

CLIMAGINE 3 - Workshop Brief
Boka Kotorska Coastal Management Plan
GEF MedProgramme, Child Project 2.1.
Palmon Bay Hotel - Herceg Novi, Montenegro
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I. INTRODUCTION

Coastal planning in Boka Kotorska (Kotor Bay), Montenegro is currently being reinforced through Child Project 2.1 of the Global Environmental Facility's (GEF) [MedProgramme](#): Enhancing Environmental Security (2020-2024), implemented by the UNEP Mediterranean Action Plan (UNEP/MAP). One of the main goals of this project is to sustain the implementation of the Barcelona Convention's Protocol on Integrated Coastal Zone Management (ICZM Protocol) in the Mediterranean, notably to address the impacts of climate change and economic activities on coastal hotspots, while seeking to enhance sustainable living conditions for the coastal populations concerned.

The Boka Kotorska Coastal Management Plan's (CMP) development is led by PAP/RAC, in parallel with a similar effort: the *Schéma régional du littoral* of the Tangier-Tetouan-Al Hoceima Region of Morocco. In both cases, the elaboration of these strategic ICZM documents is supported by Plan Bleu/RAC's [Climagine](#) methodology. This participatory foresight methodology approach applies the bottom-up principle of stakeholder involvement to support the Coastal Plan elaboration processes, coupled with local and national data gathering as well as regional knowledge on ICZM and coastal adaptation. Indeed, the MedProgramme's SCCF Project also informs both processes in Montenegro and Morocco with work on climate risks, climate and gender, and coastal ecosystem-based adaptation solutions.

The third CMP/Climagine workshop was held on January 18th, 2023 in Herceg Novi, Montenegro. It welcomed 24 participants, and was organised by PAP/RAC and Plan Bleu/RAC and co-hosted by the Ministry of Ecology, Spatial Planning and Urbanism of Montenegro. Held in Montenegrin, it further built on the outcomes of the first [CMP Scoping/Climagine 1](#) (3 December 2022, Tivat) and [CMP Diagnostic/Climagine 2](#) (4-5 July 2022, Kotor) workshops.

The workshop engaged national and local stakeholders involved in defining "Sustainability Indicators" (SIs) for each CMP priority sector in Boka Kotorska. Identified during the second workshop, these sectoral indicators will inform the CMP from a strategic foresight point of view. Participants collectively analysed and prioritised the SIs to estimate their capacity to adequately represent progress towards sustainability within these priority sectors, and thus throughout Boka Kotorska as a whole. In addition, participants evaluated the priority measures proposed by the project experts for the CMP, aiming to contribute to greater environmental and biodiversity protection, more sustainable economic activities and a better and more resilient quality of life for local inhabitants. It is important to highlight this ongoing exchange between the Montenegrin stakeholders represented at the workshop and the PAP/RAC and Plan Bleu experts. In some cases, differences in views exist and can also be addressed using a participatory approach.

II. CLIMAGINE 3 - WORKSHOP SUMMARY

The workshop was opened Ms. Milica Rudić, (Head of the Department for Marine and Coastal Ecosystems, Ministry of Ecology, Spatial Planning and Urbanism) and by Ms. Danijela Vlaović (Head of Division for Ecology, Sector for Ecology and Energy Efficiency, Herceg Novi Municipality).

Both representatives welcomed the participants and emphasised the importance of the CMP for the future sustainable development of Boka Kotorska and its role as an effective tool for the implementation of Montenegro's National Spatial Plan, which is currently under development. The importance of relevant, yet realistic CMP Sustainability Indicators for was highlighted by both hosts, in order to effectively monitor the progress of its implementation towards its set goals and objectives.



Part 1: Coastal Management Plan – Progress on the CMP, priority sectors and indicators

Ivan Sekovski, Programme Manager at PAP/RAC, then welcomed participants on behalf of the GEF MedProgramme and PAP/RAC, and provided a brief overview of the CMP's progress and expert-proposed indicators and measures. The morning sessions of the workshop provided the participants with an overview of the main expert findings concerning progress towards the CMP's development, as well as proposed priority sector indicators derived from sectoral analyses. The outcomes of this session can be found [here](#).

