

The 4th E-newsletter of the TIMMOD Project

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TIMMOD PROGRESS



The temporary letup of some of the travel restrictions and the COVID-19 measures in the summer of 2021 brought its positive impact on the TIMMOD project events and ongoing activities. The main meetings and the milestone pilot demonstration survey in Black Sea were successfully organized in live with participation of all project partners, stakeholders, external experts and guests.



In the fourth quarter edition of TIMMOD electronic Newsletter you can read about the project activities conducted from May 2021 till September 2021:

- TIMMOD Sea survey and pilot demonstration project in the coastal area of Bulgarian Black Sea.
- Innovative Technologies for assessment of fish stock and non fish resources discussed and presented during the third Thematic Transboundary Meeting.
- Seminar on Technological Innovations presentations and demonstrations of monitoring equipment, data handling ICT tools, GIS tools, visualisation software part.
- Overview on project progress and main decisions from Project Management and Coordination Team & Steering Committee Meetings.
- Raising awareness and dissemination of project results during the fourth Dissemination Event in Varna, Bulgaria.
- Digital activities organized within digital promotional campaign in Bulgaria;
- Summary of the report on Recommendations on adoption of appropriate technology innovation and promotion of best practices for marine environmental monitoring at Black Sea.
- Web based open ICT Tools.
- Coming next.



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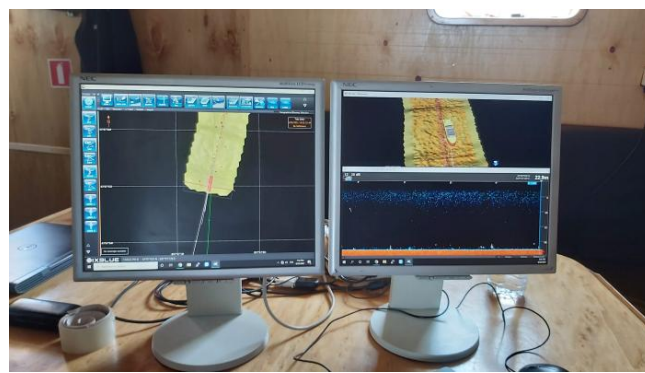
TIMMOD Sea survey and pilot demonstration project in the coastal area of Bulgarian Black Sea.



The 1st Pilot Demonstrations Tests, Training and Sea-survey using Innovative Monitoring Equipment started on 22 June 2021 in Varna, Bulgaria with 14 days duration. The event was organized and hosted by Black Sea - Danube Association of Research and Development (BDCA) together with the lead Beneficiary Institute of Fish Resources - Varna (IFR), who provided the research vessel and the set of advanced monitoring sensors and instruments.



Despite the uncertainties and several travel restrictions due to Covid-19, experts from all TIMMOD project partners successfully arrived in Bulgaria and participated in the survey. Facing several challenges like bad weather conditions and exploration of unknown devices the team successfully completed all tasks included in the survey programme.



The program included demonstration and trainings on innovative equipment in the western Black Sea coast together with biological sample collection and trawling. The main objectives of the demonstration survey were achieved, providing excellent basis for further implementation of TIMMOD work plan.



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Innovative Technologies for assessment of fish stock and non fish resources discussed and presented during the third Thematic Transboundary Meeting (TTM#3)

The 3rd Thematic Transboundary Meeting (TTM#3) on innovative environmental monitoring and modelling technologies for assessment of fish stock and non-fish resources was organized on 5th and 6th July in Varna, Bulgaria. The meeting was hosted by Black Sea Danube Association of research and development (BDCA) as a hybrid event with live participation of involved partners, stakeholders and guests in Art Saloon Radio Varna, Varna, Bulgaria and online participants in MS Teams platform.



The main goal of the event was to raise awareness of researchers, surveyors and decision makers in innovative technologies for monitoring of environmental parameters and assessment of fish stock & non-fish resources at Black Sea.

The 3rd TTM was attended by more than 40 participants from six Black Sea countries. Main focus of the event was an overview of the first pilot demonstration survey and training, organized in Varna, Bulgaria in the period from 22 June 2021 until 5 July 2021., The used equipment, the research vessel, survey programme and participants, were presented and discussed, together with main challenges and first conclusions from the demonstration and trainings programme.



