|  |  |
| --- | --- |
| cid:image001.jpg@01D2EAC1.622CDA20 | EUROPEAN COMMISSIONDIRECTORATE-GENERAL FOR MARITIME AFFAIRS AND FISHERIESMaritime Policy and Blue Economy |
|  | EUROPEAN COMMISSIONDIRECTORATE-GENERAL FOR RESEARCH & INNOVATIONBioeconomy |

3rd Meeting for developing a Blue Growth initiative for Research and Innovation in the Black Sea

*Brussels, 11 December 2017*

*Summary of the discussions*

The main objectives of this 3rd meeting of the expert group were

* to finalise the mapping of existing national or regional projects / initiatives and
* to discuss and agree on the next steps, mainly related to the drafting of the Vision Paper and the draft Strategic Research and Innovation Agenda (SRIA).

Representatives of the European Global Ocean Observing System (EuroGOOS), French Research Institute for Exploitation of the Sea (IFREMER) and the German Marine Research Consortium (KDM) joined the core group to brief about their activities in the Black Sea and bilateral cooperation with the marine research institutions in the coastal countries.

The discussions focused on the challenges in compiling the data in the matrix of marine research projects and the first findings emerging from it. The outline of the Vision Paper for the SRIA was discussed. The Vision Paper and the first draft SRIA are planned to be presented at the European Maritime Day (31.05 – 01.06.2017) in Burgas (Bulgaria) under the Bulgarian Presidency of the Council of the EU (½ 2018).

Besides the above-mentioned organisations, researchers from Romania (RO), Turkey (TR), Georgia (GE), Ukraine (UA), Moldova (MD), Russia (RU), and the Black Sea Economic Cooperation (BSEC) were present, as well as the European External Action Service. The full list of participants is attached (see Annex 2).

The representative of the IO-BAS and ICBSS were unable to join the meeting due to the weather conditions.

The following summary builds on the meeting agenda (see Annex 1) and summarises the main take outs of the discussions under the respective agenda point.

**Welcome**

* Ms Sigi Gruber (DG RTD) *opened the meeting* and *recalled* the policy context driving the EU action in the Black Sea and the fact that the Commission will keep facilitating the work of the research community towards elaborating a strategic research and innovation agenda (i.e. "SRIA" or "*Blue Growth initiative for Research and Innovation"*) for the Black Sea. The SRIA can become a programmatic tool for defining national priorities in this area. The SRIA can become an important pillar of a broader maritime strategy (common maritime agenda) for the Black Sea. The work on the latter is ongoing through a separate process.
* The Commission summarised the results of the first two meetings, highlighting the productive and lively debates in Batumi. It also welcomed the progress on collecting of data from the research projects being implemented in the Black Sea region over the last 10 years. The importance of using this data to identify research gaps (in the region and in each coastal country) and common challenges was reiterated.
* The Commission explained that if the core group successfully elaborates the SRIA, this initiative could help unlock a dedicated action funded by Horizon 2020 ("Coordination and Support Action for the Black sea" worth 2 million euros) and support tuning of existing/future funds (post 2020) to match the strategic development priorities agreed by the research community and the Black Sea countries.
* The Commission presented the "newcomers" to the group, namely the European Global Ocean Observing System (EuroGOOS) and the German Marine Research Consortium (KDM). Sharing their experience and knowledge about the Black Sea, including through the wide network of bilateral contacts with the coastal countries and institutions, will help in the process of identifying the research gaps and the identification of common research priorities. The continuous engagement of the French Research Institute for Exploitation of the Sea (IFREMER) was welcomed in this context.

**Presentation by the European Global Ocean Observing System (EuroGOOS),**

* Mr Glenn Nolan, Secretary General of EuroGOOS) presented the organisation he is leading and explained how ocean observing and forecasting underpins research and innovation in the Black Sea. The results of various ongoing projects and activities, incl. deployed operational capacities such as the EuroArgo probes, were highlighted in a comprehensive manner. The presentation is attached.
* EuroGOOS will contribute to the ongoing mapping process carried out by the expert group.

