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PERSEUS

Policy-oriented marine environmental research in the Southern European Seas

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Fostering collaboration in the Southern European Seas

PERSEUS Project Coordinator **Dr Vangelis Papathanassiou** reflects on how the early stages of this important marine-based project is seeing many policy research boundaries effectively bridged

Firstly, what are your main responsibilities as Coordinator of the Policy-orientated marine Environment Research in the Southern European Seas (PERSEUS) Scientific Steering Committee (SSC)?

The SSC coordinates the scientific progress of the project, keeping it focused and working towards its scientific goals. Additionally, it takes all the important decisions within the programme; these are subsequently validated through the General Assembly. SSC also assures integration within and across the various Work Packages, the geographical areas and the cross-cutting themes. It is a crucial management body for the efficient running of the project.

Nevertheless, the Project Coordinator has the overall responsibility and ultimate decision-making capacity on all issues, with help from the PERSEUS Management Office. The Coordinator, together with the Management Office, also communicates with partners, monitors their activities, identifies problems

Unifying Europe's marine research and governance

With an integrated approach to building a deeper understanding of both human and natural pressures in European waters, **PERSEUS** is enabling the rapid improvement of marine governance and decision-making processes

INCREASING PRESSURES ON Europe's marine areas, particularly around the Mediterranean and Black Sea, is highlighting the need for these areas need to become more resilient to activities and change. There is a large scientific research effort already underway to identify some of the environmental baselines, but the challenge now lies in transferring that knowledge into innovative and effective governance. The EU-funded 'Policy-orientated marine Environmental Research in the Southern European Seas' (PERSEUS) project is attempting to resolve this. By using Europe's Marine Strategy Framework Directive (MSFD) as a foundation, PERSEUS is developing and initiating a marine research governance framework that effectively unites scientific research with policy development. The PERSEUS team hopes that, by offering a collaborative framework which supports scientists, policy makers and the wider public, the shared knowledge will promote collective decision making. This not only relates to the MSFD, but is also inherently relevant to other common commissions and policies such as the Integrated Maritime Policy, the UNEP/ Mediterranean Action Plan and the Common Fisheries Policy.

Dr Vangelis Papathanassiou from the Hellenic Centre for Marine Research at Greece's Institute of Oceanography is PERSEUS' Project Coordinator. He explains that their overriding goal is to support the Mediterranean and Black Sea countries to reach the 'Clean Seas by 2020' target and achieve the Good Environment Status (GES). This will be realised through the development of a number of adaptive policies, policy recommendations and management programmes which is set to support successful governance of this marine area. One of

and resolves them. The Steering Committee, chaired by the Project Coordinator, helps to deal with impromptu issues as and when they arise. Therefore, as Coordinator, it is important to be flexible and solution-orientated in all aspects and lay foundations for the efficient and successful activity of the SSC.

What do you consider to be the greatest threat to the successful implementation of this programme?

I do not think that there is a significant danger regarding the implementation of European Marine Strategy Framework Directive (MSFD). This will be achieved by the EU countries; it is an iteration process with a cycle of six years and I am really confident that this will be completed and eventually prove a great help regarding the management options in the Southern European Seas countries.

As far as PERSEUS is concerned, the mandatory remark of the project is that the sea has no frontiers: whatever happens in one country will reflect on the ecosystem of another country.

Therefore, the greatest threat is the reception of the activities and the project results – as well as the involvement of the stakeholders of these countries in the process – by non-EU countries.

Many marine scientists believe 'marine parks' to be an appropriate way of protecting the health of our seas. What is your personal view?

Marine parks, or rather, the Marine Protected Areas (MPAs) can help significantly in protecting the marine environment. However, we must bear in mind that protecting a system implies that we know the system well. Knowledge of the functioning of the marine environment in areas, such as the Mediterranean or the Black Sea, must be completed and this knowledge has to be shared and followed by protection measures and policies to see matters improve. If we understand this major issue, protection through MPAs is much easier to achieve. Many marine scientists offered their expertise free of charge to gain the knowledge and protect the environment, so I believe that the political will should be increased and give the opportunity to achieve these protection targets. These will eventually increase and sustain the development and economies of the various counties under discussion.

What events have you organised to support the project's aims?

One of the most important project events is the Umbrella Workshop, which will take place at the end of the first year to highlight knowledge gaps and dictate the sampling strategies to be followed. The Workshop will present and prioritise the identified knowledge gaps in the respective work packages of the project. Based on these results the sampling strategies will be refined in accordance with other projects' requirements and the relevant interconnections will be established, thereby finalising the environmental issues of socioeconomic importance to be treated within PERSEUS.

Finally, can you highlight the broader challenges associated with this work?

PERSEUS is not just an EU scientific research project. The complexity of the work requires achieving a great deal scientifically with the aim of translating the results into policy options and adaptive policies. The project has therefore been designed using interconnected clusters, which makes it easier to organise the work, but it is challenging in terms of addressing the policy issues related to the marine environment, even beyond the MSFD.

the approaches that PERSEUS has chosen is fostering strong linkages between both the natural and the socioeconomic sciences to achieve integration across disciplines and activities, as Papathanassiou highlights: "Through this approach, PERSEUS aims to help predict the long-term effects of pressures on marine ecosystems. But also by assessing good environmental status in a coherent and holistic manner, it will support the ecosystem-based approach to management".

