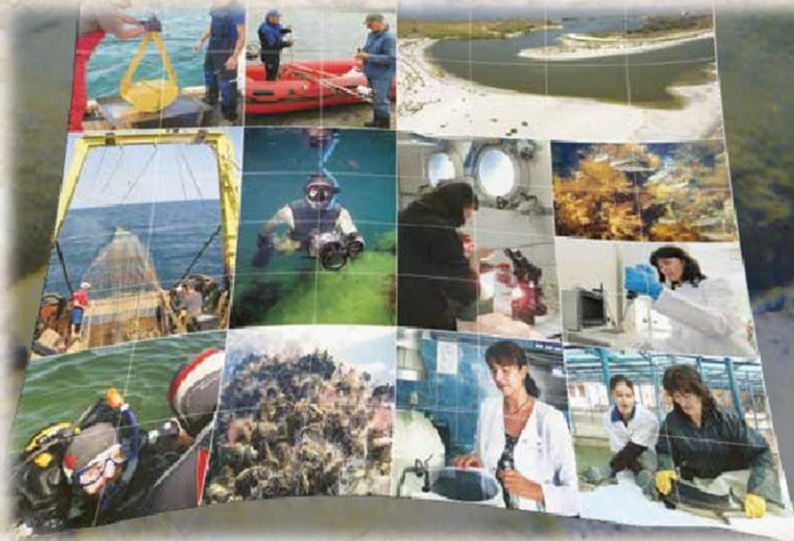




MINISTRY OF NATIONAL EDUCATION

**NATIONAL INSTITUTE FOR RESEARCH AND DEVELOPMENT IN
ENVIRONMENTAL PROTECTION**

**NATIONAL INSTITUTE FOR MARINE RESEARCH AND
DEVELOPMENT "GRIGORE ANTIPIA" - CONSTANTA**



Dr. Eng. Tania ZAHARIA - Scientific Director

HISTORY AND TRADITION

1926 - The first Marine Zoology Station in Romania was founded at Agigea, by Professor Ioan Borcea, pioneer of Romanian oceanology.

1932 - The Bio-Oceanographic Institute was founded by Professor Grigore Antipa, director and inspector general of the State Fisheries, in Constanța.

1945 - The Bio-Oceanographic Institute was transformed into the Marine Research Station, promoting the development of research on physics of the sea, zooplankton, fish fauna and fisheries.

1954 - Under the auspices of the Commission for Hydrology, Hydrobiology and Ichthyology of the Romanian Academy, the Institute of Biology “Traian Săvulescu” and the Fisheries Research Institute initiated complex research on the biotic and environmental conditions in the Black Sea.

1960 - The Hydrotechnical Research Institute, the Oceanographic Research Station in Constanța and a smaller research station in Sulina were created.



*Headquarters of the
“Professor Ioan Borcea” Marine Zoology
Station in Agigea (1926)*



*Headquarters of the Bio-Oceanographic
Institute (1932)*

HISTORY AND TRADITION

1964 - A marine sedimentology laboratory was established in Bucharest.

1970 - The **Romanian Marine Research Institute (RMRI)** was established, as a result of the merger of the institutions mentioned above.

1999 - The **National Institute for Marine Research and Development “Grigore Antipa” (NIMRD)** was established. In order to recognize the centenary tradition and continuity of national oceanology, the institute is named after Professor Grigore Antipa (1867-1944).

2009 - NIMRD was reorganized in November 2009, becoming sub-unit with legal personality of the National Institute for Research and Development in Environmental Protection (NIRDEP) Bucharest, under the coordination of the Ministry of Environment and Forests.

2013 - NIMRD went under the coordination of the Ministry of National Education.



*NIMRD “Grigore Antipa”
headquarters today*

ACTIVITY

NACE Code 7219 - Research and development for natural sciences and engineering; UNESCO Code 2510 - Biological oceanography, Chemical oceanography, Descriptive oceanography, Marine botanics, Marine Zoology, Sea bottom processes, Physical oceanography, Sea-air interactions, Marine Ices, Seaside and under-seaside processes, Marine underwater acoustics.



NATIONAL AND INTERNATIONAL RESPONSIBILITIES

Operational Oceanography Area

- National Oceanographic and Environmental Data Center (RNOEDC)
- North-Western Atlantic, Mediterranean and Connecting Seas Tsunami Early Warning and Mitigation System (IOC)

Marine Environment Protection Area

- National Integrated Monitoring System (National Operator)
- National scientific responsibility for the implementation of MSFD
- Focal points for: Biodiversity, Pollution, Land-based Sources Pollution, ICZM, Fisheries and Other Marine Living Resources of the Black Sea Commission
- Focal points for: ACCOBAMS and Convention for Migratory Species (CMS)
- residency and registered office of the Romanian National Committee of Oceanology/CNR-UNESCO since 2004
- Permanent Technical Secretariat of the National Coastal Zone Committee
- Administration of the 2 Mai - Vama Veche Marine Reserve (ROSCI0269) (Custody Agreement no. 306/13.12.2011 for 2011-2016)
- Elaboration of the Annual Report on the Marine Environment State