Part 2: Climagine 3 Workshop - indicator prioritisation and priority measures

Plan Bleu/RAC's Climagine 3 workshop was opened by Michael Karner, Project Officer at Plan Bleu/RAC, who provided participants with an overview of the next steps of the participatory Climagine process 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 (SIs) including minimum/maximum sustainability thresholds, defined by the Band of Equilibrium tool. Based on



the latter, it is possible to represent the past and present states of the priority sectors described by the SIs, and to identify the threshold values to maintain these SIs in a “safe operating space” until 2030 and 2050. In turn, this allows for the elaboration of future scenarios to better understand the evolution of Boka Kotorska based on these trends, including a business as usual/unsustainable scenario, and an alternative, sustainable one. This work will form the basis of the fourth Climagine 4 workshop, foreseen in June 2023. Participants were then divided into 5 groups, and subsequently discussed priority measures for the CMP priority sectors listed below, taking the cross-cutting themes of Gender and Climate Change into account:

- ❑ Environment and the Marine Environment
- ❑ Integrated Water Resources Management and Wastewater Management
- ❑ Spatial Planning and Transportation
- ❑ Sustainable Tourism
- ❑ Waste Management

The outcomes of the workshop's discussions are listed below. When SI values are not indicated, this means that additional expert work is needed to determine these numbers.

| GROUP 1 Priority Sector: SUSTAINABLE TOURISM | Current value | 2030 value |
|---|--|---------------------|
| Challenges/Indicators | | |
| ✓ The relationship between the number of inhabitants and the number of tourists by municipality/ <i>Odnos broja stanovnika i broja turista</i> | 1:10.45 | Min: 1:5-Max 1: 15 |
| ✓ The relationship between the number of residents and the number of beds in collective accommodation/ <i>Odnos broja ležajeva u kolektivnom smještaju i broja stanovnika</i> | 0.16 (Herceg Novi: 0.23; Kotor: 0.08; Tivat: 0.11) | Min: 0.10-Max: 0.30 |
| ✓ Share of overnight stays in the region in the total number of stays/ <i>Udio noćenja regije u ukupnom broju noćenja</i> | 34.27% | Min: 25% - Max: 40% |
| ✓ Number of beds in collective accommodation per km of coast/ <i>Broj ležajeva u kolektivnom smještaju po km obale</i> | 51.98 (Herceg Novi: 105; Kotor: 23 and Tivat: 30) | Min: 50, Max: 120 |

| GROUP 2 | Current value | 2030 values tbd |
|---|---|--|
| Priority Sector: SPATIAL PLANNING and TRANSPORTATION ¹ | | |
| <ul style="list-style-type: none"> Demography <ul style="list-style-type: none"> ✓ Population in 1000 m of coastal area/<i>Populacija obalnog pojasa od 1000 m (%)</i> ✓ Share of apartments for permanent residence/<i>Udio stanova za stalno nastanjenje (%)</i> | 87% | 70- 80% |
| | 48% | 55-65% |
| <ul style="list-style-type: none"> Space <ul style="list-style-type: none"> ✓ Share of the built/planned construction area in the 1000m zone/<i>Udio izgrađenog/planiranog građevinskog područja u 1000m pojasu</i> (NB: this indicator's 2030 values have been split in two, since different sources of satellite data indicate different percentages) | 19%/46% | 19 - 20% |
| | | 33 – 35% |
| <ul style="list-style-type: none"> Road transport <ul style="list-style-type: none"> ✓ The length of the local road network in relation to the area of the municipality/<i>Dužina putne mreže u odnosu na površinu opštine</i> | Herceg Novi: 67,23km/100km ² Kotor: 54,77 km/100km ² Tivat: 10,98 km/100 km ² | increased by 10-15% per year compared to 2021 |
| <ul style="list-style-type: none"> Maritime transport <ul style="list-style-type: none"> ✓ The number of local maritime traffic piers in relation to the number of inhabitants/<i>Broj pristaništa lokalnog pomorskog saobraćaja u odnosu na broj stanovnika</i> | 9 | 25-30 |

| GROUP 3: Priority Sector: WATER SUPPLY and WASTE WATER | Current value | 2030 value |
|---|---------------|------------|
| ✓ Rate of connection to sewage systems (average for all three municipalities)/ <i>Stopa priključenja na kanalizacione sisteme (prosjeak za sve tri opštine)</i> | 49.7% | 80-95% |
| ✓ The number of sanitary protection zones established at freshwater springs/ <i>Broj uspostavljenih zona sanitarne zaštite sa izvorišta</i> | 6/11 | 8/11 |
| ✓ Non-revenue water or Total losses (leakage, burst pipes and poor water management, as well as illegal connections and unauthorised consumption)/ <i>Neprihodovana voda ili Ukupni gubici: (curenje, pucanje cijevi i laže upravljanje vodom, te nelegalni priključci i neovlašćena potrošnja)</i> | 76% | 45-50% |
| ✓ The number of modernised precipitation stations in the Boka Kotorska basin/ <i>Broj osavremenjenih padavinskih stanica u slivu Boke Kotorske</i> | 3 | 6-8 |

