

GEF MedProgramme

Coastal Management Plan for Boka Kotorska Bay

Third stakeholders meeting report

-PAP/RAC report-



Hotel Palmon Bay, Igalo, Herceg Novi, Montenegro

18 January 2023



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BACKGROUND

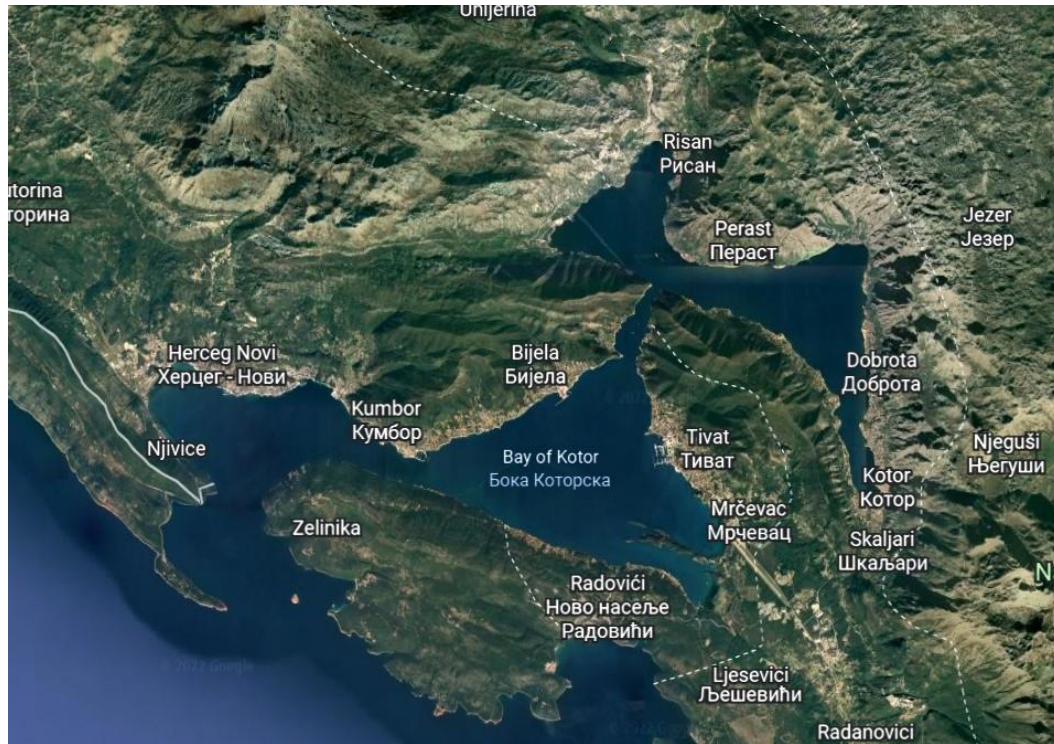
The Article 18 of the Barcelona Convention's Protocol on Integrated Coastal Zone Management (the ICZM Protocol) calls for the development of coastal plans¹ that “may be self-standing or integrated in other plans and programmes”, and “shall specify the orientations of the national strategy and implement it at an appropriate territorial level, determining, *inter alia* and where appropriate, the carrying capacities and conditions for the allocation and use of the respective marine and land parts of coastal zones.”

Montenegro ratified the ICZM Protocol in 2012, and later the coastal management plan was agreed to be developed for the Boka Kotorska Bay area under the Child Project 2.1 (CP 2.1)² of the GEF MedProgramme, coupled with mainstreaming climate change adaptation activities developed under the MedProgramme's SCCF project. To be more specific, the preparation of the Coastal Management Plan in Boka-Kotorska Bay is envisaged by the Component I of the MedProgramme CP 2.1 - Activity 1.3.5. Preparation of such local coastal management plan that mainstreams climate change adaptation is also identified as one of the priorities in Montenegro's National ICZM Strategy (developed in 2015 within the GEF MEDPartnership).