The TTM#3 finished with a fruitful roundtable discussion focused on potential of usage of innovative monitoring equipment in the Black Sea region, possible opportunities for further cooperation, need of research and investment initiatives, targeted to improve joint monitoring and cross-border data exchange - this way contributing to BSB Program result 2.1 "Improved availability of cross-border compatible environmental monitoring data and information".

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Seminar on Technological Innovations presentations and demonstrations of monitoring equipment, data handling ICT tools, GIS tools, visualisation software part.

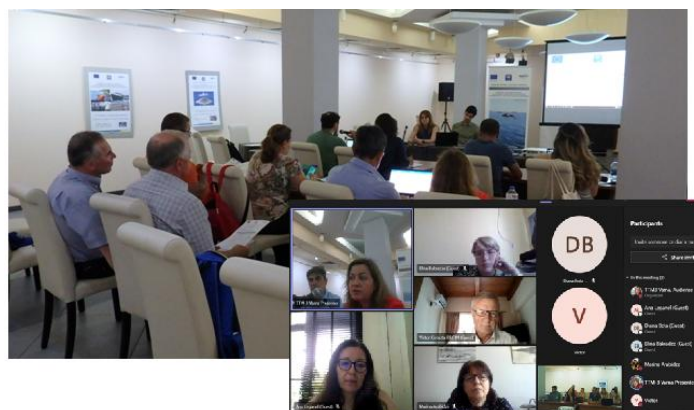


The program of the Seminar session on 6th July 2021 included a number of invited lectures and presentations, within the main theme of the event, as follows:

- Methods and tools for estimation of the fish stock;
- Data collection and real-time visualization/demonstration using ICT tools
- Assessment of fish stock and non-fish resources at Bulgarian Black Sea coast
- Innovative techniques for non-fish resources stock assessment
- Development of Aquacultures along the Black Sea Coast; Sustainable use of Black Sea resources and Blue Economy.

Overview on project progress and main decisions from Project Management and Coordination Team & Steering Committee Meetings.

The 3rd formal meeting of the Program Management and Coordination Team took place in Varna, Bulgaria, on 6th of July 2021 (broadcasted also online via MS Teams). The meeting was held as an associated event to the 3rd Transboundary Thematic Meeting (TTM), following the 1st Pilot Demonstration Project held in Varna, 22 June - 5th July. PMCT group representatives from all partners attended the meeting. Meeting was focused on the up-to-date status of the ongoing and forthcoming activities, presented and discussed by GA Leaders, PPs Financial Managers, and all PPs representatives.



The 3rd SCOM meeting took place on the following day, 7th July 2021. All PPs official representative - members of SCOM participated in the meeting, where decisions were voted regarding current and forthcoming project activities.



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Raising awareness and dissemination of project results during the fourth Dissemination Event in Varna, Bulgaria.

The 4th Dissemination Event of the TIMMOD project was organized on 7th of July 2021 in Varna, Bulgaria as a hybrid meeting with live participation of involved partners, stakeholders and guests in Art Saloon Radio Varna and online participants in MS Teams platform. The event was hosted by Project Partner 2 - Black Sea - Danube Association of Research and Development (BDCA) - Varna.



The aim of the event was to present in local language the TIMMOD project in a nutshell in front of different local stakeholders and interested parties. The main goals, activities, and expected results of the TIMMOD project were presented with a focus on the activities led by the Bulgarian partners IFR and BDCA together with the ongoing tasks within the project. Participants from different stakeholders such as Executive Agency of

Fisheries and Aquaculture (EAFA) at the Minister of Agriculture and Foods, Naval Academy-Varna, Marine Cluster Bulgaria, Black Sea Basin Directorate, Marine Administration - Varna, Bulgarian Ship Hydrodynamics Centre showed great interest in the project and actively participated in the dissemination event.

Main results of the field research and the pilot demonstrations tests and training for practical use of innovative hardware and software tools were presented during the event. The application of modern innovative technologies for hydrographic measurements and survey, monitoring of fish schools and non-fish resources, measurements of basic physical and chemical sea water parameters, numerical modelling, data sharing and dissemination via web-GIS were the most discussed topics.