¹ Additional transportation indicators can be found in Annex 3.

| GROUP 4 Priority Sector: WASTE MANAGEMENT | Current value | 2030 value |
|--|---------------|---|
| ✓ Reduced amount of deposited waste/ <i>Smanjena količina deponovanog otpada</i> | 95% | Decrease of 55-65% from current quantities of per capita waste generation |
| ✓ Establishing the necessary infrastructure for processing bulky and construction waste/ <i>Upostavljanje potrebne infrastructure za obradu kabastog i građevinskog otpada</i> | - | Increase in capacity of waste transfer stations by 20-30% |
| ✓ Increase in the control policy - operational inspection services/ <i>Povećanje kontrolne politike – djelovnje inspekcijske službe</i> | - | - |
| ✓ Intensive informative and educational campaigns in the field of sustainable waste management/ <i>Intezivne informativne-educativne kampanje u oblasti održivog upravljanje otpadom</i> | - | - |
| ✓ Produced waste per inhabitants/ <i>Proizvedenog otpada po stanovniku</i> | 489 kg | 290-340 kg |
| ✓ Number of illegal landfills/ <i>Broj ilegalnih deponija</i> | 69 | 10 - 20 |

| GROUP 5 Priority Sector: ENVIRONMENT AND THE MARINE ENVIRONMENT | Current value | 2030 value |
|---|---|--------------------------------------|
| ✓ Habitat distributions of <i>Posidonia Oceanis</i> / <i>Distribucije staništa-posidonija</i> | <i>There is no data considering the entire Bay. It is being mapped and should be finished by the end of 2023.</i> | |
| ✓ Population size of phytoplankton species that determine habitat and community species composition/ <i>Veličina populacije fitoplanktona koje određuju stanište i sastav vrsta zajednice</i> | 10 ⁵ | 6x10 ³ -9x10 ⁵ |
| ✓ Assessment of the natural coastline/ <i>Procjena prirodne obale</i> | 52% | 50-55% |
| ✓ Beach litter/ <i>Čvrsti otpad na plažama</i> | 671 pieces/100m | |

| | | |
|--|--|--|
| | | 50-70 (this value is based on the Mediterranean threshold of 59 /100m) |
|--|--|--|

The values proposed by stakeholders will be forwarded to experts for further evaluation, especially in terms of the values that are missing, newly added indicators and suggested sustainability values. After receiving inputs from the experts, Plan Bleu/RAC and PAP/RAC will send the proposed indicators and the sustainability levels to the attendees for their feedback.

This will initiate the next step in terms of the Climagine method. Based on the selected indicators per priority sector, a “Band of Equilibrium” (BoE) will be established for each SI. This “safe operating space” is composed of minimum and maximum threshold values for each indicator. This “BoE” will allow stakeholders to identify the current and future state of a given CMP priority sector, by zooming in on the sector’s set of indicators. In this way, progress towards sustainability can be monitored through the BoE in Boka Kotorska, while the main measures to maintain a sustainable course of action and enhance the area’s overall sustainability and resilience will be connected to the SIs. The measures can be found [here](#).



The workshop was concluded by Michael Karner (Plan Bleu), Ivan Sekovski, (PAP/RAC) and Milica Rudić of the Ministry of Ecology, Spatial Planning and Urbanism of Montenegro.

ANNEXES

1. Event agenda

| Time (CET) | Session |
|--|---|
| 10:00-10:15 | Welcome and Registration <i>Upon registering, please choose which CMP Priority Sector you would like to join (see the list of sectors below). Thank you!</i> |
| 10:15-10:30 | Opening Remarks <ul style="list-style-type: none"> Milica Rudic, Head of the Department for marine and coastal ecosystems, MESPU Herceg Novi Municipality representative (tbc) |
| 10:15-11:15 | The Boka Kotorska Coastal Management Plan - Step 3 Ivan Sekovski, Programme Officer, PAP/RAC <ul style="list-style-type: none"> Overview of progress on the CMP |
| 11:15-13:00 <i>Ongoing coffee break from 11:15-11:45</i> | Climagine 3 Workshop Part 1: Sustainability Indicators for the CMP Srna Sudar, Head of Project Office at Univerzitet Crne Gore, Montenegro and Michael Karner, Project Officer, Plan Bleu/RAC Sectoral Diagnostics - Indicators PAP/RAC experts Brief presentations on the proposed Sustainability Indicators for the CMP by priority sector: Spatial development and transportation; Integrated water resource management; Solid waste management; Marine environment; Sustainable tourism) Group Discussions on Sustainability Indicators |
| 13:00-14:00 | <i>Lunch</i> |
| 14:00-14:45 | Plenary Presentations and Discussion of the Group Activity Outcomes |
| 14:45-15:30 | Boka Kotorska CMP: Priority Measures to ensure CMP Implementation Ivan Sekovski, PAP/RAC |
| 15:30-17:00 <i>Ongoing coffee break from 15:30-16:00</i> | Climagine 3 Workshop Part 2: Priority Sectoral Measures Group Activities and Plenary Discussions |