**Presentation on the German research cooperation in the Black Sea basin, German Marine Research Consortium (KDM)**

* Mr Jan-Stefan Fritz, Head of Brussels Office of KDM, presented the German experience in cooperation in the marine research domain in the Black Sea, highlighting a plethora of bilateral initiatives with key institutes and stakeholders (NGO, industry, international organisations) in the Black Sea. Different areas of scientific interest were presented such as infrastructure development, coastal and ocean observations, bio-geo-chemistry, geology, but also ship-based cooperation and ocean literacy (incl. summer schools, cooperation between marine museums).The presentation is attached.
* The presentation gave rise to discussions about the definition and inclusion of research on the land-sea interactions. It was concluded that the SRIA should follow an open approach by embracing fully the land-sea interactions and their impact on the marine environment.
* The Commission committed to present at the next meeting 15 infrastructures related to the marine and maritime domain identified at EU level (all sea basins) that are considered key for the sustainable management of the marine resources.

**The matrix of marine research projects: state of play**

* Dr Mustafa YÜCEL (Institute of Marine Sciences, METU, TR) presented the current state of play of the matrix of marine research projects (Matrix A). It was stressed that good amount of information was already provided by the countries, notably BG, RO and TR, but additional effort is required in order to allow a comprehensive and genuine picture of the 24 main research and innovation areas (R&I areas). Additional contributions from MD, RU and UA were seen as essential.
* The following state of play of the information available for the agreed R&I areas in Matrix A emerged:
	+ *Biodiversity*: most of the projects are mapped (TR, BG, RO, RU, GE); data collection is ongoing; additional information would be appreciated, notably from UA and MD;
	+ *Biological invasions:* BG and TR have contributed, yet additional information from RO, UA, RU and GE would be appreciated;
	+ *Catchment-sea interactions:* BG, RU, TR and GE have contributed; however, more information from all countries is needed though;
	+ *Climate change and related impacts:* TR, RU and BG have contributed to date; all countries are invited to feed the database;
	+ *Cultural heritage:* scarce information on underwater cultural heritage; RO suggested including also coastal heritage at this stage; MARE/EASME, BG and RO to provide more information; all countries are invited to feed the database;
	+ *Deep-sea ecosystem:* only BG has contributed to date; all countries are invited to feed the database;
	+ *Ecosystem/multiple stressors:* only TR has contributed to date; all countries are invited to feed the database;
	+ *Eutrophication and deoxygenation:* only TR has contributed to date; all countries are invited to feed the database;
	+ *Interaction between sea basins:* TR and RU has contributed to date; all countries are invited to feed the database;
	+ *Marine ecosystem services:* only TR has contributed to date; all countries are invited to feed the database;
	+ *Marine pollution and litter:* TR, GE and BG have contributed already; more information from all countries is needed.
	+ *Marine and coastal hazards:* more information is needed; the findings in the MED could be useful; the Commission to check also projects from other sea basins that could have case studies on marine and coastal hazards in the Black Sea;
	+ *Sea and human health:* even though BG and TR contributed, more information from all countries is needed;
	+ *Blue biotech:* little (BG) to no information is available; The Commission to verify with the relevant thematic divisions; MEDCOAST is invited to provide additional information;
	+ *Deep-sea mining /oil and gas:* so far only TR, BG and GE have contributed; RO invited to provide recent data; IFREMER and KDM could have additional data too;
	+ *Living marine resources:* data is sufficient and quite comprehensive;
	+ *Tourism and economy:* no research focus emerged from the present information in the table; more information is needed or reorganisation of this R&I area to be considered; contributions so far by TR, RU and GE;
	+ *Marine renewables (MRE):* more information is needed; cross-fertilisation with the R&I area on maritime spatial planning to be sought; contributions so far by RU, BG and TR;
	+ *Maritime transport:* BG and TR have contributed but more information from all countries would be welcome;
	+ *Maritime spatial planning and ICZM:* data is sufficient and quite comprehensive; the results of the pilot project (MARSPLAN) would be welcome; RU and other countries pointed out to the different approach applied to plan the marine space; so far TR, RU and BG have contributed;
	+ *Operational oceanography:* the amount of data is good thanks to TR, GE and BG;
	+ *Socio-economic and policy research (policies based on indicators):* the present information is sufficient;
	+ *Training and technological transfer:* the present information is sufficient; contributions from GE, TR, RU, BG;
	+ *Others*: contribution by RU.
* The gaps, needs and opportunities related to the above-listed R&I areas are presented in the updated Matrix A (see attached). The following trends emerge:
	+ *Biodiversity*: macrofaunal, benthic and pelagic diversity is mostly known; primary gaps are associated with microbial-fungal and virus biodiversity and functional relationships within this biodiversity;
	+ *Biological invasions:* a seemingly well-studied area but major gaps are identified on the pathways of invasions and subsequent long-term alteration on ecosystem functions;
