Terms of Reference:

Development of an Erosion and Sediment Assessment and Feasibility Study for Ecosystem-Based Erosion Control Measures in the Bojana/Buna Delta

In the framework of:

Memorandum of Understanding for the Management of the Extended Transboundary Drin Basin

GEF Project "Implementing the Strategic Action Programme of the Drin Basin to strengthen transboundary cooperation and enable integrated natural resources management"

Pilot project: **B**ojana/Buna river **N**ature's **E**dge **S**trengthening and **T**ransformation - **B-NEST**

June 2026

The Coordinated Action for the implementation of the Memorandum of Understanding for the management of the Drin basin (Drin CORDA) is supported by the GEF Drin Project. The latter is implemented by the United Nations Development Programme (UNDP) and executed by the Global Water Partnership (GWP) through GWP-Mediterranean (GWP-Med), in cooperation with the United Nations Economic Commission for Europe (UNECE). GWP-Med serves as the Secretariat of the Drin Core Group, the multilateral body responsible for the implementation of the Memorandum of Understanding.

Disclaimer: The document adheres to the UN rules and policies regarding the names and international status of Riparian's and/or other geographical areas etc. The use of characterizations, names, maps or other geographical statements in this document in no way implies any political view or positions of the Parties which are executing and implementing the Project.

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1. Introduction – Background

The Drin Basin sits in the southwestern part of the Balkan Peninsula. It comprises the transboundary sub–basins of the Drin and Bojana/Buna Rivers and of the Prespa, Ohrid and Skadar/Shkoder Lakes. The Drin River is the "connecting body" of the "extended" Drin Basin, linking the lakes, wetlands, rivers and aquatic habitats in the coastal area as well as the marine habitats in the Adriatic Sea into a single, yet complex, ecosystem of major importance. The water bodies and their watersheds are spread in a geographical area that includes Albania, Greece, North Macedonia, Montenegro and Kosovo. With its important water resources this complex system provides a wealth of services to the Drin Riparians that share the basin: energy supply, recreation and tourism, fisheries, water supply for irrigation and domestic uses, sustenance of unique endemic biodiversity, and livelihoods. The basin is home to over 1.61 million people, living in over 1,450 settlements.

The Coordinated Action for the implementation of the Drin Memorandum of Understanding

The Drin Coordinated Action (Drin CORDA) was established in 2011 and was the result of a Drin basin level multi-stakeholder policy dialogue initiated in 2009, and preparatory technical and political engagement work initiated already in 2006. The Drin CORDA is the framework set by the Drin Riparians for the implementation of the Memorandum of Understanding for the Management of the Extended Transboundary Drin Basin (Drin MoU). The Drin MoU was signed by the Ministers responsible for the management of water resources and/or environment, and high-level representatives of the Riparians in Tirana, on 25 November 2011.

The objective of the MoU is to deliver the agreed shared vision, to "*promote joint action for the coordinated integrated management of the shared water resources in the Drin Basin, as a means to safeguard and restore to the extent possible the ecosystems and the services they provide, and to promote sustainable development across the Drin Basin*".

The Drin MoU provides the political framework for cooperation in the Drin Basin. Following the provisions of the Drin MoU an institutional structure was established. It includes:

- The Meeting of the Parties.
- The Drin Core Group (DCG). This body is given the mandate to coordinate actions for the implementation of the MoU.
- Four Expert Working Groups (EWG) to assist the DCG in its work.

The GEF Drin Project

The implementation of the Drin MoU has been supported - in addition to other transboundary and national level actions - by GEF financed projects the first of which ended in 2021. The GEF Drin I Project enabled the development and the endorsement - at Ministerial level - of a Drin Strategic Action Programme (Drin SAP; 24 April 2020) that reflects Riparian's ownership, leadership and alignment with their mid or long-term national and transboundary strategies.

A new GEF project entitled "Implementing the Strategic Action Programme of the Drin Basin to Strengthen Transboundary Cooperation and Enable Integrated Natural Resources Management" (GEF Drin II Project) will provide support until 2029 for the implementation of priority actions under the Drin SAP.

The GEF Drin II Project is structured around four components each one including outputs and activities designed to achieve an equivalent number of outcomes:

Outcome 1: *Sustainable and climate-resilient management of the Basin's resources enabled through development of technical and policy tools, and filling gaps in the understanding of the Drin Basin ecosystems functioning.*

Outcome 2: *Effective cooperation among Drin Riparians and socio-economic sectors succeeded through the establishment of a transboundary institutional arrangement and the development of critical transboundary policy instruments.*

Outcome 3: *SAP implementation is accelerated through regional, riparian and local solutions to address main causes of transboundary concern, promote sustainable water use and ensure ecosystem functioning and resilience.*

Outcome 4: *Long-term sustainability of achievements is enhanced through implementation of project mechanisms for stakeholder's participation, gender mainstreaming, dissemination, coordination and monitoring progress.*

The assignment within this ToR is implemented under Outcome 3 of the GEF Drin II Project. More specifically, the assignment contributes to Output 3.4, focused on the implementation of a pilot project in the Bojana/Buna Delta aimed at reducing erosion, improving understanding of sediment dynamics, and identifying ecosystem-based erosion control measures to enhance climate resilience in the riverine and coastal zone.

A. Background

As a result of specific relief and climatic conditions in the Drin Basin, soils are very prone to erosion (soils of the lake terraces and hilly relief forms represent 2/3 of the total, while the rest are mainly soils of the mountainous regions). This, coupled with socio-economic conditions (i.e. lack of appropriate mitigation measures or even exacerbation of the erosion process through extensive gravel extraction and inappropriate land use and farming practices) result in intensified soil degradation processes and complex sedimentation patterns. In all Drin Riparians soil degradation is accelerating and is estimated that currently near half of the basin territory experiences medium to severe erosion.