Marine Living Resources and Fisheries Area

- Black Sea Fisheries Activity Center/Advisory Group for Environmental Aspects of Fisheries and other Marine Living Resources
- National scientific responsibilities for fisheries data collection and assessment of living resources
- National scientific responsible for the General Fisheries Commission for the Mediterranean/Working Group on the Black Sea of the GFCM

MAIN FACILITIES



- Headquarters - 5,800 m²
- Modern laboratories, with international level research facilities
- Experimental basins with marine water (400 m²)
- IT equipment, Internet (LAN) and regional network access
- Maregraph network along the Romanian coast (Sulina, Midia, Constanta, Tomis Marina, Mangalia)
- Research Vessel “Steaua de Mare I” (130TRB/570 HP)
- Speedboat “Marsuin” (7 m/150 HP) - dolphin survey
- Diving team with specific facilities and underwater TV-system
- Oceanographic data equipment and sampling equipment (CTD, currentmeter etc.)
- 4 cars with 4x4 facilities, including mobile laboratories

HUMAN RESOURCES & DEPARTMENTS

93 employees

**70 scientific staff
(47 higher
education)**

**23
technical &
administrative staff**

21 PhD

7 PhD students

- DEPARTMENT OF OCEANOGRAPHY, COASTAL AND MARINE ENGINEERING
- LABORATORY FOR MEASUREMENTS AND PHYSICAL/CHEMICAL ANALYSES
- DEPARTMENT OF ECOLOGY AND MARINE ENVIRONMENT PROTECTION
- DEPARTMENT OF MARINE LIVING RESOURCES
- DEPARTMENT OF TECHNOLOGICAL TRANSFER AND DISSEMINATION
- IT-GIS DEPARTMENT
- RESEARCH ACTIVITY - SUPPORT DEPARTMENTS (ECONOMIC, FINANCIAL AND ACCOUNTING DEPARTMENT & TECHNICAL DEPARTMENT)

DEPARTMENT OF OCEANOGRAPHY, COASTAL AND MARINE ENGINEERING

OCEANOGRAPHY

Survey of sea level trend and variation; Research regarding the effects of global changes on local and regional hydrological conditions; Assessment of seawater physical and chemical parameters dynamics; Monitoring of eutrophication and marine pollution with heavy metals, hydrocarbons, pesticides; Management of oceanographic database and regular delivery of operational data for bathing waters and beach quality survey.



MARINE TECHNOLOGY

Underwater investigations for assessing the state of hydrotechnical protection works; Designing, testing and implementing new equipment and devices for oceanographic research and for intervention in case of accidental oil spills.



COASTAL ENGINEERING

Survey of coastal geomorphology and erosion/accretion processes and development of protection/rehabilitation measures; Studies regarding the state, evolution and efficiency of hydrotechnical protection works.



LABORATORY FOR MEASUREMENTS AND PHYSICAL/CHEMICAL ANALYSES



Specialized structure for the determination of marine nutrient loads in sea water, heavy metals in sediments and biota, organo-chlorine pesticides in sediments, polycyclic hydrocarbons in sediments, marine bioresources nutritional value, seawater chlorophyll and nutrients, measurements and analyses for internal projects or service provision for various beneficiaries.



DEPARTMENT OF ECOLOGY AND MARINE ENVIRONMENT PROTECTION

MARINE ECOLOGY

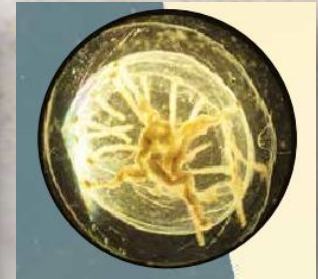
Research regarding the state and evolution trends of the marine ecosystem biotic components; Research regarding anthropogenic influences on the marine ecosystem health; Knowledge of marine biodiversity evolution and threats and assessment of protection measures; Coordination of marine monitoring activities; monitoring of biological parameters.

BIOCHEMISTRY AND ECOPHYSIOLOGY

Knowledge of marine bio-resources' trophic potential and nutritional values; Research on bio-resources use for human and animal consumption and pharmaceutical industry; Developing pilot technologies to create medical and pharmaceutical products from marine organisms, using biotechnological processes; Research regarding the toxic potential of some micro-algae species.

RADIOECOLOGY

Radioecology as an important part of radiation impact assessments and planning for environmental remediation; Study of the behaviour of radionuclides, which leads to better understanding more general environmental processes and the behaviour of non-radioactive pollutants; Radioactivity survey in abiotic and biotic marine ecosystem components.