The project was also presented to the wider public in a special interview for local media: ["Innovative Technologies for assessment of fish stock and non fish resources"](#).



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Digital activities organized within digital promotional campaign in Bulgaria

Specialized digital promotional campaign had been organized in Bulgaria in the period June-July 2021 related to the series of TIMMOD events hosted in Varna, Bulgaria- Demo tests & training at Black sea coastal area, Thematic Transboundary Meeting #3 and Dissemination event #4. The events were hosted by Black Sea Danube Association of research and development (BDCA)- Varna together with the lead Beneficiary Institute of Fish Resources - Varna (IFR), who provided the research vessel and the set of advanced monitoring sensors and instruments for the sea survey.

TIMMOD develops its presence online through the created social media channels and web page, where several promotional activities were organized: press release dissemination, involvement of stakeholders, updates with project news, dissemination of leaflets, brochures, newsletters, interviews for local media, dissemination of movie on demo tests and other communication activities.

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Summary of the report on Recommendations on adoption of appropriate technology innovation and promotion of best practices for marine environmental monitoring at Black Sea.

The report presents tailor-made recommendations on spread-out and adoption of identified appropriate technology innovation and best practices for water environmental monitoring and collecting data for non-fish and fish stock assessments.



The recommendations report cover:

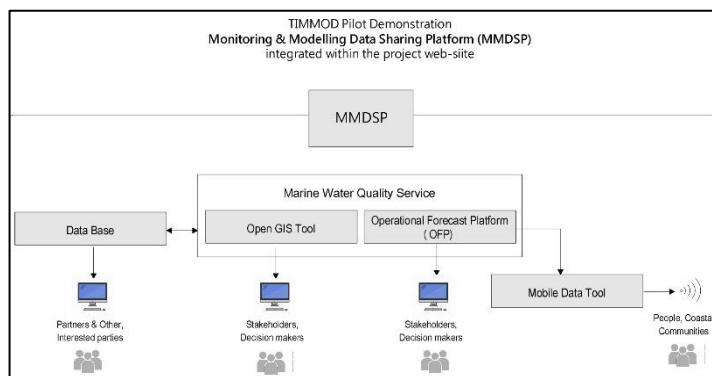
- various equipment/platforms, i.e., vessels, boats, buoys, satellites, autonomous surface vehicles, remote operated vehicles;
- new-generation sensors, by technology (e.g., acoustics, infrared); and by type (e.g., turbidity sensor, nitrate sensor, fish-count sensor, etc.);
- various methodologies of data collection/sampling/measurements, including methods/ tools of real-time measurements, advanced tools for water sampling for lab analysis, etc.
- ICT tools/software for data handling/transmission technologies, e.g. radio telemetry, satellite transfer, etc.; software tools for data handling and visualization, including recent cloud technologies and web-based solutions.

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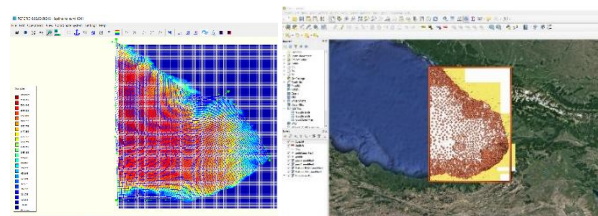
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Web-based ICT tools: GIS, database, codes and open-source software for environmental modelling..

The Group of Activities T2 about the assessment and recommendation on advanced hydro-environmental numerical tools for data handling, real-time control and forecasting of marine conditions in the Black Sea has started to produce its first Deliverables, i.e., Deliverable D.T2.1.1 “*Web-based open GIS tool for implementation of modelled data by stakeholders and end-users, including a database of hydro-environmental monitoring and modelling output and future projections*”. In it, all the tasks related to the formulation of the database and initial form of the open GIS tool are described.