Boka Kotorska Bay was chosen as a priority area for Plan development during the stakeholder consultations in 2017 (in Rabat, Morocco) and subsequent national consultations held in February 2018. This area was selected due to its high vulnerability to flooding, very high population density, but also vulnerability to droughts, forest fires, storms and heavy rains.

¹ During the preparation of the ICZM Protocol, the terms “ICZM plans” and “coastal plans” were both used. In the context of this project document, these terms are used interchangeably and refer to the instrument defined by the ICZM Protocol as a coastal plan or programme

² Full name of the Child Project: Mediterranean Coastal Zones: Water Security, Climate Resilience and Habitat Protection



Boka Kotorska Bay (from maps.google.com)

MAIN AIMS OF THE COASTAL MANAGEMENT PLAN FOR BOKA KOTORSKA BAY

The major goal of the coastal management plan in Boka Kotorska Bay is two-fold: ensuring sustainable development, and building climate resilience in the target area, both in parallel with setting the ground for collaborative and multi-stakeholder planning. The preparation and implementation of such a plan should therefore combine the following:

- the establishment of policies for the sustainable development and climate resilience in the coastal zone;
- the establishment of a coastal management and governance system, with a special focus on impacts of climate change;
- assistance to the integration of sectoral plans into overall sustainable development policy for coastal area; and



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Ministry of Ecology,
Spatial Planning and Urbanism



- coordination of development initiatives at the national and municipal levels.

The benefits of having a Coastal Management Plan at the sub-national level are many. First of all, Coastal Management Plan, as a strategic policy document, is essential for the allocation of funds (whether EU, national or other) that are linked to coastal development and climate change adaptation. The Coastal management Plan also lays out policies for managing many aspects of the coastal zone, in particular for the land use planning. It provides the basis for protecting, restoring and preserving the coastal zones' important and diverse resources. At broader, regional level, Coastal management Plan serves to: (i) strengthen stakeholders' engagement and cooperation on climate change adaptation in the Mediterranean region; ii) identify and share best practices to enhance climate resilience in the coastal areas; iii) improve access to domestic and international finance for climate change adaptation; and iv) facilitate access to climate change adaptation knowledge in the region. This will ensure that local level interventions are sustainably expanded and replicated across the Mediterranean region. Moreover, stakeholders' engagement and cooperation on adaptation will be increased through regional meetings where relevant actors share their knowledge.

The preparation of the Coastal Management Plan of Boka Kotorska Bay follows the acclaimed ICZM Process³ and its five stages: *Establishment*; *Analysis and Futures*; *Setting the Vision*; *Designing the Future*; and *Realizing the Vision*. These five steps cannot be developed separately – they are interconnected and dependent on each other.

The five-stage process of Plan preparation is accompanied by *Climagine* workshops. *Climagine*⁴ is a participatory methodology co-created by Plan Bleu RAC (PB/RAC) to support the Integrated Coastal Zone Management process and climate action. *Climagine* informs the development of

³ http://www.coastalwiki.org/wiki/The_ICZM_Process_-_a_Roadmap_towards_Coastal_Sustainability_-_Introduction

⁴ <https://planbleu.org/en/projects/climagine/>



Montenegro
Ministry of Ecology,
Spatial Planning and Urbanism



local and national Coastal Management Plans in a bottom-up manner, while providing regional lessons for coastal management and coastal climate change adaptation in the Mediterranean.

THE THIRD STAKEHOLDER MEETING

Background of the meeting

During the first stakeholder meeting (i.e. **Scoping meeting**), held in Tivat in December 2021 in parallel with the first *Climagine* workshop, the priority challenges and issues to be addressed by the Coastal Management Plan were identified by the participants and grouped into priority themes (sustainability dimensions): (i) Coastal construction and infrastructure; (ii) Transportation; (iii) Water supply and wastewater; (iv) Tourism; (v) Waste management; (vi) Nature and environmental protection; and (vii) Governance and Knowledge-building. After the Scoping meeting, the national expert team was established to elaborate on the mentioned themes. Each theme was presented and discussed with stakeholders at the **Diagnostic meeting**, held in Kotor in July 2022, in terms of **state**/situation in Boka Kotorska Bay; **pressures** (anthropogenic and climatic) that lead to such state; **vision**, i.e. to what extent is it possible that the situation could worsen with regard to pressures, especially climatic ones.