DEPARTMENT OF MARINE LIVING RESOURCES

ICHTHYOLOGY - FISHERY RESOURCES

Assessment of the state and evolution of pelagic and demersal fish stocks; Knowledge of the biology-ethology, size and distribution of dolphin stocks, industrial fishing impact; Knowledge of fish diversity evolution; Development of state of the art fishing gears; Research of fishing management and economy; Scientific substantiation for implementing national legislation in the fishery field, according to EU requirements.



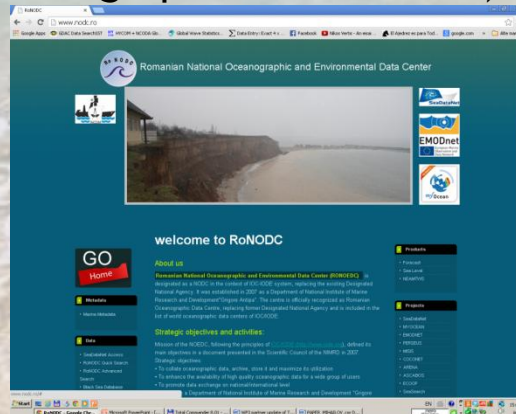
MARINE AQUACULTURE AND ECOLOGICAL RECONSTRUCTION

Experimental research concerning marine organisms rearing technologies; Research for the ecological rehabilitation of marine environment; Scientific knowledge and Marine Protected Areas (MPA) management; Scientific substantiation of protected areas designation and inclusion in the Natura 2000 network.

DEPARTMENT OF TECHNOLOGICAL TRANSFER AND DISSEMINATION

Romanian National Oceanographic and Environmental Data Center - RNOEDC (acknowledged by IOC/IODE and IOC/GOOS as the Romanian Oceanographic Data Center).

www.nodc.ro



Professional Training Centers: TRAINING CENTER ON ENVIRONMENTAL PROFESSIONS (within the Balkan Environmental Association - B.EN.A and later on within the European Environmental Association - E.E.A.) and the **FISHERIES VOCATIONAL EDUCATION AND TRAINING CENTER.**

Maritime Policies, ICZM: NFP Development of Common Methodologies for Integrated Coastal Zone Management within the Black Sea Commission, Maritime Spatial Planning.

Custody of the Vama Veche-2 Mai Marine Reserve Marketing/Program Management. Quality Management: implementing ISO quality standards.

- Information dissemination, library**
- Organizing events, designing dissemination materials, elaborating press releases and managing the relationship with the media;
 - Educational activities;
 - Library with more than 43,500 books;
 - Journal “Recherches Marines”;
 - NIMRD’s ichthyologic collection.



IT-GIS DEPARTMENT

Supports the R&D activity by:

- Developing the communications infrastructure;

- Communication services;

Designing and implementing IT services within projects, project website, resource access services - etc.;

- Support for GIS measurements and GIS format integration, geo-referencing and digitalization of maps, satellite images, creating maps, developing the geo-database, 3D and spatial maps.



RESEARCH ACTIVITY SUPPORT DEPARTMENTS

ECONOMIC, FINANCIAL AND ACCOUNTING DEPARTMENT

Finance and Accounting Office, Economic Analysis, Contracts, Procurement Administrative Department, Archive, Fire Prevention and Labor Safety



TECHNICAL DEPARTMENT

Vessel Compartment, Workshop, Maintenance, ISCIR, Auto Compartment, Investment Compartment

R&D ACTIVITY WITHIN NATIONAL PROGRAMS

- NIMRD participates in complex research activities within the framework of the National Plan for Research, Development and Innovation (Phase I and II), through following programmes: ORIZONT 2000, Nucleu-CEMAR, MENER, BIOTECH, AGRAL, INFRAS, INVENT, CEEEX 2005/2006, CORINT, INFOSOC, CNCSIS, PN II, POS-CCE. POS- MEDIU etc;
- Studies and research projects, financed by Ministry of the Environment and Climate Changes, for the support the national strategy regarding the protection of the marine environment and coastal zone, as well as the implementation of specific EU Directives;
- Performing environmental impact, environmental audit and risk assessment studies concerning the marine activities in the national coastal zone;
- Projects and research scholarships financed by the Balkan Environmental Association (B.EN.A.);
- Issuing the yearly Report on the marine environment state.

R&D ACTIVITY WITHIN INTERNATIONAL PROGRAMS

NIMRD's Research and Development Activity within:

FP 5, FP 6, FP 7 Programs, HORIZON 2020, PHARE, NATO, GEF, IOC/UNESCO, ESEAS, SEASEARCH, ECOS OUVERTURE/EU, LIFE NATURA/EU, MATRA-SENTER/NL, EC/DG MARE, EC/DG ENVIRONMENT, BLACK SEA JOINT OPERATIONAL PROGRAMME, ERA-NET, BILATERALS (BG, GR, CHINA): REBECCA, SRCSSMBSF, PERSEUS, COCONET, MISIS, SYMNET, ODEMM, MEGALOS, PEGASO, CREAM, CLEANSEA, MAREFRAME, IRIS, COSMOMAR etc.