	+ *Catchment-sea interactions:* rising interest in this thematic area as exemplified by numerous projects targeting the Danube region, notably the recent ESFRI initiative; however watershed to open-sea integrated studies are lacking; in the Turkish coast land-sea integrated studies are completely lacking; big need and a major opportunity for the joining of forces of land disciplines (limnology hydrology, terrestrial ecology) and sea disciplines (oceanography, marine biology);
	+ *Climate change and related impacts:* a very broad area but major needs and gaps are about reducing uncertainties on the impact of climate change at both basin scale and at regional scale where extreme events will have a large impact; notable opportunities include carbon sequestration capacity of the anoxic Black Sea basin;
	+ *Cultural heritage:* lack of coordination between countries was noted as a major gap; unprecedented opportunity for submarine cultural heritage in the Black Sea;
	+ *Deep-sea ecosystem:* large knowledge, seagoing technology and expertise gaps in the Black Sea countries in this thematic area; the basin presents huge opportunities with regard to Black Sea’s unique model role as the largest anoxic basin; cold seeps and microbial reefs present unique extreme ecosystems which can host novel biotech products and genetic potential; mapping of deep sea habitats are urgently needed;
	+ *Ecosystem/multiple stressors:* major research effort is needed on the synergistic impact of multiple stressors. Gaps hinder the understanding of how multi-stressors will impact future blue economy sectors;
	+ *Eutrophication and deoxygenation:* another seemingly well studied area but there is a surprising emphasis on lack of long-term data, at least for the Western and Southern coastal regions. If more updates are received from Ukraine and Russia this picture may change;
	+ *Interaction between sea basins:* exchanges between Marmara and Black Sea need to be studied more; again, the primary gap here is long-term observations;
	+ *Marine ecosystem services:* an area which almost completely lacks knowledge. Services from Black Sea ecosystem are not defined and their monetary value has not been quantified;
	+ *Marine pollution and litter:* many activities are listed in this area but major gaps are also noted, including lack of common methodology and impacts of pollutions on ecosystem functioning; major research needs are about novel type of pollutants including nano-size pollutants, noise and e-wastes; more information from authorities are needed on point and diffuse pollution sources.
	+ *Marine and coastal hazards:* major research gaps exist, including geohazards and integrated studies on prediction and mitigation;
	+ *Sea and human health:* a very broad area and gaps and needs are very broadly defined; an emphasis on the need for genomic methods should be noted;
	+ *Blue biotech:* very limited activity on this but the community thinks this is the area presenting one of the most set of opportunities; the Black Sea includes many different habitats and unique extreme ecosystems which may host novel bio-products and genetic capabilities;
	+ *Deep-sea mining /oil and gas:* many activities but public data and results are lacking; major research need is on the environmental impacts on oil and gas extraction; example from North Sea publications are listed;
	+ *Living marine resources:* very active area but major gaps on the integrated management of living resources; key research needs include links between lower trophic levels and fisheries;
	+ *Tourism and economy:* the inputs here mostly related to sectoral situation; research gaps and needs on tourism and economy have not been successfully identified;
	+ *Marine renewables (MRE):* the community put great emphasis on new technologies, environmental impact assessment and industry involvement as major gaps; urgent need to start Marine Spatial Planning towards implementation of marine energy;
	+ *Maritime spatial planning and ICZM:* research needs include common methodologies for MSP practice and selection of pilot regions where the community along with public sector develops the skill to design and implement MSP.
	+ *Operational oceanography:* while the amount of data is good and links with global/European observing systems exist, there are huge gaps on the application of novel observatory concepts and especially biogeochemical sensors; emphasis on multi-platform integrated operational observatories;
	+ *Socio-economic and policy research (policies based on indicators):* not much data here but involvement of stakeholders is presented as a gap and need;
	+ *Training and technological transfer*: as a cross cutting theme this area should be an important part of the future Black Sea strategy; training opportunities for technical personnel is needed; national marine programmes may need to be tailored towards Black Sea blue economy;
	+ *Others*: need more coordination, Blue Economy centred national programmes.
* As regards the "regional and national boundary/framework conditions for the R&I" (Matrix B) it was observed that more information will be needed in order to draw conclusions. RU recalled the Baltic experience and their effort to map the different policy frameworks and funding sources (not only EU) for marine research. BSEC/ICBSS was invited to consider contributing to this exercise as it has a good overview of the organisations active in the Black Sea region, their profile and potential contribution in creating the enabling conditions to support the implementation of the SRIA. The Commission (MARE) to share the table of EU actions in the Black Sea. The group is invited to map and fill in the funding programmes supporting marine research and the above-mentioned R&I areas at national and regional level. Russia suggested considering the new Facility under BSEC as a potential source of funding regional projects on marine research.
* To complement the matrix, the Commission will seek information from the Copernicus programme and [Emodnet](http://www.emodnet.eu/).

