily). Our observatory finds its place within the operational objective 3.2.1 of the OP programming ERDF Sicily 2007-2013 actions, to create a public biodiversity observation node for the protection of natural resources consistent with the provisions of Reg. (EC) 1080/06. It constitutes the implementation program of an interventions plan, approved by the Sicily Region. ISPRA and the CNR have carried out the task of studying marine biodiversity present in Sicily, through the collection of data concerning the presence of species in protected areas and of non-indigenous species, as well as their elaboration. The dissemination methods of O.R.B.S. they have been developed through three phases: reconnaissance of existing data, data processing, monitoring.

## 2. MATERIALS AND METHODS

Program is composed of six main sessions. The first four build on the use of innovative and interdisciplinary skills to focus, respectively, on public policies, ICT and digital capacity and open data analysis, citizen monitoring and citizen participation, data journalism and storytelling. During the fifth session the students carry out on-site visits to public works and/or services financed by EU and national funds being developed in their territory and interview with key players involved in the projects' implementation, beneficiaries or others on the sites where they are being developed, while the sixth step is a final event where students meet local communities and policy-makers to discuss the findings of their investigations and evaluations. Students discover how public funds are spent on their territory, starting from the analysis of information and data in an open format, and involve citizens in verifying and discussing their effectiveness, using questions as:

- how are expended public funds on our territory?
- what kind of projects are funded?
- how do they really act to improve our territory?

and structuring the entire journey on five key points: planning, deepen, analyse, explore, tell.



### 3. RESULTS

Thanks to the project "A Scuola di OpenCoesione" (Asoc), during 2018 the platform saw the participation of 196 schools, with about 5,000 students. Our Biodiversity Regional Observatory (Osservatori della biodiversità Regione Sicilia, IAMC-CNR) was chosen by the high school "Liceo Scientifico Statale - Stanislao Cannizzaro" of Palermo city. We follow a team of students, named "Biosservatori", that analysed the public project and the relative financed structure. We create six different reports, summarizing the results of their research in schematic way and creative elaborates. The list of output also highlights the most significant synthesis output made by students in their research: the civic monitoring report on OpenCoesione platform.

#### a. Output



Figure 1 - "Biosservatori" team - logo

#### Report 1: Valorising Biodiversity for a sustainable future

- Acquisition of knowledge and skills on the so-called "pills" of Asoc, notions on the functioning of cohesion policies and civic monitoring, as well as the importance of both. The first operational phase was Data Expedition, the research about the project to be monitored. Students, divided into two sub-groups, consulted the list of projects on the website [www.opencoessione.gov.it](http://www.opencoessione.gov.it). Each group chose one of these, explaining reasons for the choice and the objectives of the research. After a wide debate, with the help of tutor, they have chosen our project: "Regional Observatory of Biodiversity of the Marine Environment and terrestrial". Biodiversity is the set of all living things that characterize a determined ecosystem. It is not a fixed and stable value, in each environment the biodiversity of the species present can increase or decrease over time due to different factors. The governments of sensitive States, close to environmental diversity, emit legislations to protect environments and species that are found there. Italy has ratified the Biodiversity Convention with the law 124/1994 and adopted the National Strategy for Biodiversity in 2010. The OR.B.S. project, entrusted to ISPRA, realized by the Technical Scientific Structure of Palermo, aspires to classify the Sicilian marine biodiversity, regard to protected or endangered species, acquiring new data useful for formulating management plans for marine protected areas. Their choice fell into this project because it is clear how much it is important to promote awareness of environmental sustainability and the protection and conservation of biodiversity in our



region. The name of the team "Biosservatori" plays on the keyword "biodiversity" and "observatory", also referring to the verb "observe", given the objective to understand through the observation of data, as they are the funds used for the realization of this project have been used. The roles within the team were divided according to the skills within the group (Project Manager, Head of Research, Storyteller, Coder, Analyst, Designer, Blogger, Social Media Manager). Lastly, they were created Facebook, Twitter and Instagram accounts.