REGIONAL AND EUROPEAN INSTRUMENTS FOR R&D ACTIVITIES

- GMES Initiative (ocean monitoring, crisis and natural disasters management).
- INSPIRE Directive (metadata, spatial data, networking and technology services etc.).
- WISE - marine specialized water information system of INSPIRE.
- Water Framework Directive / Shellfish Water Directive Habitats / Birds Directives - Natura 2000 Network.
- EU Integrated Coastal Zone Management Recommendations.
- Common EU Fisheries Policy (Data Collection Framework).
- Marine Strategy Framework Directive (MSFD).
- European Maritime Policy/Green Paper (European network for observation and marine data, European strategy for marine research, forecasting and adapting to climate changes etc.).
- European Research Area (ERA-NET).



On-going projects (1)



MARCY: MOLECULAR APPROACHES FOR RAPID AND QUANTITATIVE DETECTIONS OF CYANOBACTERIA AND THEIR TOXINS FROM COASTAL BLACK SEA

Project BS-ERA.NET 019
Project Duration: October 2010 – October 2014

OBJECTIVES

This project focus on a timely, major unsolved problem related to the coastal ecosystems and human health. Cyanobacteria (formerly called "blue-green algae") and the potent toxins (cyanotoxins) they produce are found worldwide in inland and coastal water environments. Eutrophication often causes massive cyanobacterial proliferation (so-called cyanobacterial blooms) in some European seas and the increasing problems caused by them. However, there is a lack of knowledge about toxic species and toxicity of cyanobacteria in the Black Sea, mainly due to the limitation of currently used detection methods, based on the morphological identification by microscopy.

The overall goal of MARCY project is to improve detection systems of cyanobacteria & cyanobacterial toxins for a good pollution monitoring and control in coastal waters of the Black Sea. For this purpose, MARCY aims to implement for the first time contemporary research methods for rapid and efficiently detection of cyanobacterial hazards in coastal areas of the Black Sea. This will be accomplished by combination of high throughput immunological and analytical methods with recently developed molecular methods. By means of DNA-based methods and PCR technology, cyanobacteria populations will be *in situ* detected in Black Sea waters from the western (Romanian, Bulgarian) and southern (Turkish) coastlines, throughout the summer season. The presence and identification of toxic strains in water bodies will be assessed by PCR amplification of *mcx* genes and serve as an early warning method.

RESULTS & OUTPUTS

The original scientific results yielded by this project have a great impact to the Black Sea environment. For the first time, detailed and very precise information of cyanobacterial species in Black Sea will be provided. Toxicogenic cyanobacterial species will be identified with certainty and data utilized in correct estimation of causes of coastal water quality alteration (including recreational) and mass mortality associated with the summer blooms at the Black Sea. State-of-the-art methods for early-monitoring of cyanobacterial blooms with toxin producing potential in the Black Sea will be develop.

Core Project Team:

Elena Stoica, NIMRD "Grigore Antipa" Constanta, Romania- Project Director
Adrian Stanica, GeoCoMar, Bucharest, Romania -Team Leader P1
Izabela Teneva, Plovdiv University , Bulgaria - Team Leader P2
Rayhan Akpaalan Albay, Istanbul University, Turkey - Team Leader P3
Konstantinos Kormes, University of Thessaly, Greece - Team Leader P4



<http://www.marcy-bs-ere-net.ro/>



Towards COast to COast NETWORKs of marine protected areas: (from the shore to the high and deep sea), coupled with sea-based wind energy potential (COCONET)

Starting date: 01/02/2012

Duration: 48 months

The project has two main themes:

-Identify prospective networks of existing or potential MPAs in the Mediterranean and the Black Seas, shifting from a local perspective to the regional level (network of MPAs) and finally the basin scale (network of networks). The identification of the physical and biological connections among MPAs will elucidate the patterns and processes of biodiversity distribution. Measures to improve protection schemes will be suggested based on maintaining effective exchanges (biological and hydrological) between