This has an impact on the economies of the Drin Riparians in the sectors of electricity production (dam siltation), agriculture (fertility and soil loss), tourism (coastal changes) as well as in the reliability of the drinking water supply sources (in terms of quality and quantity) and further result in degradation of ecosystems (impacting riparian ecosystems with extensive gravel extraction). Bojana/Buna river within the Drin Basin is the characteristic case.

The Delta of Bojana River and "Big beach" in Montenegro along with the Buna River Velipojë Protected Landscape in Albania, created by extensive sediment transport (from the Drin River system), are marine resorts and significant touristic spots. The Bojana/Buna Delta was growing in area before the dams' construction on the Drin River upstream in Albania, with the most intense deposition occurring in the 1940s, with an average rate of about 45 m/yr. Human interventions in the basin (hydropower infrastructure) leading to the decrease of sediment reaching the coast, in synergy with other factors (coastal dynamics and climate change) caused a reversal of this trend and erosion phenomena.

While long term effects -including climate change impacts, dams operation, excessive/illegal quarrying in many of the rivers in the Drin Basin- are still being studied, it is evident that erosion mitigation measures should be implemented in the short term.

The pilot project is methodologically structured into three interdependent and sequential Clusters. Each cluster serves as a technical prerequisite for the subsequent stage, ensuring a data-driven transition from analysis to intervention:

Cluster 1: Knowledge generation

This first cluster of activities will establish the evidence base needed to understand sediment dynamics and erosion processes across the Bojana/Buna watershed, river corridor, and coastal zone. Using hydraulic tools, it will analyse sediment transport pathways, connectivity, and coastal erosion to identify key hotspots and their underlying mechanisms. Based on these findings, an ecosystem-based erosion mitigation framework will be developed drawing on best available practices. A feasibility study with technical annexes will then be prepared, identifying priority intervention areas based on impact and feasibility, proposing ecosystem-based erosion control measures with technical descriptions, and setting out appropriate monitoring and evaluation frameworks for the subsequent implementation phases.

The activities described above will be addressed through the current Terms of Reference. Subsequent phases, based on the results of Cluster 1, will include activities that will be developed through separate ToR and contracts. These phases and activities are described below to provide overall context.

Cluster 2: Detailed Design & Field Implementation

Framed by the outputs from cluster one, Cluster two will include the following:

-Identification of specific sites within the priority intervention areas that the activities and works will focus, based on (i) the ecosystem-based erosion mitigation works and interventions that will be chosen, and (ii) a set of criteria including among others, ownership of the specific sites, possible legal implications, licencing and permitting procedure for interventions etc.
- Development of detailed designs for the chosen ecosystem-based erosion control measures and interventions in each site and obtaining the necessary licences etc.
- Implementation of works and interventions in the selected sites, monitoring and evaluation.

Cluster 3: Monitoring, Evaluation, and Strategic Scaling

The final cluster focuses on evaluating the effectiveness of the implemented measures and translating technical results into policy measures to propose to the Drin Riparians. This cluster will generate the background information, evidence and concept to be presented to authorities, donors and development partners to jointly explore opportunities for replicating and scaling up successful solutions. Additionally, a report on the applicability of erosion control measures will be developed along with technical advice for the authorities of the Drin Riparians regarding the integration of erosion control considerations and measures into national policy and legal instruments.

Work will capitalize and build on the improved knowledge on erosion processes to be gained through the results of other projects[1].

2. Description of the Assignment

Objective

To establish a scientific and knowledge foundation for identifying and designing ecosystem-based erosion control measures at the Bojana/Buna Delta. An Erosion and Sediment Assessment will be conducted to analyze the erosion and sediment dynamics throughout the Bojana/Buna River basin and the adjacent coastal areas. Furthermore, a Feasibility Study will be prepared to guide decision-making regarding intervention areas and to determine an appropriate suite of ecosystem-based erosion control measures, including their scope, geographical distribution, and focus.

[1] E.g. Conservation and revitalization of Ada Bojana Review of the Study Final Report (COWI, 2022) and results of the project Integrated Climate-Resilient Transboundary Flood RM (UNDP- ongoing).

3. Tasks – Requested services

Task 1: Inception report - Background Research

The Participant [2] shall:

- Conduct an initial desk-based review to collect and analyze existing information -including previous projects results- relevant to the assignment. The Participant is responsible to identify and use the appropriate information sources for the needs of this assignment, ensuring that all available relevant information is collected and used. A comprehensive bibliography and inventory of all collected datasets, models, and literature will be provided as Annex.
- Determine data and information gaps and deficiencies pertinent to erosion and sediment evaluation and determine which of these gaps could/should be covered through modelling activities to be undertaken under this assignment. Prepare an action plan for obtaining any additional data and information required to complete the assignment and present it in gap-data matrix that will clearly delineate what data will be collected by the Participant (readily available) and what should be collected by the Participant with support of the Contractor (data available on the request).
- Develop a Methodology and Workplan for erosion and sediment assessment with a focus on identifying and describing appropriate modelling tools, their appropriateness and linkages with as well as content of the ecosystem-based erosion control mitigation planning framework to be developed in Task 3 (core of the Feasibility study) and operationalized in Task 4.
- Propose adjustments to the tasks and work described in this ToR to achieve the objective of the assignment.
- Prepare and submit to GWP-Med for approval an Inception Report summarizing the findings and outcomes of the inception phase encompassing the elements and the reports of the tasks described above. An annotated table of contents will be prepared and agreed with GWP-Med prior to the development of the inception report.