The main aim of the third stakeholder meeting was to elaborate on proposed sustainability indicators (for each theme) and to open the initial discussion on the first version of set of measures provided by the expert team.

Meeting summary

The third stakeholder meeting for the preparation of the Coastal Management Plan in Boka Kotorska Bay engaged stakeholders from different fields and sectors, and from different administrative levels (local and national, NGOs) – see *Annex II*.

The workshop was opened by Ms Milica Rudić from the Division for Integrated Management of Marine and Terrestrial Ecosystems of the Ministry of Ecology, Spatial Planning and Urbanism of Montenegro. The welcoming words by Ms. Danijela Vlaović, from the Secretariat for the Protection of Natural and Cultural Heritage of Herceg Novi Municipality, followed. Ivan Sekovski, Programme officer, welcomed the meeting on behalf of PAP/RAC and Mr Michael Karner and Ms Srna Sudar welcomed the attendees on behalf of Plan Bleu/RAC.



Mr Ivan Sekovski introduced the importance of preparing the coastal management plans envisaged by the ICZM Protocol. He specifically focused on the benefits of having such a Plan, and highlighted the clear distinction between what the Coastal Management Plan is, and what it is not, stressing out the Coastal Management Plan as an integrative and strategic document complementary to other plans, that comprises a sustainability vision and climate change adaptation measures/actions. At the end of the presentation, he recapitulated on the summary of the main points from the previous – Diagnostic phase, to serve as an input for upcoming discussions on indicators and measures. These elements were grouped in terms of state, problems and key pressures on each “theme” in following manner:

SPATIAL DEVELOPMENT

- A relatively densely populated region with an economy based on tertiary activities;
- Linear urbanization along the coast endangering natural resources - pressure on the narrow coastal strip;
- Investment pressure is high - uncontrolled development and excessive informal construction and artificialization of the coast;
- Insufficient infrastructural equipment - traffic and technical infrastructure;
- Irrational consumption and inadequate use of agricultural land;
- Difficulties in preserving local/Mediterranean biodiversity;
- Threat/ risk of forest fires, floods and seismic risk.

TRANSPORTATION

- Lack of bypasses around cities/settlements on the coast;
- Insufficient network of local roads in and towards the hinterland;
- Poor quality and insufficiently maintained roads;
- Significant lack of coastal maritime traffic between the settlements of the Bay;
- Insufficiently developed public transport, insufficient bicycle and pedestrian paths.

INTEGRATED WATER RESOURCE MANAGEMENT

- Water supply problems (especially during the tourist season);
- Loss of water in the water supply network;
- Insufficient treatment of channelized wastewater and problems of water pollution;
- The problem of drainage of atmospheric water;
- Floods in torrential watercourses and ravines, and in the coastal zone - there will be a more pronounced problem with landslides and with coastal erosion;



Montenegro
Ministry of Ecology,
Spatial Planning and Urbanism



- Salt water intrusion into aquifers;
- Insufficient number of meteorological (precipitation) stations.

WASTE MANAGEMENT

- Excessive quantities of deposited waste - significant costs of its transportation and disposal;
- Primary waste selection is negligible;
- Illegal landfills;
- There are no established locations for the disposal of construction waste and bulky waste;
- Absence of an organized system for specific types of waste (eg used oil from restaurants, bars and other refreshment facilities, or used industrial oil from industrial plants and auto repair shops);
- Insufficient capacities of inspection services;
- Lack of a plan to implement educational campaigns and work with the public;

MARINE ENVIRONMENT

- Contamination (intake of nutrients and toxic substances through atmospheric and sewage discharges, heavy metals);
- Algal blooms and increase in eutrophication;
- Marine litter;
- Mechanical damage (construction of the coastline, docks, pontoons, anchoring...);
- Increased sedimentation and water turbidity;
- Climate pressures – new species and changes in the structure and number of populations.