## Report 2: Telling research by data and information

- Research on institutional sites and online newspapers to acquire information and data useful for the continuation of the work. Monitoring of the Observatory project to contribute to the awareness of the community on environmental and biodiversity issues of our land, to learn more about the context in which the project was born, the nature of the financing, reconstruct the history of the project itself, verify the state of implementation, monitoring the use of the financings, ascertaining whether the project objectives have been reached. About the analysis of Data and information, the 2007-2013 PO-FESR Sicilia was analysed by students, focusing on the axis "Enhancement of cultural identities and resources environmental landscape for tourist attractiveness and development". The realization of the O.R.B.S. it was made possible thanks to the Program Agreement staged on 11/05/2011 between the National Research Council (CNR), ARPA Sicilia, ISPRA and the Environment Department of the Sicily Region with the purpose of carrying out experimentation and research in the scientific and technological field for one exploitation of resources.



Figure 2 - 2007 - 2013 PO-FESR

The predicted tasks of the Observatory are:

- detection of knowledge on biodiversity;
- setting up of data banks on ecosystems;
- implementation of projects to improve the techniques of environmental monitoring;
- creation of disseminated material;
- collaboration with the University of the Mediterranean for the protection of the Sicilian biodiversity and collaboration between reserves and natural parks for the collection of data;
- support for the activities of the Regional Biodiversity Observatory and of public administrations for the development of instruments of efficient communication;

- Coordination centre at Capo Granitola (although activities are carried out at the offices operated).

The objectives set by the O.R.B.S. are:

- carry out a survey and survey of knowledge Sicilian marine biodiversity;
- make clear, accessible and comprehensible data and value information biodiversity to human population, both in relation to conservation objectives and restoration of natural environments that the objectives of preservation and enhancement of the systemic eco-services;
- produce databases and geo-referenced maps based on the knowledge gathered;
- create the database on alien Sicilian species (in agreement with CBD art 8, ASPIM art 13) and on marine protected species;
- develop planning and intervention tools able to guarantee effective management of habitats;
- develop monitoring techniques for protected species and habitats (also hydrothermal) for the identification of new SIC: Capo Milazzo, Scala dei Turchi;
- to develop monitoring techniques for species and protected habitats associated to Strait of Sicily banks (Banco avventura, Graham, Pantelleria);
- develop monitoring techniques for protected species and habitats of MPAs Plemmirio and Pelagie Islands;
- to convey data and information to support the activation processes of the networks of reference stakeholders (regional and extra-regional), in order to facilitate and process collection and processing processes;
- improve the level of information, training and awareness of decision political makers and regional administrators on the importance of the biodiversity and the implementation of projects and best practices for its protection and enhancement in the local area.

This information was analysed by the "Biosservatori" group, acquired and processed for subsequent outputs.

**Report 3a:** Cohesion policies at school. Civic monitoring, Open Data (Presentation at other local authorities and administrations)



Figure 3 - SAA2018, the collective event of Asoc project

- The Administrations representatives and Implementing Institutions met the young students to discuss the projects carried out with the Structural Funds in Palermo and Sicily. The team of Biosservatori presented their project and their research on the Biodiversity Observatory of the marine and terrestrial environment of the Sicily Region at the event of SAA2018, made on 08/02/18 at the church of "San Mattia aiCrociferi" of Palermo, with the participation of all ten teams from the schools of Palermo Asoc project. The event represented an opportunity for exchange and comparison between students and representatives of the implementing bodies of the monitored projects. After the speeches by some representatives of the Municipality of Palermo, all ten teams presented their project. "Biosservatori" team has highlighted its objectives using a PowerPoint presentation.

**Report 3b:** creation of graphics and infographics on the national reality of biodiversity observatories, creation of an Instagram video on the previous report.

To develop the necessary infographics, the questions that the team asked at the beginning of the research were:

- Who deals with Biodiversity in Sicily?
- How do we enhance the environmental resources of our territory?
- In what context was the project born?
- The objectives set by the institution have been achieved of the Observatory we are dealing with?