The Data Matrix and respective data collation format (tables and maps) for this assignment, will be agreed upon in coordination with GWP-Med to ensure conformity with the structural and technical parameters of the Drin-IMS[3]. Data deficiencies may necessitate a methodological revision -subject to approval in the Inception Report- but shall not constitute grounds for failing to complete subsequent tasks.

Supplementary Deliverable: Cross-Border Data Harmonization Report (Albania Baseline)

To support the inception phase, a dedicated local data collection expert in Albania will be provided to assist the Participant's team in navigating local institutions, hydro-meteorological networks, and administrative archives within the Albanian part of the catchment.

[2] The Participant refers to a registered company or consortium of companies. In the case of a consortium, one member shall be designated as the lead entity responsible for coordination and contractual obligations, unless otherwise specified.

[3] Dringis.org

Parallel to the Inception Report, the Participant shall deliver a standalone technical report and an annexed database focusing on the integration of these inputs, fulfilling the following specific requirements:

1. Collect and review hydro-meteorological, geological, spatial datasets and other applicable from the Albanian part of the sub-basin to ensure full alignment with the baseline data available for the Montenegrin part of the basin. These datasets must be fully compatible with the technical parameters (i.e. resolution, spatial extent, and calibration standards etc.) applied throughout the project to guarantee possibly complete harmonization and suitability for subsequent activities.

2. Document the structure, scaling, and format adjustments required to ensure the collected cross-border datasets—including documented data gaps and proposed interpolation methods—are plug-and-play ready for subsequent hydrological and morphodynamic simulations under Task 2. Additionally, the Participant shall provide a detailed estimation of the Level of Effort (LoE) in person-days, along with the corresponding budget required, should these datasets be utilized in future tasks of this assignment.

3. This task is strictly data consolidation, processing, and harmonization exercise. To maintain the established project timeline and prevent delays associated with transboundary calibration issues, the Participant shall not incorporate these specific Albanian datasets into the operational modeling runs conducted under the current assignment. All ongoing modeling activities shall rely strictly on the pre-agreed baseline datasets.

Deliverable 1: Inception Report with updated Methodology and Workplan plan based on available data

Deliverable 1.1: Supplementary Deliverable - Cross-Border Data Harmonization Report and Database (Albania Baseline)

Task 2: Modelling tools - Hydraulic and Channel Sediment Modelling, Connectivity Index (CI/FIC) for Overland and Floodplain Sediment Transport and Coastal Hydrodynamic and Morphodynamical Modelling

Objectives

- **Establish a quantitative understanding of erosion and sediment transport processes** within the Bojana/Buna River basin and the adjacent coastal zone, using modeling tools.
- **Identify and spatially delineate erosion and sediment transport hotspots** across the land–river–coast continuum, including riverbanks, floodplains, hillslopes, and coastal segments with high susceptibility to erosion and sediment imbalance.
- **Assess sediment sources, transport pathways,** and fluxes from the catchment through the river system to the coastal and nearshore environment, accounting for all interconnected hydrological and morphodynamic processes.
- **Provide a process-based evidence base for risk-informed decision-making**, supporting the prioritization of intervention areas and the design of effective ecosystem-based erosion control measures in subsequent project phases.
- **Establish a harmonized spatial analytical** framework that integrates catchment, riverine, and coastal modeling outputs to directly inform subsequent planning and implementation phases**.**

All envisaged sub-tasks will be performed based on available data screened under the task 1.

The following sub-tasks framework will be undertaken by the Participant for the achievement of the set objectives:

Sub-task 1: Hydraulic and Channel Sediment Modeling

The Hydraulic and Channel Sediment Modeling activity aims to quantitatively analyze hydraulic and sediment transport processes along the main Bojana/Buna river channel, providing basis for understanding channel morphodynamics, identifying areas of active bank erosion, and assessing sediment fluxes at strategically important locations within the river system.

Scope and methodological approach

The activity will include the development and application of numerical hydraulic and sediment transport models (1D/2D, depending on data availability and channel complexity) to support reach-scale analysis. The modeling framework will address the following core tasks:

- **Simulation of water flow along the main channel,** under representative hydrological conditions, in order to appropriately characterize hydraulic forces.
- **Identification of bank erosion hotspots,** where modeled hydraulic parameters (e.g. shear stress and flow velocity) exceed critical resistance thresholds of bank materials, with particular attention to channel bends, laterally dynamic reaches, and zones influenced by existing hydraulic structures.
- **Estimation of sediment fluxes at key control points,** including upstream sections influenced by the Drin River (confluence of Drin river to Bojana/Buna river) and the downstream section at the confluence with the Adriatic Sea, allowing for the preliminary quantification of sediment inputs, transfers, and outputs along the main channel.

Sub-Task 2: Connectivity Index (CI/FIC) for Overland and Floodplain Sediment Transport

This project activity aims to assess and map the potential connectivity of overland and floodplain sediment transport within the watershed, with a focus on identifying areas that are most likely to deliver sediment to the river network. The activity is grounded in the sediment connectivity concept and the Index of Connectivity (IC) and Field Index of Connectivity (FIC) framework developed by Borselli et al. (2008), which provides a spatially explicit and process-based approach to sediment transfer analysis.

Scope and methodological approach

The activity will apply a GIS-based connectivity analysis to evaluate the potential for sediment generated on hillslopes and floodplains to reach the river system. The analysis will be based on readily available data collected under the Task 1.