SUSTAINABLE TOURISM

- Pressures related to (un)controlled and/or (un)planned construction, i.e. urbanization, which impairs the carrying capacity of the destination and the sustainable development of tourism;
- Pressures generated by insufficiently developed tourist infrastructure;
- Pressures related to highly pronounced seasonality of Montenegrin tourism and the phenomenon of "overtourism" in July and August and "ghost towns" in the winter months;
- Pressures related to the spatial concentration of the tourist offer in the narrow coastal zone and the insufficient (or ineffective) redistribution of visitors towards the interior, especially the rural area.
- Pressures related to the insufficiently efficient management of the destination and inexistence of integral tourist management of the Boka Bay.



GENERAL MANAGEMENT OBSTACLES (APPLICABLE TO ALL THEMES)

- Insufficient cooperation between municipalities;
- Need for stronger inspection supervision and criminal policy;
- Need to strengthen local capacities.
- The need for education.

Following Mr Sekovski's presentation, the *Climagine* workshop ensued, with primary focus on sustainable indicators. Plan Bleu/RAC's *Climagine 3* workshop was opened by Michael Karner, Project Officer at Plan Bleu/RAC, who provided a brief overview of the *Climagine* process and its state of advancement in Boka Kotorska. Plan Bleu's national consultant and *Climagine* facilitator, Dr. Srna Sudar, then went through the workshop's objective: to prioritise relevant and realistic Sustainability Indicators and minimum/maximum sustainability values to maintain these SIs in a "safe operating space" until 2030, while developing priority measures for the following CMP priority sectors, while taking the cross-cutting themes of Gender and Climate Change into account.

All outcomes and details on *Climagine* indicators can be found in Plan Bleu RAC's CLIMAGINE Workshop Brief available [here](#).

The afternoon part of the meeting was aimed for the discussion of the initial proposal of measures. It is very important to emphasize that this is an initial proposal of measures - these measures will be further discussed, even directly with stakeholders who were not able to participate in the meeting. The proposed measures were inspired by measures from some other strategic documents of local and national importance, such as the Spatial Plan of Special Purpose Areas for the Coastal Area until 2030, Local Environmental Action Plans for Kotor and Tivat municipalities, Montenegro's Third National Report on Climate Change (from 2021), Marine Spatial Plan for Montenegro, and others.

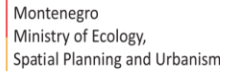
The first group of measures discussed was on the subject of **spatial development**. These measures are divided into measures for a narrow coastal zone (up to 100 m from the coastline),

measures for a wider coastal zone (from 100 m to 1 km from the coastline), measures for open rural areas, measures for protection against flash floods and coastal floods, measures for fire prevention and protection, and measures for the preservation of green areas and greening.



Measures for a narrow coastal strip (up to 100 m from the coastline)

- Application of the setback zone - free access to the coast and provision of public interest in the use of maritime domain;
- Avoid construction of individual buildings or multiple buildings except for buildings that are functionally connected to the sea or the seashore and objects of public interest (construction of objects of public purpose and arrangement of public areas), infrastructure objects and objects that require accommodation on the coast such as shipyards, ports , marinas, etc.;
- Ports of nautical tourism should be planned in settlements and separated construction areas outside the settlement.;
- Preserve natural beaches and coastal forests, and encourage the natural restoration of forests and indigenous vegetation;



- Define the criteria for setting up temporary objects, their dimensions, design and term of use;
- Develop guidelines for beach nourishment and technical maintenance of beaches, which will minimize negative impact on the environment

The first four above-mentioned measures were inspired by the measures from the existing strategic planning documents and there were no objections by stakeholders.

For measure of setting up temporary objects, their dimensions, design and term of use – stakeholders discussed that it would be important to limit the square footage of such buildings, but also to create visual guidelines, so that the appearance of such buildings would not disturb the harmony of the landscape. There is a possibility that there is a national ordinance for such facilities, at least in protected areas, but this needs to be checked.