Partners: BE (BELGIUM), CIL (ITALY), CNR-ISMAR (ITALY), CNRS (FRANCE), COCOPA (ITALY), CONSUMA (ITALY), CSIC (SPAIN), DTU-AQUA (DENMARK), GEOCOMAR (ROMANIA), HCBM-100 (GREECE), IBER-BAS (BULGARIA), IRIUK (MONTENEGRO), IBS-NASLI (UKRAINE), IEO (SPAIN), IFCANARIA (SPAIN), ISAT (TUNISIA), ICBAS (BULGARIA), ILEL (ISRAEL), ISBARAT (MOROCCO), ISTANBUL UNIVERSITY (TURKEY), MERTU (TURKEY), MSH (UKRAINE), NATUREBUREAU (UK), NEA (GEORGIA), NENUPHAR (FRANCE), NERSC (NORWAY), NIMRD (ROMANIA), ORBIS (UKRAINE), RSHU (RUSSIA), SINOP UNIVERSITY (TURKEY), SIO-BAS (RUSSIA), LISCES (UKRAINE), UNIVERSITY of MALTA (MALTA), UNIVERSITY of ROSTOCK (GERMANY), UNIVERSITY of the AEGEAN (GREECE), UNIVERSITY of ZADAR (CROATIA), UNIZIKM (ALBANIA), URGE (BULGARIA), USTV (FRANCE)

WP Number	Work Package Title
WP1	Management
WP2	Habitat mapping: state of knowledge, data integration and scenarios of protection
WP3	Species assemblages, dispersal and connectivity
WP4	Scenarios of environmental change (natural and human induced): Role and response of the MPAs
WP5	Offshore wind farms and marine protected areas
WP6	MPA Socio-Economic Issues, Management and Legislation
WP7	Information Dissemination and Outreach
WP8	Training and capacity building
WP9	Data Management and synthesis
WP10	Black Sea Pilot Project
WP11	Mediterranean Sea Pilot Project

Core project team: Dragoş Micu, Mariana Golumbeanu, Victor Nişă, Alina Spînu www.cocnet-67.eu

On-going projects (2)



EU-FP7 Project PERSEUS

Policy oriented environmental research in the southern European Seas

PERSEUS Homepage: www.perseus-net.eu

Grant agreement no: 287600

Project duration: 1.01.2012 – 31.12.2015

54 partners:

Leading research Institutes and SMEs from EU Member States, Associated States, Associated Candidate countries, non-EU Mediterranean and Black Sea countries, will join forces in a coordinated manner, in order to address common environmental pressures, and ultimately, take action in the challenge of achieving GES.

Objectives:

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

Results and outputs:

Well-coordinated scientific research and socio-economic analysis will be applied at a widening scale, from basin to coastal. The new knowledge will advance our understanding on the selection and application of the appropriate descriptors and indicators of the MSFD.

New tools will be developed in order to evaluate the current environmental status, by way of combining monitoring and modelling capabilities and existing observational systems will be upgraded and extended. Moreover, PERSEUS will develop a concept of an innovative, small research vessel, aiming to serve as a scientific survey tool, in very shallow areas, where the currently available research vessels are inadequate.

In view of reaching Good Environmental Status (GES), a scenario-based framework of adaptive policy-based management schemes will be developed. Scenario of a suitable time frame and spatial scope will be used to explore interactions between projected anthropogenic and natural pressures.

A feasible and realistic adaptation policy framework will be defined and ranked in relation to vulnerable marine sectors/groups/regions in order to design management schemes for marine governance.

Finally, the project will promote the principles and objectives outlined in the MSFD across the SES.



Area for demonstration of the MSFD principles and development of Adaptive Policy Framework (APF). Demonstration of MSFD principles: yellow rectangles=EU studies; green rectangles=non-EU studies. Area for development of APF=shaded rectangles



EU-FP7 Project SeaDataNet II Pan-European infrastructure for ocean and marine data management

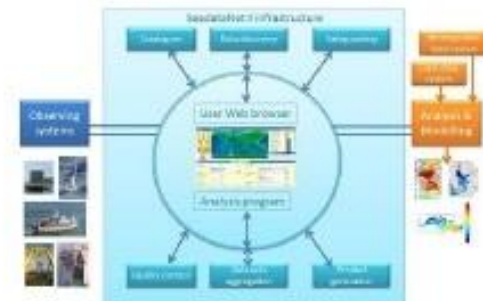
www.seadatanet.org

Project duration: 1.10.2011 – 31.09.2015

Partners: The SeaDataNet II consortium includes 44 partners

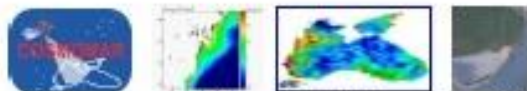
The overall objective of the SeaDataNet II project is to upgrade the SeaDataNet infrastructure into an operationally robust and state-of-the-art Pan-European infrastructure for providing up-to-date and high quality access to ocean and marine metadata, data and data products originating from data acquisition activities by all engaged coastal states, by setting, adopting and promoting common data management standards and by realizing technical and semantic interoperability with other relevant data management systems and initiatives on behalf of science, environmental management, policy making, and economy.