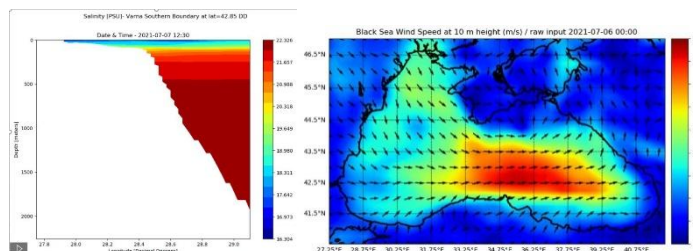


The digitization of georeferenced bathymetric data by GEBCO, EMODnet, and Navionics platforms used within the advanced 3-D hydrodynamic simulations with Delft3D model have also been completed.



For the second Deliverable D.T2.2.1 “*Technical report on results and impacts of advanced methods in coupled oceanographic-hydrodynamic modelling*” the interaction with the Copernicus Marine Services’ platform have also been solidified by “*motu-client*” Python language coding to retrieve reliable boundary conditions of oceanographic parameters for forecast Delft3D runs in Batumi/Varna coastal zones.

The atmospheric forcing input to the Delft3D has also been configured together with initial estimations of local Bulgarian and Georgian river discharges’ input to allow for the first hydrodynamic circulation simulations in the two pilot test sites, Varna and Batumi (see graph for 2-D vertical cross-section of Salinity in Varna’s continental shelf).



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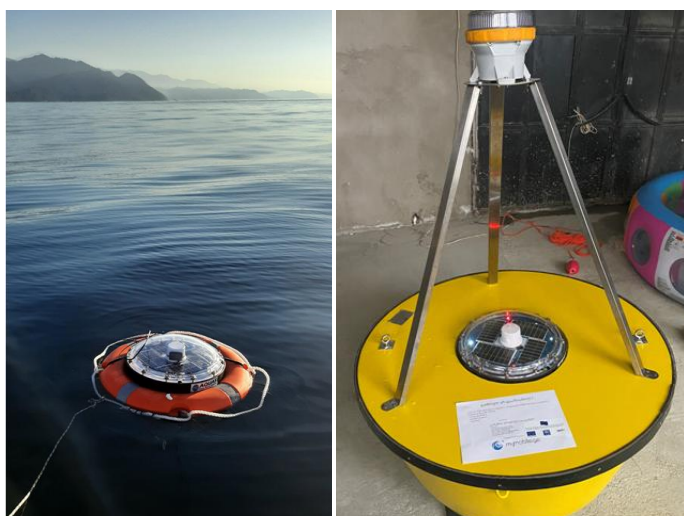
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Coming next.

Demo tests & training at Black Sea - Batumi, Georgia. Demonstration of innovative instrumentation, data handling and numerical modeling tools will continue on the second Black sea sites- Batumi, Georgia.

The demonstration in Georgia will be conducted in 2 week trainings, planned for the middle of October of 2021, including:

- Deployment of the measurement equipment on research vessel platform;
- Preliminary testing and calibration of measurement devices;



- Real-time measurements in marine environment;
- Transfer of data to a land based station (in parallel to recording in data loggers);
- Web-based visualization (in real time);
- Providing input for numerical models;

A series of events will be attached to the Demo tests and trainings in Georgia:



- The 4th Thematic Transboundary Meeting (TTM#4) focused on practical issues and further steps for adoption of demonstrated tools and methodologies;
- The fifth project Dissemination event;
- Regular SCOM and PMCT meetings;
- Digital promotional campaign in Georgia;

Main findings and results will be promoted in the first draft version of the Innovation Strategy- toward technological upgrade of environmental monitoring and modeling, improving data sharing and cross-border information exchange systems.

National validation of the Innovation Strategy will follow, including discussions and validation at 5 National Workshops organized in project partner countries, with key monitoring-performers, decision makers, local and national authorities and relevant stakeholders.



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TIMMOD PROMOTES INNOVATIONS IN ENVIRONMENTAL MONITORING



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In memory of Victor Cotruta!

TIMMOD Project Team is expressing their great sorrow and sadness from the lost of our friend, colleague and partner Victor Cotruta, who passed away on September 14th 2021.



Joint Operational Programme Black Sea Basin 2014-2020

Regional Environmental Centre Moldova

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