It was also emphasized that guidelines should be established for nourishment of the beach, as a measure to restore the existing beaches, which are eroding due to sea waves. There is no nourishment that does not have an impact on the marine environment, but it is necessary to carry out extensive studies in order to reduce these impacts to the minimum possible extent - what type and size of material on which beach, what should be the slope of the beach and alike? Also, it is important not to alter the existing coastline in the sense that today's practice is to build a beach in front of every new building on the coastline.

Measures for the wider coastal zone (from 100m to 1km from the coastline)

- Avoid planning of new housing in the separate construction areas outside the settlement, as long as it is possible to build buildings for permanent residence within the construction areas of the settlement;
- Zones for temporary housing can be planned within settlements or in expansion zones of existing settlements (according to the rules for expanding the construction area of urban settlements);

- In the separate construction areas outside the settlement, apart from the facilities intended for tourism, it is possible to build facilities of public interest, to carry out research of mineral resources, limited and controlled exploitation concession areas, using the power of the wind and the energy of the sun, but with strict respect for the protection regime;
- Carry out the catalogizing and typology of the construction of the urban coastal zone.

There were no objections to the mentioned measures.

Measures for open rural spaces

- Activities of agricultural holdings and processing of agricultural products, and multifunctional rural development, where agricultural production is combined with tourist offer (agritourism) and various forms of outdoor recreation.
- Preservation of the existing and encouraging the development of agriculture: olive growing, cultivation of citrus fruits and coastal crops and other activities related to cultivating the land instead of intensive construction;

There were no objections to the mentioned measures.

Measures for protection against flash floods and coastal floods

- Carry out the preventive measures in order to prevent and eliminate the harmful effects of torrents and erosion, implement special preventive measures such as: canal and stream maintenance, bed cleaning, terracing, updating databases on active torrential channels etc.;
- Construction of protective structures: troughs, embankments, partitions, sills, piers, flood ramps, etc;
- Emphasis should be on natural regulation of torrential flows;
- Afforestation and greening of degraded areas and concrete surfaces in vicinity of water bodies;



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- Creation of five-year hydrotechnical plans/studies with analysis of the current situation and models for adapting existing systems to new climate conditions.

For these measures, some specific locations were mentioned where the measures should be applied, such as the old town of Kotor, Donja Lastva , Kalimen , Sutorina , Morinj and Solila (sea level rise), Mojdež and Savina (landslides).

Stakeholders noted that municipalities of Herceg Novi and Kotor have plans for flood protection.

Measures for fire prevention and protection

- Fire prevention measures: cleaning of destroyed trees, dry vegetation and waste from the forest, planting protective vegetation - olive groves, vineyards, orchards;
- Measures to rehabilitate burnt areas by forming new forest or agricultural areas. Prohibition of construction on burnt areas;
- Strengthening the capacity of firefighters: fire engines, fire lanes, cameras and early warning systems.

The possibility of strengthening animal husbandry (small livestock) was also mentioned, which would naturally maintain areas vulnerable to the spread of fire.

There were some previous initiatives to install cameras (Luštica , Vrmac) to cover the area with cameras, but none received permission from the Ministry of Defense.

All three municipalities have fire protection plans.

Measures for the preservation of green surfaces and greening

- Preservation and improvement of valuable natural landscapes;
- Greening of parcels by planting coastal autochthonous vegetation, such as olives, citrus and Mediterranean fruits, cypress trees, palms, oleander, laurel
- Define greening guidelines;



Montenegro
Ministry of Ecology,
Spatial Planning and Urbanism



- Planting types of greenery that are more resistant to extreme weather conditions (intensify the planting of autochthonous species - which tolerate high summer temperatures, a high degree of drought, gusts of strong winds...)
- Greening of city squares;
- Green roofs;
- Creating a cadastre of green areas and establish a sustainable GIS system for managing public greenery.