Using these inputs, a Connectivity Index (CI/IC) will be calculated to integrate:

- an upslope component, representing sediment availability and contributing area,
- a downslope component, representing the efficiency of sediment transfer along flow paths, accounting for slope, surface roughness, and land use impedance.

Where feasible, the GIS-based results may be supported by field-based observations (FIC) to improve interpretation and validation of connectivity patterns.

The connectivity analysis will enable the identification of high-connectivity zones, defined as areas where sediment sources are efficiently linked to the river network through continuous or low-resistance flow paths. These zones represent critical contributors to sediment delivery during rainfall and flood events and are therefore priority areas for sediment management, erosion control, and land-use planning.

Sub-Task 3: Coastal Hydrodynamic and Morphodynamic Modeling

Sub-task 3 focuses on the development and application of a numerical coastal hydrodynamic and morphodynamic model to analyze coastal processes and shoreline evolution in the areas of Velika Plaža and Ada Bojana. The modeling activity aims to improve the quantitative understanding of coastal dynamics as a basis for evidence-based coastal management.

Scope and methodological approach

The activity will involve the setup and calibration of an integrated numerical modeling framework capable of simulating key coastal processes, including:

- wave propagation and transformation,
- nearshore and alongshore currents,
- sediment transport in the coastal and nearshore zone,
- shoreline and seabed morphodynamic evolution under different hydrodynamic conditions.

The model will be applied to representative hydrodynamic appropriate scenarios in order to assess spatial patterns of sediment mobilization, transport pathways, and zones of erosion and accretion along the coastline.

Based on model outputs, coastal segments characterized by high instability—including erosion hotspots and significant sediment deposition zones, will be identified and preliminarily quantified.

Deliverable 2a: Report on Hydraulic and Channel Sediment Modelling, including Source files

Deliverable 2b: Report on Connectivity Index (CI/FIC) for Overland and Floodplain Sediment Transport, including a probabilistic erosion risk map for the watershed (GIS files/data base)

Deliverable 2c: Report on Coastal Hydrodynamic and Morphodynamic Modeling, including Source files

Task 3: Development of the Feasibility Study

Task 3 focuses on the integration and interpretation of data collected and modelling outputs from Task 1 and 2 to define spatially targeted, ecosystem-based erosion control measures. It builds on hydraulic, sediment, connectivity, and coastal modelling results to develop a coherent Ecosystem-based Erosion Control Mitigation Planning Framework. This framework serves as the strategic core of the project; it translates complex modelling into a decision-making logic for landscape stability. The Framework shall be presented as a core, distinct section of the Feasibility Study, providing the methodology that guides the site selection, Implementation Sequencing, and Technical Specifications to be included in the Annexes of the deliverables of the Task 4.

The Feasibility study will also include, but not limit to:

a) Identification of erosion dynamics and selection of priority areas for intervention

The Participant shall identify priority erosion hotspots and target intervention sites through an integrated spatial analysis. This process shall consist of three steps:

1. Map cross-scale sediment dynamic based on the outputs/results generated under task 1 and 2. This would be done by GIS overlaying and analyses to (the following list is not exhaustive):
    - riverbank erosion hotspots identified through hydraulic and channel sediment modelling (e.g. HEC-RAS),
    - watershed-scale erosion and sediment delivery risk maps derived from the Connectivity Index (CI/FIC) analysis for slopes and floodplains,
    - coastal and nearshore sediment dynamics erosion maps resulting from coastal hydrodynamic and morphodynamic modelling.

The combined analysis will enable a cross-scale understanding of sediment sources, transport pathways, and deposition zones, ensuring consistency between upstream catchment processes, river dynamics, and coastal sediment behaviour.

2. Conducting Multi-Criteria Decision-Making Analyses (MCDM):

    Priority areas for ecosystem-based erosion interventions will be identified through a multi-criteria decision-making analysis developed by the Participant. Selection criteria, to be defined and agreed with GWP-Med in advance, will encompass intervention

effectiveness, spatial distribution, and legal or permitting considerations. Specific intervention sites within these priority areas will be selected during subsequent project clusters, following the conclusion of the activities under this ToR.

From the identified hotspots, The Participant shall select priority intervention areas within the hotspots identified through the modelling and GIS exercises. Selection criteria include (the list is not exhaustive and is subject to revision and amendment after discussion and agreement with GWP-Med) where:

- Erosion risk is high and persistent, and high sediment connectivity facilitates efficient downstream transport
- Hydraulic/coastal forcing exceeds local resistance thresholds.
- Ecosystem-based or hybrid no-regret measures (combining nature-based solutions with structural engineering) can reduce erosion, enhance sediment retention, or stabilize geomorphological features.

Ecosystem restoration practices support the natural sediment balance specifically through erosion prevention and coastal sediment accumulation—while enhancing climate adaptation and resilience.

Analyses must include legal, permitting, and land-ownership considerations.

3. Field verification: Identified priority areas must be verified, on the field by the Participant, to validate modelling results and confirm local geomorphological and soil conditions

b) Mitigation planning and functional selection of Measures

For each priority area, site-specific ecosystem-based erosion mitigation strategies will be defined based on geomorphological setting, hydrological conditions, soil characteristics, and exposure to hydraulic or coastal forces. While the focus remains on ecosystem-based solutions, the Participant shall propose (where necessary) hybrid interventions where vegetation is reinforced by no-regret engineering. In areas where "Vegetation-Only" measures are technically unfeasible due to hydraulic forcing, the Participant shall identify additional soft-engineering measures (e.g., riprap, sand fences or biodegradable geo-textiles).