SeaDataNet is a standardized system for managing the large and diverse data sets collected by the oceanographic fleets and the automatic observation systems. The SeaDataNet infrastructure networks and enhances the currently existing infrastructures, which are the national oceanographic data centres of 35 countries, active in data collection. The networking of these professional data centres, in a unique virtual data management system provide integrated data sets of standardized quality on-line. As a research infrastructure, SeaDataNet contributes to build research excellence in Europe, provision capacities in close cooperation with MyOcean, EuroGOOS, its Regions (ROOSes), and other oceanographic monitoring agencies and systems.



On-going projects(4)

Project Name: "Constanta Space Technologies Competence Centre Dedicated to the Romanian Marine and Coastal Regions Sustainable Development"



Acronym: COSMOMAR, contract nr. 58/2013

Project Founded by ROSA through Program for Research-Development-Innovation for Space Technology and Advanced Research – STAR

Project manager (name and contact address): Dr. eng. Razvan Mateescu, razvan_doru@yahoo.com

Collaborators organization(s): UOC, S.C. ET Innovative Solutions S.R.L., INCDOD, UB-FG, UDRG
Start date of the project / End date of the project: 11.2013 / 11.2016 (36months)

Project goal

The overall goal of the project is the development of a Competence Center in spatial technologies for the South-East Region of Romania, having the use of space technologies and remote sensing data as main application area, towards monitoring and rapid assessment of the marine and coastal environment state, development of environmental friendly bio-technologies and materials with applicability in spatial programs, as well for support of local and regional small, medium and big enterprises development in accessing opportunities of the EU spatial programs.

Objectives

1. Development of a research infrastructure facilitating the cooperation and networking within coastal stakeholders, on Remote Sensing and Space applicability research projects;
2. Competences development and capacity building which will enhance the consultancy and expertise towards accessing research programs at ESA's excellence standards;
3. Dissemination of the knowledge and opportunities in the spatial research domain, through an interactive website designed as an informational node for coastal stakeholders as well for private enterprises from the region;
4. Promotion of an innovative, original research results, products and technologies realized in the space industry by the regional institutions and firms, (as well the knowledge and technology transfer to them), towards their integration in ESA projects and programs.
5. Encouraging young people from high schools and universities to address the knowledge in the field of space, as well to promote career planning in space research, environmental education and awareness.
6. The development of a dedicated facility for assuring clean room conditions for the development of devices and experimental set ups for spatial applications as advanced fuel cells and electrochemical devices for outer space missions, biotechnological research projects dedicated to the identification Pilot Projects started within COSMOMAR Competence Center

1. Development of fuel cells based on urea and robust MEAs (Membrane Electrode Assemblies), helping to improve our knowledge in microbial fuel cell technology that will have several applications in the space sector.

2. Development of facilities of "clean room" necessary to develop the devices and procedures for space applications.

3. Center initialization related to the selection, training and testing of technologies monitoring/coastal surveillance remote sensing using AUVs/drones, in order to implement ICZM and marine EU strategies



ECOMAGIS Project PN2-32164/2008

Objectives

The purpose is to: create an operational informational system that can supply meta-hydro-bio-geomorphological data collected near the coastal zone, support at a regional scale decisions

-Supplement of data and base information to support the management/monitoring effort of the coastal marine system.

- Supplement of information, evaluation, forecast and warning on the ecological state in pilot area of the coastal zone based on the coastal monitoring form a far/automatic, for the development of a coastal management based on the needs of the ecosystem

- Distribute the information and the forecast data to the relevant organisms and interest factors of the coastal zone The creation of a web portal, as a synergetic combination innovation solution of the data and the information provided by the different sensors, as well as for the data change and information between regional and local interest factors.

Results and Outputs

The study on the initial conditions of the coastal ecosystem, as well as the projection and expansion of a local/pilot monitoring integrated system, of the impact factors against the ecological state of the coastal system. The evaluation tendency of evolution of the marine system and of the specific ecological interaction complex process of the North-East basin of the Black Sea. The evaluation of coastal and marine ecological vulnerability is tied to the actual climate modifications. The harmonization of the editing methods of the data/management optimization and the information on the hydro-bio-geomorphological marine and coastal processes. Accomplish a system of informational integrated operational that can monitor continuously the coastal zones to develop a management based on the ecosystem's dynamic. Identify technical solutions and possibilities of coastal reconstruction/rehabilitation, as well as choosing the optimization measures of the system quality. Develop a guidance, movies and instruction material on the general and specific problems that can be found in the Romanian coastal zone. Accomplish some commonplace scientific events, press conferences for advertising and information, that are achieved together with the local and regional/national interest factors, distributing the informational material about the implementing activities in the project, distributing data and reference information to the public sector and to different interest factors from the coastal zone.