It was mentioned among the stakeholders that afforestation of the hinterland in degraded areas is extremely difficult because it is difficult to break through maquis, there are no roads, and the terrain is impassable. Fire lanes should be created, which would then facilitate access for fire engines (measures against fire).

Also, as regards afforestation, a forestry strategy is being developed at the national level.

It should be checked what is planned for greening through national and local spatial plans. As a rule, 30% of each parcel should be green. This applies to both public and private areas.

As for planting greenery that is resistant to droughts, we should imitate nature, that is, plant what is already thriving in the area despite the drought (example: *Platanus* trees).

There should not be more than 25% greenery in the squares, because they are not parks, but it is certainly good that they lean on parks.

Green roofs are good also for fighting floods, they can be installed on flat roofs as well as on sloping roofs with a small slope. It was mentioned that green roofs can extend the life of waterproofing by up to 20%.

A new indicator was also proposed - **the share of green areas in the planned city area.**

There is a cadastre of green areas for Kotor and Tivat (incomplete), but only for public areas.

Of all the measures for **spatial development**, the following are highlighted as priorities: stop improper nourishment and embankment on the coast and improve natural landscapes.

Regarding **transportation**, the following measures were proposed:

- Construction of bypasses: Kotor, Herceg Novi and Tivat (section of the route of the

Adriatic highway for high-speed motor traffic);

- Improvement of the existing system of public passenger transport, as well as renewal of the bus fleet and replacement with more energy efficient vehicles;
- Establishing a system of public transport of passengers in maritime traffic that will serve and connect the municipalities of Herceg Novi, Kotor and Tivat;
- Establishment of a unique, integrated system of public transport of passengers in road and maritime traffic for the area of Boka Kotor;
- Cable cars, tourist-traffic and " park&ride " points;
- Panoramic and excursion, i.e. recreational, cycling, walking, hiking and seaside paths (" lungo mare") for the movement of pedestrians and cyclists;
- Installation of public chargers for electric and hybrid vehicles.

In the discussion, it was emphasized that the improvement of the traffic network to and from rural areas is a priority. It was also mentioned that UNESCO asked for a joint traffic study for all three municipalities (Decision 28/32 of the World Heritage Committee).

Measures related to the theme of **Integrated Water Resource Management** were divided into: measures for water supply, measures for wastewater, measures related to water from the hinterland, and measures related to public areas (irrigation and water availability).

Measures for water supply

- Apply priority measures to reduce water losses;
- Establishment of a water supply system in areas where there is none (project documentation) and renovation/replacement of the water supply network (where necessary);
- Determination of sanitary protection zones of local springs;
- Analysis of the potential of existing local springs.

Measures for waste water

- Construction of the missing sewage system in the Boka area and the establishment of

methods/models for collecting information from the field and monitoring the increase in the coverage of municipal wastewater collection and treatment services in the area of Boka Kotorska;

- Analysis of areas where the construction of the sewage system is not planned - areas with septic tanks;
- Creation of conceptual solutions for stormwater drainage systems for all three municipalities;
- Analysis of the possibility of reusing (purified) wastewater (for watering public areas and the like);
- Disposal of sewage sludge.

During the discussion, it was said that there was an idea of using purified waste water to water the golf course at Luštica Bay.

Measures related to inland waters

- Hydrological - hydromorphological analyses of torrential watercourses of Boka Kotorska with additional expansion of the network of hydro-meteorological stations;
- Increase water retention and storage capacities for other purposes (agriculture, irrigation of public areas, fire suppression);
- Establish a cadastre of surface and underground water pollutants in the Boka Kotorska area.

As for water storage, there are "bistirne" that the local population uses to retain rainwater. They have been used since the Austro-Hungarian era.

Measures related to public surfaces (irrigation and availability of water)

- Hydrant network in parks and assessment of the possibility of developing and applying drip irrigation in public parks;
- Maintenance of city fountains and public fountains.
-

Stakeholders emphasized that the hydrant network is not as important for parks as it is for locations vulnerable to fires such as Luštica Bay and Grbalj . As for the fountains, they are being renovated in Kotor, while Tivat has two public fountains.