Integrated measures will be selected and proposed according to site typology, and a comprehensive feasibility assessment will be conducted to ensure they address specific site needs in the following areas:

- Riparian Zones: Deploying suitable shrub and tree species combined with eco-bioengineering techniques to enhance bank stabilization and increase flow resistance, particularly where hydraulic forcing exceeds vegetation-only thresholds.
- Floodplains and slopes, where grasses, shrubs, or forest species if required supported by minor earthworks or natural debris dams can reduce surface erosion and sediment connectivity.
- Coastal backshore and transitional areas, where vegetation possibly combined with soft engineering (e.g., poles, sand fences or biodegradable geo-textiles) can contribute to surface stabilization and sediment retention.

Proposals must be indicative and based on functional performance (e.g., root reinforcement, flow resistance, sediment retention) and ecological suitability (native species), focusing on how biological and physical measures work together to stabilize the site rather than prescriptive planting designs.

Deliverable 3: Feasibility Study with a set of ecosystem-based erosion control measures in the Bojana/Buna Delta

The Participant will prepare a Feasibility Study based on performed activities under the task 2 and task 3, with identified and evaluated set of ecosystem-based erosion control measures in the Bojana/Buna Delta.

Task 4: Prepare Technical background for full implementation (phase 2) including key design guidance and technical input for the tender dossiers

Task 4 focuses on preparing technical background documentation to support the development of detailed designs and tender dossiers for the implementation phase (Cluster 2) of the Pilot project.

Building on the Feasibility Study (Task 3), the Participant shall develop site-specific technical annexes for the priority intervention areas. These annexes serve as the "Technical Specifications" for procurement, defining the parameters for both ecosystem-based and hybrid engineering measures.

The technical annexes shall include, as relevant (the list is not exhaustive and is subject to revision and amendment after discussion and agreement with GWP-Med):

- Detailed description of proposed measures (vegetation, bio-engineering, or hybrid no-regret measures, their hydraulic objectives, and intended erosion mitigation functions per priority site (including: type, objective, and expected function).
- Detailed Delineation of intervention areas (maps/GIS layers).,
- Key technical specifications and implementation requirements including methodological guidance on the site preparation, planting typologies, species densities, installation techniques and indicative materials and methods.
- Further requirements for “hybrid" no-regret" measures (e.g., rock grades for toe protection, types of geo-textiles, timber poles, etc.) integrating nature-based solutions with structural engineering.
- Identification of constraints and site-specific considerations (e.g. legal, environmental, access).
- Preliminary guidance for implementation sequencing and phasing. Monitoring and Evaluation (M&E) Protocol: A site-specific framework defining key performance indicators (KPIs) for the

implementation phase. This shall include biological indicators (e.g., survival and growth rates of native species). Physical/Hydraulic indicators (e.g., bank stability, sediment retention at hotspots, and performance of hybrid/no-regret structures) and standardized reporting templates to ensure data consistency for the Cluster 3 strategic evaluation.

The level of detail shall be sufficient to inform development of the Bill of Quantities (BoQ) and guide next phases (cluster 2 and 3) of detailed design procurement and monitoring processes, without constituting full engineering or execution design.

Deliverable 4: Technical background for full implementation (phase 2) including key design guidance and technical input for the tender dossiers

4. Reporting, Deliverables and Milestones

The Successful Participant is expected to provide the following deliverables, which are directly related to the tasks outlined in detail under Section 3, based on the below timeline (expressed in weeks after the contract is signed). The schedule for submission may be adjusted as necessary during the contract preparation period. All deliverables should be submitted in English, unless otherwise specified.

Tasks		Deliverables	Deadline (weeks)[4]	Payment (%)[5]
1	▪ Background research	1. Inception Report with updated Methodology and Workplan plan based on available data	6	30
		1.1. Supplementary Deliverable - Cross-Border Data Harmonization Report and Database (Albania Baseline)		
2	▪ Modelling tools - Hydraulic and Channel Sediment Modelling, Connectivity Index (CI/FIC) for Overland and Floodplain Sediment Transport and Coastal Hydrodynamic and Morphodynamical Modelling	2a. Report on Hydraulic and Channel Sediment Modelling, including Source files	21	40
		2b. Report on Connectivity Index (CI/FIC) for Overland and Floodplain Sediment Transport, including GIS/data base files		
		2c. Report on Coastal Hydrodynamic and Morphodynamic Modelling, including Source files		
3	▪ Development of the Feasibility Study	3. Feasibility Study with a set of ecosystem-based erosion control measures in the Bojana/Buna Delta	25	30
4	▪ Technical background for full implementation (phase 2) including key design guidance and technical input for the tender dossiers	4. Technical background for full implementation (phase 2) including key design guidance and technical input for the tender dossiers	29	

Reporting Line

The successful Participant will work under the direct supervision of / and communicate directly with the Project Manager and the appointed GWP-Med Programme Officer.

The rendering of services shall be executed, and completion thereof shall be determined, upon the satisfaction and approval of the deliverables by the Project Manager and GWP-Med team.

Confidentiality

[4] Weeks after contract signature
[5] Percentage of contract price

All information supplied by GWP-Med in connection with this tender to date, and any further information supplied during the tender process shall be regarded as confidential and must not be shared with any other organization without written permission of GWP-Med.

5. Payment modalities

Payment Schedule:
Completion and delivery of deliverable 1 & 1.1: 30% of total contract amount
Completion and delivery of deliverables 2a,2b,2c: 40% of total contract amount
Completion and delivery of deliverables 3&4: 30% of total contract amount

Each payment will be issued after the quality assessment and approval of each deliverable by the Contracting Authority. Then, the awarded Participant will issue the respective invoices.