Duration: 30 months (01.06.2012-30.06.2015)

Financed by: UEFISCDI (National Authority: UNITATEA EXECUTIVA PENTRU FINANȚAREA ACTIVITĂȚII SUPERIORE A CERCETĂRII DEZVOLTĂRII ȘI INOVĂRII)

Core project team:

CO – NIMRD: Razvan Mateescu Viorel Malciu, Dragoș Niculescu, Luminita Buga, Alina Spinu, George Sirbu, Alexandru Cindescu, Elena Vlascoanu

P1 – Siveco: Cristina Cirlig, Octavian Goicea, Anisoara Praiu

P2 – Ovidius University: Marius Figarus, Ichinar Mirzali, Manuela Samargiu, Lucica Tofan

P3 – University of Bucharest: Georgeta Bandoc, Ionut Ovejanu

web site: <http://www.rucei.ro/RM/EUNationalPrograms/ECOMAGIS1/index.html>

On-going projects (6)



Bio-Optical Characterization of the Black Sea for Remote Sensing Applications

Partners:

Institute of Marine Sciences, Middle East Technical University, Erdemli, Turkey
Institute of Oceanology, Bulgarian Academy of Sciences, Varna, Bulgaria
Marine Hydrophysical Institute Sevastopol, Ukraine
National Institute for Marine Research-Development, Constanta, Romania
Shirshov Institute of Oceanology, Moscow, Russia

NATO Science for Peace Project # 982678

Objectives

The proposed project, within the framework of the environmental security research topic, aims at the implementation of a tool to support remote sensing applications for operational environmental monitoring and climate studies in the Black Sea. This final objective is expected to be achieved through the implementation of new models and algorithms in a processing chain for ocean color imagery. The new models and algorithms for the quantification of the concentration of seawater optically significant constituents (mostly chlorophyll *a*, total suspended matter and yellow substance), will result from the analysis and application of comprehensive *in situ* bio-optical measurements of optical properties (inherent and apparent) and concentration of seawater optically significant constituents performed during two major oceanographic campaigns.

Milestones

Milestones of the project are:

- i. the completion of field activities scheduled during the second and third year (during the third year the field activities should be preferably completed within the first semester);
- ii. the data analysis and modeling (starting from the second semester of the second year); and iii. the distribution of assessed ocean color product (including maps of chlorophyll *a*, total suspended matter and yellow substance from the second semester of the third year). Accordingly deliverables are: i. tested equipment for field work (by the beginning of the second semester of the first year); ii. assessed measurement protocols for field measurements (by the end of the first year);
- iii. quality assured bio-optical data from two field campaigns (by the middle of the second and third year); iv. regional bio-optical algorithms (during the first semester of the third year); v. advanced ocean color products of the Black Sea accessible through web interface (from the second semester of the third year).

Core-team:

Dr. Tamsil Ognuz
Dr. Atanas Palazov
Dr. Michael Leo
Dr. Viorel Malciu
Dr. Oleg Kopelevich



OCEAN COLOR - APPLICATION FOR THE WESTERN BLACK SEA

Partners:

National Institute for Marine Research and Development (NIMRD) Grigore Antipa, Romania
Maritime Hydrographic Directorate (MHD), Constanta, Romania
Research Center of the Navy, Constanta, Romania
Institute of Oceanology, Bulgarian Academy of Sciences (IO-BAS), Bulgaria, Varna
Joint Research Centre of EC (JRC), Ispra, Italy (through a Letter of Endorsement)

Funding Agencies

European Space Agency (ESA) within the framework of the MERIS Validation activities.
Romanian Space Agency (ROSA) within the framework of the PECS activities.

Current Status and Objectives

The project, within the framework of ESA and ROSA coordinated activities, and with the collaboration of JRC, aims at carrying out dedicated bio-optical cruises in the Romanian waters influenced by the Danube discharges. The data collection carried out by the partnership will basically rely on the equipment and methodologies regularly applied by the JRC for mapping the bio-optical properties of the European seas and complying with the MERIS Validation Team protocols. The *in situ* data collected during these cruises will then be applied: *i*. to verify the consistency of the models utilized for the atmospheric correction process in sediment dominated waters with specific reference to the MERIS bright pixel atmospheric correction; *ii*. to support the development of regional bio-optical algorithms and models for the determination of optically significant seawater constituents in the form of concentration or inherent optical properties from satellite ocean color sensor data (with the highest priority for MERIS imagery).

The project also aims at operating an autonomous above-water radiometer on an oil platform in front of the Romanian coast. This system will produce data which will be used for the continuous assessment of the atmospheric correction process of current satellite ocean color sensors (with the highest priority for MERIS). The autonomous radiometer will be provided by the JRC and will be part of the international AERONET-OC network. The long-term operation of the system will be taken over by NIMRD "Grigore Antipa" with the support of the JRC. The system will ensure real-time transmission of data. These will be available to the project partnership without restrictions from the AERONET - OC data base and also from the ESA MERMAID server. The operation of the above-water system will be complemented by an ADCP (Acoustic Doppler Current Profile) operated near the deployment platform to monitor sea currents and wave regimes. The data exploitation will comprise the continuous analysis of *in-situ* and satellite match-up data, and an evaluation of the sea current effects on them.