As priority measures, the participants emphasized the establishment of a water supply system where there is none and the construction of the missing sewage system.

Solid Waste management measures were divided into:

- Measures related to the reduction of waste disposed at landfills;
- Measures related to the management of special types of waste;
- Measures related to packaging waste management;
- Measures related to the management of biodegradable waste;
- Measures related to rehabilitation of unorganized landfills;
- Measures related to the implementation of an informative and educational campaigns.

The participants commented that the priorities among these measures are the disposal of packaging waste (single-use plastic) and the establishment of locations for disposing construction waste.

Regarding the **marine environment** , the following measures were discussed:

- Preservation of the marine environment in the Boka Bay (e.g. installation of floating buoys as protection of seagrasses and other benthic habitats against anchoring etc.);
- Remediation of areas burdened with polluting substances;
- Construction of a comprehensive infrastructure for the collection and treatment of municipal wastewater (reducing the inflow of wastewater will help the recovery of the ecosystem and regular cleaning of storm drains);
- Protection of areas that are particularly sensitive to receiving pollution (peloids, shellfish farms and beaches);
- Prevention of the discharge of waste water from ships and yachts (prohibition of entering to ships without holding tanks, as well as the construction of devices for the reception and treatment of waste water from ships and yachts in all ports in Boka Kotorska)
- Measures in the fisheries sector - controlled catch of certain non-indigenous species that are either invasive or have potential to become invasive.

The participants emphasized that floating buoys, as an alternative to anchors are currently not recognized in the legislation, so there is a possibility of certain legislative obstacles. Stakeholder indicated that what is in the existing *feasibility* anchorage studies definitively needs to be inspected. For measures such as floating buoys and holding tanks, the Maritime Safety Authority should be consulted.

Some locations still need to be cleaned from pollution (eg the former Arsenal and Bijela).

It should also be seen how ballast water and fouling are regulated, so that foreign species are not

introduced. In the case of controlled fishing, it is necessary to specify which species are invasive. In order to catch some introduced species (e.g. blue crab), it is necessary to adapt the fishing tools, because they can destroy existing ones with pincers.

Prevention of devastation and revitalization of the coastal area are emphasized as absolute priorities.

On the topic of **sustainable tourism**, the following measures were proposed:

- Improve the structure, i.e. the share of the number of beds in collective accommodation, especially hotels;
- Redistribute tourist traffic inland;
- Develop a year-round offer and year-round tourism - suppress the so-called overtourism during the summer months;
- Concretize guidelines, i.e. sustainable tourism development actions through clearly and precisely defined and operational tourist products and experiences;
- Improve the infrastructure for marine tourism;
- Improve health, i.e. medical and wellness tourism;
- Improve awareness and understanding of the dangers of (un)sustainable tourism and climate change among visitors, local residents, businesses, civil society and the public sector.

The need to improve awareness and understanding of the dangers of (un)sustainable tourism and climate change was listed as a priority, especially of decision makers. In tourism, Boka is recognized as a whole, which offers the possibility of better connections between municipalities.

Finally, the **measures that are important for all sectors** are listed:

- Stronger cooperation between the three municipalities;
- Stronger collaboration between municipalities and national bodies;
- Strengthening of inspection supervision;
- Strengthening of criminal policy;
- Education (employees of public institutions, private sector and all other citizens)
- Strengthening capacities (financial as well as scientific/working)
- Early warning systems, handling spatial data (GIS databases).



Meeting outcomes and next steps

At the end of the meeting it was agreed that the proposed indicators and their values (Band of Equilibrium) will be forwarded to the expert team for further elaboration.

Furthermore, the initial proposal of measures will be amended according to the comments by stakeholders, further elaborated by the expert team and also further elaborated with the local and national experts and stakeholders that were not present in stakeholders' meeting and Climagine workshops.

The meeting was closed by Ms Milica Rudić from the Ministry of Ecology, Spatial Planning and Urbanism of Montenegro.



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