In the event that there are delays in the execution of the contract the awarded Participant is liable to a deduction of €100 per day, for every day of delay, including Sundays and public holidays, up to a maximum of 10% of the contracted amount in case there are delays in the execution.

6. Contract price and duration.

The maximum fee for this assignment is **138,000 USD**. This amount includes all other costs, including travels, income taxes and any other amount payable or cost that may be required for the completion of the work/service, including VAT and travel related cost.

All payments shall be upon reception and acceptance/verification of the deliverables. Claims for payment will be made through an Invoice accompanied by proof of delivery.

The activity will be delivered under the lead and guidance of Project Coordination Unit.

The overall duration of the contract will be for a maximum of **8 months** after the contract signature. Payments will be made upon acceptance and verification of the related deliverables, as laid out in section 4 “Reporting, deliverables, and Milestones”.

7. Disqualification criteria ON/OFF

For details on the ON/OFF disqualification please refer to the Call for Offers

8. Selection Criteria (pass / fail)

Successful participant (Natural or Legal Person or Entity) must:

- Have Average annual turnover for the last three financial years, at least equivalent to the maximum amount of this call. As supporting documentation, the applicant must provide their official Financial Statements, stamped, and signed by the legal representative of the company.
- Be enrolled in one of the official professional or trade registries at the country of registration.
- Participants must present a minimum duration of operation of five (5) years. Proof to be provided by the related chamber (date of registration).

Failure to comply with the above ON/OFF requirements or to provide relevant proof with the application is considered ground for exclusion.

9. Qualification and Experience

Participants in the call are required to have solid experience in developing and managing complex projects in the field related to the tasks described in the ToR. This needs to be demonstrated in the Technical Offer to be submitted as part of the application. A template for the Technical Offer form is available as Annex 2.

The **Technical Offer** Form consists of the following sections:

- Section 1: Expertise and work experience

- Section 2: Approach and Methodology

Regarding Section 1: Expertise and work experience:

Participants in the call are required to demonstrate substantial experience in using modelling tools, designing, implementing, and managing complex projects related to sediment assessment and erosion control measures on the basin level, including costal area. Applicants must provide evidence of at least two relevant projects completed within the past ten years that reflect a comparable level of technical complexity and thematic relevance (e.g., erosion control, sediments assessment, modelling tools application).

The scope of work requires an interdisciplinary team of skilled experts with previous experience in activities similar to those that this assignment entails. The required qualifications for all experts to be engaged in this assignment are presented in Table 1 below.

The inclusion of experts so as the team responds to every area of expertise defined in the table below is mandatory.

If the qualifications of an expert cover the requirements of more than one area of expertise, that expert can be also proposed for these other areas.

Qualifications additional to the minimum requested per category will receive additional score under the evaluation process as described in the section Evaluation Process and Awarding Criterion.

In addition, the Participant may propose -as they deem appropriate- additional experts covering other specific areas of expertise.

Failure to provide the minimum required qualifications is considered ground for disqualification.

Table 1 – Required qualifications for the Team of Experts

Expert #	Area of expertise	Qualifications
1	**Team Leader - TL**	Advanced university degree (as minimum master's or equivalent) in geology/erosion control. A degree in a related discipline may be considered if directly relevant to the assignment and supported by substantial professional experience. (Required ON/OFF)
		Minimum 20 years of relevant professional experience in erosion assessment and implementation of erosion control measures. (Required/Evaluated)

		At least 10 years of experience in leading multidisciplinary teams in erosion control and sediment assessment projects (Required/Evaluated)
		Experience from the Adriatic region, preferably from Montenegro (Required/Evaluated)
		Fluency in written and spoken English (Required ON/OFF);
2	**Sediment Transport Modelling**	Advanced university degree (at minimum Master's or equivalent) in hydrology, geology, civil engineering (hydrotechnic). A related degree may be accepted if aligned with the assignment scope and supported by relevant experience. (Required ON/OFF)
		Minimum 15 years of experience in hydrological modelling and sediment transport management using modelling tools (Required/Evaluated)
		Demonstrated involvement in at least two projects over the past 10 years, undertaking tasks relevant to the sediment transport management and implementation of erosion control measures on the basin level in the Adriatic Region (Required/Evaluated)
		Fluency in written and spoken English (Required ON/OFF)
3	**Soil Erosion Expert**	Advanced university degree (at minimum Master's or equivalent) in geology, civil engineering, hydrology. A related degree may be accepted if relevant to the assignment and supported by professional experience. (Required ON/OFF)
		Minimum 10 years of experience in soil erosion and application of science-based tools for erosion assessment on the basin level (catchment area). (Required/Evaluated)
		Demonstrated experience in at least two projects in last 10 years involving soil erosion assessment in the Adriatic region. (Required/Evaluated)
		Fluency in written and spoken English (Required ON/OFF)
4	**Coastal Erosion Modelling**	Advanced university degree (at minimum Master's or equivalent) in geology, coastal science, hydrology. A related degree may be accepted if relevant to the assignment and supported by professional experience. (Required ON/OFF)
		Minimum 10 years of experience in coastal numerical modelling and coastal sediment transport management (Required/Evaluated)