**Vision paper for the Strategic Research and Innovation Agenda, next steps towards the EMD in Burgas**

* Dr Baris Salihoglu (Institute of Marine Sciences, METU, TR) took the initiative to present a rationale and outline of the SRIA based on the matrix. Discussion around the major challenges to be identified in such document took place. Some of the suggestions embracing the potential challenges included: *"ecosystem degradation due to anthropogenic impact, pollution, climate change and resource extraction", "underdeveloped predictive capability due to increasingly complex array of multi-stressors and their less-known interactions", "lack of integrated, multidisciplinary, blue-growth tailored knowledge", "lack of emergent blue sectors and research-public-private cooperation (i.e. clusters) inhibiting the growth of blue economy", but also "specificity of the Black Sea environment (water circulation and salinity with all related impacts on the ecosystems, anoxia processes, river-sea interactions), "almost destroyed in the past by human activities (from agriculture, industry, fisheries, alien species)", "needs to stand huge pressure from the coastal communities, including the river catchments", "needs to “restart the engines” for the knowledge based society around the entire Black Sea", "has critical potential in energy – not yet well known – and plans for the energy exploitation must be made without destroying the Black Sea ecosystems".*
* Drawing experience from other SRAs (Baltic, Atlantic and BLUEMED) was discussed. It was concluded to highlight the specificities of the Black Sea compared to other sea basins and put those in a positive/solution-oriented context. IFREMER highlighted that when it comes to transfer of experience from other sea basins, 3 important dimensions should be considered: i) operational transfer – rather easy to do as it is mainly about technology; ii) major challenges/practices – can be transferred with appropriate adaptation to the Black Sea context; iii) deep see anoxic level of the Black Sea – it is a unique specificity of this sea basins. Understanding the dynamic of the anoxic zones of the Black Sea – "extreme environment" – was highlighted as a major challenge by UA and supported by the group.
* IFREMER suggested keeping the challenges related to the economy and those related to ecosystem separated. "Economy and knowledge" components would be essential for the future SRIA. UA suggested inviting the Black Sea Commission to allow synergy and cross-fertilisation.
* GE proposed to keep the text of the SRIA and the vision paper simple and clear as possible to allow smooth and unambiguous translation in all Black Sea languages.
* EuroGOOS suggested adding a communication and awareness raising component too as a transversal feature of the SRIA.
* The Commission suggested continuing the debate at the next meeting when the matrix is expected to grow in content. It was clarified that before shaping the SRIA, a vision paper should outline the main results from the mapping exercise and call on the stakeholder community and political leaders to support the development of the SRIA. The latter is expected to be finalised for the 1Q 2019, under the RO Presidency of the Council of the EU.

**Next steps**

* The forum agreed to get additional input by the group on the matrix (Matrix A and B) by 26 January 2018. The input is to be sent to baris@ims.metu.edu.tr and Daniel-Constantin.STRUGARIU@ec.europa.eu. METU will collate the data and will get back to the contributors individually, supported by the Commission.
* The next meeting of the group will take place in March or early April. Following an invitation of BSEC, the meeting can take place in their premises in Istanbul, Turkey. The same conditions for travel and accommodations will be applicable.

**AOB**

* The summary of discussions and the supporting documents will be uploaded on the dedicated space for exchange of information related to the group on the [Maritime Forum](https://webgate.ec.europa.eu/maritimeforum/). All participants are encouraged to register to use it.