DESIGNING FEASIBLE MARINE MANAGEMENT SCHEMES

This project has been driven by the ever-mounting evidence that the current environmental state of the Southern European Seas is undergoing rapid change because of both natural processes and anthropogenic activities. Physical dynamics and hydrological structures are being affected by greenhouse gas emissions, warming surface ocean temperatures are changing habitats and migration patterns and modifications to ecosystems are impacting on the region's socioeconomic state. "In the coastal Mediterranean," Papathanassiou points out, "nearly 150 different threats have been identified, including pollution related to urbanisation and industrial activities, overexploitation of fisheries and invasion of exotic species." Many of the changes that are taking place, or losses of coastal ecosystems and species, are now considered to be practically irreversible. This means that changes must take place in the way humans manage activities that impact on the marine environment and to achieve this policy and governance must be directed by robust evidence-based science.

One of the greatest weaknesses in current knowledge is how human and natural pressures interact. To resolve this, PERSEUS is divided into four key clusters: policy, knowledge, tools and users. The intention is that the knowledge and tools clusters feed innovative new data and methods, as well as interpreted information, into the policy cluster where it is

THETIS SUBMERSIBLE (HCMR REMOTELY OPERATED VEHICLE)

then developed into what is known as a new Adaptive Policy Framework ready to be shared through the users cluster. This will collectively form the basis of effective management and governance recommendations: "In turn, all of the work under PERSEUS will enhance the capacity for science-based policy making both internally and externally to the PERSEUS consortium and we will communicate the results to the wider stakeholders' community," Papathanassiou explains.

PERSEUS

POLICY-ORIENTATED MARINE ENVIRONMENTAL RESEARCH IN THE SOUTHERN EUROPEAN SEAS

OBJECTIVES

To identify the interacting patterns of natural and human-derived pressures on the Mediterranean and Black Seas, assess their impact on marine ecosystems and (using the objectives and principles of the Marine Strategy Framework Directive as a vehicle)design an effective and innovative research governance framework based on sound scientific knowledge.

PARTNERS

53 partners from 21 countries.
See website below for further details.

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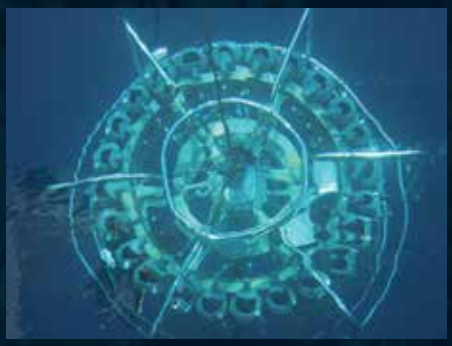
DR VANGELIS PAPATHANASSIOU has held the position of Director of the Institute of Oceanography at HCMR and has over 30 years of experience in National and EU projects in the field of ecotoxicology, marine ecology and management studies. He was Coordinator for the marine and coastal programme of the European Environment Agency from 1996-99. He was responsible for the organisation of the Inter-regional Forum with all major European Sea Conventions and has worked as evaluator in several DG Research Programmes, as well as being the Coordinator of the EU IASON project. In 2006 he became the Coordinator of SESAME, one of the largest European projects on ecosystem and subsequent climate changes in the Mediterranean and the Black Seas, while his latest endeavour is the PERSEUS project.



ROSETTE SAMPLER INSTRUMENT USED TO COLLECT WATER SAMPLES

COLLABORATING WITH OTHER EU-WIDE INITIATIVES

There are many historic and existing EU initiatives and programmes dedicated to protecting the marine environment, there are also a great deal more which impact on coastal and ocean areas. Many of these projects include observations, modelling and data management which will be drawn on to support the PERSEUS outcomes. Several of the Principal Investigators, Work Package Leaders and coordinators of these other initiatives are set to become actively involved in the PERSEUS project to avoid duplication of efforts and maximise the impact that can be achieved from the array of endeavours. One such example that has the same geographical area is COCONET, which is attempting to set up Marine Protected Areas (MPAs).

COCONET and PERSEUS have many common goals and partners which means they should both directly benefit from the development of a solid dataset across the Southern European Seas. Experts from both projects will be working collaboratively, with stakeholders developing collective schemes and policies, and policy makers creating a policy framework that focuses on the goals and objectives of both projects. The links between COCONET and PERSEUS are being formalised through joint partner and stakeholder meetings and joint summer schools.

Emphasis will be given to aligning with research projects that are studying the ecosystems of the Southern European Seas, such as CIRCE, MESMA, HERMES, MedSeA and HYPOX. The SESAME project will receive particular attention because of the scientific networking opportunities that are presented from all of the modelling tools, policy alternatives and scenarios it developed. The objective behind PERSEUS is to directly utilise and build upon many of the exiting national monitoring programmes and large networking activities, in particular the GMES, MOON, MedGOOS and Black Sea GOOS networks. "PERSEUS will propose a monitoring strategy to combine all these activities to a more coherent and integrated tool. This can then be used for the implementation of the ecosystem approach to marine environmental management, which is the core of the MSFD," Papathanassiou states.

Having successfully completed the first training activity on the MSFD principles earlier this year, PERSEUS is now aiming to help improve consistency in marine issues and research throughout the Black Sea countries. This is primarily related to the MSFD principles, including assessment, monitoring capacities and strategy and ecological modelling. Whilst training is focused on postgraduate students, they have also developed educational activities for stakeholders and visits for scientists and technicians from a number of selected academic institutions. This work anticipates strengthening scientific networking, expanding the existing Southern European Seas scientific tools, projects and networks and aligning with scientists from both EU and non-EU countries that border this area. As Papathanassiou explains, the project will offer cooperation and networking between scientists through several different avenues, including training activities, personnel exchange schemes and workshops: "The opportunities we are fostering will create a platform for strengthening human capacity-building in interdisciplinary science and science-based management to create a two way process".

Changes in the way humans manage activities that impact on the marine environment must take place and to achieve this policy and governance must be directed by robust evidence-based science