		Demonstrated experience in at least two projects within the past 10 years targeting coastal numerical modelling, sediment transport management and implementation of erosion control measures in the Adriatic region. (Required/Evaluated)
		Fluency in written and spoken English (Required ON/OFF).
5	**Data management and GIS expert**	University degree in geography, informatics, agriculture, natural sciences, mathematics or equivalent related to GIS, mapping, databases, data processing or equivalent (Required ON/OFF).
		Fluency in both written and spoken English (Required ON/OFF).
		At least 5 years of experience in data management: GIS, mapping, databases, data processing applied in the field of earth sciences or other related areas - (Required/Evaluated).
		Working experience in multidisciplinary projects in development of GIS data basis and maps creation – at least one project (Desired/Evaluated)
6	**Local Biodiversity/ Vegetation expert**	Advanced university degree (at minimum Master's or equivalent) in biology, forestry. A related degree may be accepted if relevant to the assignment and supported by professional experience. (Required ON/OFF)
		Minimum 20 years of experience in assessment and research of native Mediterranean flora and biodiversity conservation with focus on habitat preservation (Required/Evaluated)
		Demonstrated experience in at least one projects within the past 10 years targeting implementation of ecosystem-based erosion control measures in Montenegro (Required/Evaluated)
		Fluency in written and spoken Montenegrin/Serbian and English (Required ON/OFF).
7	**Local Albanian Data collection expert**	University degree in geology, earth sciences, civil engineering, hydrology. A related degree may be accepted if relevant to the assignment and supported by professional experience. (Required ON/OFF)
		Fluency in both written and spoken English (Required ON/OFF)
		At least 5 years of experience in data collection, processing, and presentation in the field of geology, hydrology and other earth science related disciplines in Albania (Required/Evaluated).

		Working experience in multidisciplinary projects in data collection and presentation in Albania – at least one project (Desired/Evaluated)

Table 2: Workload of the key experts envisaged

Key Experts	Workload (envisaged in expert days)
1: Team Leader	40
2: Sediment Transport Modelling Expert	40
3: Soil Erosion Expert	30
4: Coastal Erosion Modelling Expert	40
5: Data management and GIS expert	10
6: Biodiversity/Plant expert	15
7: Local Albanian Data collection expert	15

Notes:

- There is no limitation on the number of experts per area of expertise, but only the lead expert per area of expertise will be evaluated according to the detailed evaluation/scoring. Thus, please indicate the lead expert for each area of expertise.
- If the qualification of an expert covers the requirements of more than one area of expertise, that expert can be also proposed for these other areas.
- Additional experts, covering a range of other related expertise considered and justified as necessary by the participant will be evaluated in addition.
- The number of planned man-days per expert/area of expertise need to be indicated in the Participant's proposal. The estimated number of required expert-days per area of expertise should be indicated for all key and non-key experts.
- Failure to cover all areas of expertise is considered grounds for disqualification.

Evaluation Process and Awarding Criterion

AWARD CRITERION: The most economically advantageous offer based on the best price/quality ratio.

Offers shall be evaluated as follows:

Offers qualified in terms of exclusion grounds and selection criteria will be further evaluated on the basis of the requirements presented under section "Qualification and Experience", as follows:

(1) Criterion	(2) Weighting (w)	(3) Points of criterion (c)	(4) Score= (2) x (3)
Section 1: Expertise and work experience	**80 % of total**		
Participants in the call are required to demonstrate substantial experience in using modelling tools, designing, implementing, and managing complex projects related to sediment assessment and erosion control measures on the basin level, including costal area. Applicants must provide evidence of at least two relevant projects completed within the past ten years that reflect a comparable level of technical complexity and thematic relevance (e.g., erosion control, sediments assessment, modelling tools application). (Required/Evaluated)	15%		
Key expert 1: Team Leader - TL	**13%**		
Advanced university degree (as minimum master's or equivalent) in geology/erosion control. A degree in a related discipline may be considered if directly relevant to the assignment and supported by substantial professional experience. (Required ON/OFF)			
Fluency in written and spoken English (Required ON/OFF)			
Minimum 20 years of relevant professional experience in erosion assessment and implementation of erosion control measures. (Required/Evaluated)	4%		
At least 10 years of experience in leading multidisciplinary teams in erosion control and sediment assessment projects (Required/Evaluated)	4%		
Relevant experience from the Adriatic region, preferably from Montenegro (Required/Evaluated)	5%		
Key Expert 2: Sediment Transport Modelling	**9%**		
Advanced university degree (at minimum Master's or equivalent) in hydrology, geology, civil engineering (hydrotechnic). A related degree may be accepted if aligned with the			

(1) Criterion	(2) Weighting (w)	(3) Points of criterion (c)	(4) Score= (2) x (3)
assignment scope and supported by relevant experience. (Required ON/OFF)			
Fluency in written and spoken English (Required ON/OFF)			
Minimum 15 years of experience in hydrological modelling and sediment transport management using modelling tools (Required/Evaluated)	4%		
Demonstrated involvement in at least two projects over the past 10 years, undertaking tasks relevant to the sediment transport management and implementation of erosion control measures on the basin level in the Adriatic Region (Required/Evaluated)	5%		
Key Expert 3: Soil Erosion Expert	**9%**		
Advanced university degree (at minimum Master's or equivalent) in geology, civil engineering, hydrology. A related degree may be accepted if relevant to the assignment and supported by professional experience. (Required ON/OFF)			
Fluency in written and spoken English (Required ON/OFF)			
Minimum 10 years of experience in soil erosion and application of science-based tools for erosion assessment on the basin level (catchment area) (Required/Evaluated)	4%		
Demonstrated experience in at least two projects in last 10 years involving soil erosion assessment in the Adriatic region (Required/Evaluated)	5%		
Key Expert 4: Coastal Erosion Modelling Expert	**9%**		
Advanced university degree (at minimum Master's or equivalent) in geology, coastal science, hydrology. A related degree may be accepted if relevant to the assignment and supported by professional experience. (Required ON/OFF)			
Fluency in written and spoken English (Required ON/OFF)			