Enclosure: List of Participants

List of participants

***3rd meeting for developing a Blue Growth Initiative for Research and Innovation in the Black* Sea**

**11 December 2017**

**Meeting Room: 99, rue Joseph II, 00/59**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Nr.** | **Surname** | **First Name** | **Institution / Organization** | **Position** | **Coordinates** |  |
|  **PARTICIPANTS** |  |
| 1 | CADIOU | Jean-francois | IFREMER | European and International Affairs Dpt | jean.francois.cadiou@ifremer.fr |  |
| 2 | CASTRAVET | Tudor | Institute Of Ecology And Geography | Research Scientist | tcastravet@gmail.com |  |
| ~~3~~ | ~~CHANTZI~~ | ~~Georgia~~ | ~~ICBSS~~ | ~~Project Manager~~ | ~~gchantzi@icbss.org~~ |  |
| 4 | CHIOSA | Igor | Moldovan Office For Science And Technology | Representative | igorchiosa9@gmail.com |  |
| 5 | DANILOVA | Larisa | Scientific And Research Institute Of Maritime Spatial Planning Ermak NorthWest | Deputy Director | l.danilova@ermaknw.ru |  |
| 6 | DYKYI | Evgen | Ukrainian Scientific Center Of The Ecology Of The Sea (UkrSCES) | Deputy director for researche | evgen.dykyi@gmail.com |  |
| 7 | FRITZ | Jan-stefan | KDM German Marine Research Consortium | Head, Brussels Office | fritz@deutsche-meeresforschung.de |  |
| 8 | GVILAVA | Mamuka | BSC ICZM Advisory Group | ICZM National Focal Point for Georgia | mgvilava@iczm.ge |  |
| 9 | KALOGNOMOS | Stavros | CPMR | Policy Officer | stavros.kalognomos@crpm.org |  |
| 10 | KOMORIN | Viktor | UKRAINIAN SCIENTIFIC CENTRE OF ECOLOGY OF THE SEA | Director | vkomorin@gmail.com |  |
| 11 | KOVALEV | Sergey | Saint Petersburg State University Of Economics | Director of International Applied Projects and Programs Department | sergeykovalev@inbox.ru |  |
| 12 | LAPPO | Andrei | Institute Ermak North-West | General Director | a.lappo@mail.ru |  |
| 13 | MELIKIDZE | Valerian | Ivane Javakishvili Tbilisi State University | associate professor, vice dean | valerian.melikidze@tsu.ge |  |
| ~~14~~ | ~~MONCHEVA~~ | ~~Snejana~~ | ~~Institute Of Oceanology-BAS~~ | ~~Director~~ | ~~snejanam@abv.bg~~ |  |
| 15 | NOLAN | Glenn | EuroGOOS | Secretary General | glenn.nolan@eurogoos.eu |  |
| 16 | OZHAN | Erdal | Mediterranean Coastal Foundation | President | ozhan@medcoast.net |  |
| 17 | SAHIN | Ezgi | Institute Of Marine Sciences, METU | Specialist | ezgisahin@ims.metu.edu.tr |  |
| 18 | SALIHOGLU | Baris | Institute Of Marine Sciences, METU | Associate Prof. Dr. (Director) | baris@ims.metu.edu.tr |  |
| 19 | SAYIN UKE | Ayse | TUBITAK (The Scientific And Technological Research Council Of Turkey) | SCIENTIFIC PROGRAMMES EXPERT | ayse.sayin@tubitak.gov.tr |  |
| ~~20~~ | ~~SHIGANOVA~~ | ~~Tamara~~ | ~~Shirshov Institute Of Oceanology RAS~~ | ~~Leading scientist~~ | ~~shiganov@ocean.ru~~ |  |
| 21 | STANICA | Adrian | Romanian National Institute For Marine Geology And Geoecology - GeoEcoMar | Director General | astanica@geoecomar.ro |  |
| 22 | STOEVA | Rositsa | Black Sea Economic Cooperation Organization | Executive Manager | rstoeva@bsec-organization.org |  |
| 23 | TICA-DIACONU | Irina | Ministry Of Foreign Affairs Of Romania | Diplomatic Counsellor | irina.tica-diaconu@mae.ro |  |
| 24 | VAN DOREN | Pascale | KANTOR QWENTES | EVENT COORDINATOR | pvd@kantorqwentes.eu |  |
| 25 | YUCEL | Mustafa | Middle East Technical University, Institute Of Marine Sci. | Associate Professor, Vice Director | myucel@ims.metu.edu.tr |  |
|  **EU institutions**  |  |
| 1 | GRUBER | Sigi | European Commission (DG RTD) | Head of Unit | Sieglinde.GRUBER@ec.europa.eu |  |
| 2 | STOYANOV | Svetoslav | European Commission (DG MARE) | Policy Officer | Svetoslav.STOYANOV@ec.europa.eu  |  |
| 3 | STRUGARIU | Daniel | European Commission (DG RTD) | Policy Officer | daniel-constantin.strugariu@ec.europa.eu  |  |
| 4 | GENOVA | Petya | European Commission (DG MARE) | Policy Officer | Petya.GENOVA@ec.europa.eu |  |
| 5 | TASE | Diana | European External Action Service | Policy Officer | Diana.TASE@eeas.europa.eu |  |