The first data were obtained from the OpenCoesione site. A good number of biodiversity projects have been financed in various Italian regions and the largest number of projects has been financed in Puglia, Campania and Sicily, which holds the record with 16 projects. The Observatories of Biodiversity in the Italian territories are distributed in almost all the regions. In



Veneto, Piemonte and Trentino there are no observatories, all the other regions have one observatory and in Abruzzo and Lazio there are two. Finally, they considered the marine protected areas, since the activity of the Sicilian Observatory focused on the research of marine biodiversity. It appears that the regions with the greatest number of protected marine areas are Campania, Sardinia, Sicily and Emilia Romagna. Finally, among the numerous data provided by the CNR regarding the activities carried out by the Observatory of marine and terrestrial biodiversity in Sicily, particular attention was attributed to the monitoring of alien species in the Sicilian coasts, important to know the health status of the place and the changes occurred in the local marine biodiversity. The monitoring took place partly based on the existing literature (scientific articles), as regards the years from 1878 up to the eighties of the last century, then on direct observation. Great emphasis has also been given to the position that Italy has taken in respect of the protection of biodiversity, ratifying the Convention on Biodiversity with the law 124/1994, adopting also in 2010 the National Strategy for Biodiversity, which attaches great importance to the realization of projects that support it. The team believes that the activity carried out by ISPRA and CNR in the project on O.R.B.S. has achieved good results regarding the recognition of existing data, data processing and monitoring of marine areas. They do not have however found any data on the monitoring of terrestrial biodiversity, which was also provided by the project.

#### Report 4: Civic monitoring

- Interviews, creation of a YouTube video.

On 14 March 2018 the team carried out the monitoring visit at the O.R.B.S. in Capo Granitola, in the province of Trapani. The Observatory is in a former "Tonnara", headquarters of the IIAM CNR. Angela Cuttitta, CNR researcher and head of the Observatory, guided the visit and explained what the Observatory does. In the 3D room, documentaries were shown on the research carried out and on the relative results. Among the tasks performed by the Observatory are communication and dissemination to contribute to the awareness of the community on the themes of Biodiversity. In this meaning didactic and creative actions have been realized with partners such as the Belle Academy Arts of Palermo and Roma III University for the creation of brands and artistic works on the themes of Biodiversity, some of which remained at the Observatory on permanent display. In the small interactive museum of Biodiversity are illustrated the habitats and ecosystems present in Sicily, where the school children who visit it can carry out laboratories.



Figure 4 - Students interview

Through an interview with targeted questions, the students interrogated the main project managers, discovering that the observatory provided a very fruitful part of the communication that saw the realization of the Observatory as a physical place and of the website. Three phases have been foreseen: the collection of information, data and

updating of the state of Biodiversity; a system of communication and dissemination by the Observatory which saw the creation of a web information system for the management and communication of all services and data. On the Observatory site there are more than 200 cards of marine species that give a series of information on morphology, habitat, reproduction, ecology and nutrition. The third phase involved the construction of a "physical place" in Palermo that unfortunately was not successful. For the part concerning promotion and communication, the Observatory had as its partner the Roma III University for the new teaching methods and to assist the scientific museums in the creation of paths and multimedia tools and the Academy of Fine Arts of Palermo for the part graphic and artistic presentation of contents and for the artistic part on site. The activity continues with the dissemination of information with schools of all types and levels that may come to visit the Observatory, the Biodiversity Museum and carry out workshops.

### Report 5: Final report

- Description of the chosen project and motivation, description of significant phases of the research, proposals and Follow-up, critical elaboration.

Since the Observatory's activity continues today with the dissemination and dissemination of information with schools of all levels, which can visit its headquarters in Capo Granitola, the small Biodiversity museum and carry out laboratory activities, students believe that this is the path to continue to take in order to raise awareness among young people about Biodiversity issues and hope that collaboration with schools will be ever closer to contribute to improving the environmental sustainability of our territory. They will commit maintain contact with the Observatory and to continue monitoring its activity.

"Biosservatori" team committed to understanding the context in which the project of Observatory was born, the nature of the financing, the history of the project and the state of

implementation. Thanks to their outputs, the team allow us to divulgate our goals during last years: the creation of databases on Sicilian alien species and marine protected species, the identification of extreme importance marine areas, become protected areas in Natura 2000 network, a contribute to raising awareness on the theme of Biodiversity and on the importance of environmental protection. Final outputs are visible on web-platform <http://www.ascuoladiopencoessione.it>.

The end results have been transformed into a poster, presented at the scientific divulgation event CommOcean2018, in SouthAmpton (UK) during 4-5 December 2018.