(1) Criterion	(2) Weighting (w)	(3) Points of criterion (c)	(4) Score= (2) x (3)
Minimum 10 years of experience in coastal numerical modelling and coastal sediment transport management (Required/Evaluated)	4%		
Demonstrated experience in at least two projects within the past 10 years targeting coastal numerical modelling, sediment transport management and implementation of erosion control measures in the Adriatic region. (Required/Evaluated)	5%		
Key Expert 5: Data management and GIS Expert	**6%**		
University degree in geography, informatics, agriculture, natural sciences, mathematics or equivalent related to GIS, mapping, databases, data processing or equivalent (Required ON/OFF).			
Fluency in written and spoken English (Required ON/OFF)			
At least 5 years of experience in data management: GIS, mapping, databases, data processing applied in the field of earth sciences or other related areas - (Required/Evaluated).	3%		
Working experience in multidisciplinary projects in development of GIS data basis and maps creation – at least one project (Desired/Evaluated)	3%		
Key expert 6: Biodiversity/Plant Expert	**12%**		
Advanced university degree (at minimum Master's or equivalent) in biology, forestry. A related degree may be accepted if relevant to the assignment and supported by professional experience. (Required ON/OFF)			
Fluency in written and spoken English (Required ON/OFF)			
Minimum 20 years of experience in assessment and research of native Mediterranean flora and biodiversity conservation with focus on habitat preservation (Required/Evaluated)	4%		

(1) Criterion	(2) Weighting (w)	(3) Points of criterion (c)	(4) Score= (2) x (3)
Demonstrated experience in at least one projects within the past 10 years targeting implementation of ecosystem-based erosion control measures in Montenegro (Required/Evaluated)	8%		
Key Expert 7: Local Albanian Data collection expert	**7%**		
University degree in geology, earth sciences, civil engineering, hydrology. A related degree may be accepted if relevant to the assignment and supported by professional experience. (Required ON/OFF)			
Fluency in written and spoken English (Required ON/OFF)			
At least 5 years of experience in data collection, processing, and presentation in the field of geology, hydrology and other earth science related disciplines in Albania (Required/Evaluated)	4%		
Working experience in multidisciplinary projects in data collection and presentation in Albania – at least one project (Desired/Evaluated)	3%		
Section 2: Approach and Methodology	**20% of total**		
Approach to the requested Assignment: detailed description of the methodology of how the Participant will achieve all objectives and tasks and deliver all outputs as described in the Terms of Reference of the assignment (including the activity plan), keeping in mind the appropriateness to local conditions. The approach should include also composition of the team (listed key and non-key experts), with envisaged No of WDs, Risks / Mitigation Measures including a) description of the potential risks for the implementation of this assignment that may impact achievement and timely completion of expected results as well as their quality, and b) description measures that will be put in place to mitigate these risks.	20%		

Failure to provide the minimum required qualifications is considered ground for disqualification.

Scoring for each evaluated section will be made as following:

Section 1 – Expertise and work experience: score starts at 100 points (when minimum requirements are met) and can reach 150 points depending on the description of the participant and the number of projects implemented in excess of those required as a minimum. (100p Base +10p for extra criteria over base up to 50 additional points)

Section 2 – Approach and Methodology: score starts at 100 points and can reach 150 points depending on the length, detail, depth, and structure of the information provided.

Each Section/evaluation criterion is evaluated autonomously. The final scoring of each evaluation criterion is the outcome of its scoring multiplied by the corresponding weighting factor. The overall score of the technical offer is the sum of the final scoring of all the Sections/evaluation criteria.

The overall score of the technical offer is calculated on the basis of the following formula:

Bi = w1 x c1 + w2 x c2 +……

For the overall score which will determine the ranking of offers, technical evaluation will be weighted with 80%, and the financial offer with 20%.

The final listing of the most advantageous offers will be made on the basis of the following formula:

Λi = 0.8* (Bi/Bmax) + 0.2 * (Kmin/Ki).

Where:

- Bmax: the max score received by the best of the technical offers received

- Bi: the score of the technical offer

- Kmin: The cost of the financial offer with the minimum price offered.

- Ki: The cost of the financial offer

The most advantageous offers is the one with the greater value of Λ.

In case of equality of overall scores, the winning proposal is the one whose corresponding technical proposal received the highest rating.

10. Monitoring and Progress Controls

The successful Participant will work under the direct supervision of / and communicate directly with the Project Manager and the appointed GWP-Med Programme Officer.

The rendering of services shall be executed, and completion thereof shall be determined, upon the satisfaction and approval of the deliverables by the Project Manager and GWP-Med team.

11. Place of Performance

The Participant shall perform services from a location of their choosing.

Travel will be required to verify identified priority areas for implementation of erosion control measures, and for vegetation planning and species selection.

Travel-related expenses are included in this contract.

12. Terms and Conditions

- **Language**

The language of the key deliverables/outputs is English. The quality of written English must meet professional standards; failure to do so may constitute grounds for withholding the final payment.

- **Submission of data, reports and other material produced**

All primary data, reports, and other documentation produced during this assignment shall be made available to GWP-Med and to the relevant institutions in electronic format,including all raw data. All data acquired, and products developed during the assignment will be in the ownership of the Project and cannot be used by the Participant and its team without prior written permission.

- **Review and quality assurance**

A thorough evaluation of the Participant's work conducted during the course of the assignment implementation, as well as a comprehensive review of the deliverables, may be conducted by an independent external expert or team of experts. The Participant is expected to thoroughly consider and incorporate any relevant observations or recommendations provided by the reviewer(s) into the final versions of the deliverables.