| | |
|--------------------|---|
| 7:00-17:15 | Concluding Remarks and Next Steps <ul style="list-style-type: none"> • Michael Karner, Plan Bleu/RAC • Ivan Sekovski, PAP/RAC • Milica Rudic, Head of the Department for marine and coastal ecosystems, MESPU |
| 18:00-20:00 | <p><i>Dinner</i></p> <p>Plan Bleu/RAC and PAP/RAC warmly invite you to join us for a cocktail and dinner at the Palmon Bay Hotel (covered by the project partners).</p> |

2. List of Participants

The workshop welcomed 17 female and 6 male participants.

| Name | First Name | Institution |
|---------------|------------|---|
| Božović | Maja | Ministarstvo poljoprivrede, šumarstva i vodoprivrede |
| Čurović | Željka | Ministarstvo ekologije, prostornog planiranja i urbanizma |
| Divanović | Milica | Ministarstvo poljoprivrede, šumarstva i vodoprivrede |
| Ivanović | Alexandra | Nacionalna turistička organizacija Crne Gore |
| Đukić | Vuk | Nacionalna turistička organizacija Crne Gore |
| Hajrizaj | Sofija | UJKD PJ Kotor |
| Kalezić | Đorđije | MonteCEP |
| Karajović | Saša | MonteCEP |
| Karner | Michael | Plan Bleu |
| Kolorogić | Dragana | Ministarstvo poljoprivrede, šumarstva i vodoprivrede |
| Kovačević | Sandra | Ministarstvo ekologije, prostornog planiranja i urbanizma |
| Krivokapić | Marina | Opština Kotor - Sekretarijat za zaštitu prirodne i kulturne baštine |
| Markovic | Sanja | Privredna komora Crne Gore |
| Petovic | Slavica | Institut za biologiju mora |
| Petrone Kolar | Lidija | Ministarstvo unutrašnjih poslova - Direktorat za zaštitu i spašavanje |
| Radunović | Jelena | DOO Komunalno Kotor |
| Raicevic | Petar | Plan M |
| Rudic | Milica | Ministarstvo ekologije, prostornog planiranja i urbanizma |
| Sabanovic | Dina | NGO Green Home |
| Sekovski | Ivan | PAP/RAC |
| Stojanovic | Ivana | Ministarstvo ekologije, prostornog planiranja i urbanizma |
| Sudar | Srna | Plan Bleu Consultant |
| Vusurovic | Nadja | Ministarstvo poljoprivrede, šumarstva i vodoprivrede |

Annex 3: Additional sectoral Sustainability Indicators on Transportation

| Indicator | Current value | The real value of sustainability | Range proposal |
|--|---|--|----------------|
| Number of lines and transport work in public road and maritime passenger transport systems (train*km, train*h) | HN: 7 bus lines JTP KO: 4 JTP bus lines TV: 4 JTP bus lines Transport work: no data | HN: 10 bus lines JTP KO: 6 JTP bus lines TV: 6 JTP bus lines JTP shipping lines: 6 Transport work: increased by 10% per year compared to 2021 | |
| Mobility coefficient - by municipality or for Boka Kotor (movements/inhabitant/day) | Tivat in 2008: 3,065 movements/person/day | 2.9 movements/st./day | 2.7 – 2.9 |
| Psychic distribution of movement - by municipalities or for Boka Kotorska (%) | Tivat in 2008: 46.62% on foot 5.31% bicycle/motorcycle 44.99% passenger car 2.24% public transport 0.71% other | Target visual distribution until 2030: 35% by foot 30% by public transport 25% to passenger cars 10% to other, sustainable, forms of movement (bicycle, micro-mobility, etc.). | |