The development and execution of this project will benefit from complementary activities carried out in the Black Sea within the framework of the project Bio-Optical Characterization of the Black Sea for Remote Sensing Applications (NATO Science for Peace Project # 982678). The project will also benefit from the NIMRD data archive of transparency and sea color produced during different oceanographic cruises from 1971 to 2009.



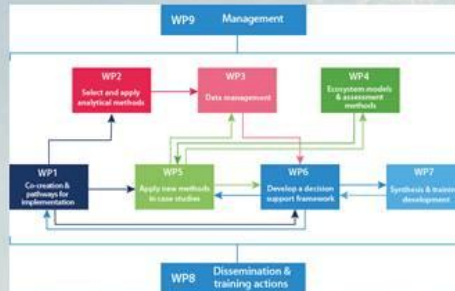
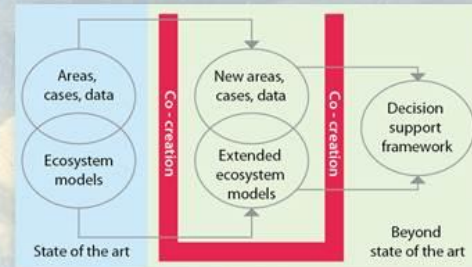
Co-creating Ecosystem-based Fisheries Management Solutions

CONCEPT

MareFrame is an EC-funded research project which seeks to significantly increase the use of the ecosystem-based approach to fisheries management (EAFM) when providing advice relating to European fish stocks

The project aims to do this through the development of:

- new tools and technologies;
- ecosystem models and assessment methods;
- a decision support framework.



STRATEGY:

The collective intelligence of the MareFrame project is integrated across 28 partners and focused on enhancing the capacity to provide integrated assessment, advice and decision support for an ecosystem based approach to fisheries management, leading to a stage feasible for implementation. This will be done combining three approaches: collaboration across scientific fields; collaboration on fisheries in different ecosystems; and the co-creation approach which merges analytical and participatory processes in collaborative research with stakeholders.

OBJECTIVES:

MareFrame aims to remove the barriers preventing more widespread use of EAFM by considering a range of different ecosystem models and adapting these to meet the needs of managers and operators. It will also include novel analytical data to increase our understanding of marine ecology, and work with stakeholders to highlight the consequences and benefits of various alternative management scenarios. The project will address important issues within the Common Fisheries Policy (CFP), the Marine Strategy Framework Directive (MSFD) and the Habitats Directive (HD).

PARTNERS:



More details: www.mareframe-fp7.org

North Sea

CS Leader: John Pope, NRC
Advisory Councils involved: NSRAC, PRAC
Models: GADGET, EwE, Multispecies production models, Size spectra

Northern & Western Waters: Iceland

CS Leader: Guðmundur Þórðarsson, MRI
Models: GADGET, EwE and Atlantis

Northern & Western Waters: West of Scotland

CS Leader: Paul Fernandes, UNIABDN
Advisory Councils involved: NW WRAC and PRAC
Models: EwE and FishSum

South Western Waters: Iberian Waters

CS Leader: Javier Ruiz, CSIC
Advisory Councils involved: SW WRAC
Models: GADGET

Mediterranean Strait of Sicily

CS Leader: Francesco Colloca, CNR
Advisory Councils involved: RACMED
Models: GADGET and Atlantis

Baltic Sea

CS Leader: Valerio Bartolino, SLU
Advisory Councils involved: BSRAC
Models: GADGET, EwE, Multispecies production model

Black Sea

CS Leader: Gheorghe Radu, INCDM
Advisory Councils involved: RAC FOMLRM, forthcoming Black Sea AC
Models: GADGET and EwE

New Zealand

CS Leader: Ian Tuck, NIWA
Models: Atlantis



BILATERAL COLLABORATION WITH P.R. CHINA

- “The introduction and study on fry production of Black Sea turbot *Psetta maeotica* and flounder *Platichthys flesus luscus*”: partner LAIZHOU MINGBO AQUATIC Co. Ltd., SHANDONG PROVINCE
- “Wireless Sensor Network Based Intelligence Monitoring Method for Aquatic Product Quality Safety Management”: partner CHINA AGRICULTURAL UNIVERSITY BEIJING
- “Quality Intelligent Sensing and Information Processing technology for fish product during cold chain management”: partner CHINA AGRICULTURAL UNIVERSITY BEIJING
- Comparative study on plankton from Daya Bay (China) and Romanian littoral and response on anthropogenic changes - SOUTH CHINA SEA INSTITUTE OF OCEANOLOGY, Chinese Academy of Sciences,



THANK YOU FOR YOUR ATTENTION!

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