



Enabling
& Transboundary Cooperation
Integrated Water Resources Management
in the extended **DRIN RIVER BASIN**



Terms of reference:
***Technical assistance to the Project
Coordination Unit for the development of
the Drin GIS portal and Information
Management System***

In the framework of:

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

GEF Project “Enabling Transboundary Cooperation and Integrated Water
Resources Management in the Extended Drin River Basin”

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.

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Introduction - Background

The Drin Memorandum of Understanding

1. Coordinated action at the Drin Basin level has been absent until the development of the Shared Vision for the sustainable management of the Drin Basin and the signing of a related Memorandum of Understanding (Tirana, 25 November 2011) by the Ministers of the water and environment management competent ministries of the Drin Riparians i.e. Albania, North Macedonia, Greece, Kosovo* and Montenegro. This was the outcome of the Drin Dialogue coordinated by the Global Water Partnership Mediterranean (GWP-Med) and UNECE.
2. The main objective of the Drin MoU is the attainment of the Shared Vision: *“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”*.
3. The **ultimate goal** of the work in the Drin Basin is to reach a point in the future where the scale of management lifts from single water bodies to the hydrological interconnected system of the Drin Basin, eventually leading from the sharing of waters among Riparians and conflicting uses, to the sharing of benefits among stakeholders.

The Drin Coordinated Action

4. A process called the “Drin CORDA”, Drin Coordinated Action for the implementation of the Drin MoU, was put in place after the signing of the latter.
5. Following the provisions of the MoU an institutional structure was established in 2012. 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.
 - Three **Expert Working Groups (EWG)** to assist the DCG in its work:
 - Water Framework Directive implementation EWG.
 - Monitoring and Information exchange EWG.
 - Biodiversity and Ecosystem EWG.
6. The **DCG Secretariat** provides technical and administrative support to the DCG; Global Water Partnership – Mediterranean (GWP-Med) serves by appointment of the Parties through the MoU as the Secretariat.
7. An Action Plan was prepared to operationalize the Drin CORDA. This has been subject to updates and amendments in accordance with the decisions of the Meeting of the Parties to the Drin MoU and the DCG. The DCG and its Secretariat guides the implementation of the action plan while its implementation is currently being supported by the Global Environment Facility¹ (GEF); see below.

The GEF Drin Project

8. The Global Environment Facility (GEF) supported Project “Enabling transboundary cooperation and integrated water resources management in the extended Drin River Basin” (GEF Drin Project)

¹ www.thegef.org

is aligned in content, aims and objectives with the Action Plan and the activities under the Drin CORDA.

9. The objective of the project is to *promote joint management of the shared water resources of the transboundary Drin River Basin, including coordination mechanisms among the various sub-basin joint commissions and committees*. Albania, North Macedonia, Kosovo and Montenegro are the Project beneficiaries.
10. The GEF Drin project is structured around five components:
 - a. Component 1: Consolidating a common knowledge base
 - b. Component 2: Building the foundation for multi-country cooperation
 - c. Component 3: Institutional strengthening for Integrated River Basin Management (IRBM)
 - d. Component 4: Demonstration of technologies and practices for IWRM and ecosystem management
 - e. Component 5: Stakeholder Involvement, Gender Mainstreaming and Communication Strategies
11. The Project is implemented by UNDP and executed by the Global Water Partnership (GWP) through GWP-Mediterranean (GWP-Med) in cooperation with UNECE; GWP-Med is responsible for the realization of the Project. The Drin Core Group is the Steering Committee (SC) of the Project.

The Drin Transboundary Diagnostic Analysis, the database and GIS portal

12. The GEF Drin Project within its Component 1: “Consolidating a common knowledge base” carries out a Transboundary Diagnostic Analysis (TDA), in order to identify and assess transboundary basin management issues -including those related to water and other natural resources as well as environmental management- assess the environmental impacts and socio-economic consequences and, identify the immediate and underlying causes of these issues.
13. Six Thematic Reports have been prepared as background for the preparation of the TDA: (i) Biodiversity and Ecosystems; (ii) Pollution; (iii) Institutional and Legal Setting; (iv) Nexus; (v) Socioeconomics and (vi) Hydrology/Hydrogeology. Data and information have been developed and or collected for the preparation of these reports. These **data and information are georeferenced** and stored in a **database** that was created for this cause. A **GIS portal** has been created by the Project as a tool to be used by teams of experts that are not sitting in the same location, for the analysis of the data as part of the TDA development.

The Drin Information Management System

14. One of the concerns for sustainable development in the Drin basin identified in the Drin MoU is the need for “improving access to comprehensive data and adequate information to fully understand the current state of the environment and water resources and the hydrological system (including surface and coastal waters) as well as ecosystems of the Drin Basin” (article 3: i). At the same time, the Drin Riparians have agreed that one of the priority actions to address this concern is the” improvement of information exchange through the establishment of a system for regular exchange of relevant information among competent authorities of each party” (Article 4: c).
15. The development of an Information Management system (hereinafter: IMS) under the GEF Drin Project component 1 (see para 10), has been envisaged to enable the DCG and Project beneficiary

Drin Riparians (from this point forward referred to as “beneficiary Riparians”) to collect, store and share data and information in a consistent way (Project output 3). The aim is for the IMS to be used as a) repository of data that will be collected and produced through the development of the Transboundary Diagnostic Analysis (TDA) and b) a platform to enable joint data collection, storage and exchange, including GIS functions. The IMS will be used by and serve institutions from Albania, North Macedonia, Montenegro and Kosovo; Greece may join as well.

16. The project has already used technical support for the identification of characteristics, services, content, specifications, components etc. of a future full-scale Drin Basin Management Information System (RBMIS), to enable the Riparians initiating decisions and actions regarding the level of exchange of information as well as on the parameters to define the information exchange under an advanced cooperation arrangement in the future. The technical support has defined the themes, database model and feature catalogue, catalogue of domains, standards for data specification and exchange, protocol for data exchange, architecture and cost analyses of the options of the Drin RBMIS.

The Assignment: Technical assistance to the Project Coordination Unit for the development of the Drin GIS portal and Information Management System

17. GWP-Med seeks to hire an International Expert (hereinafter “the Expert”) to support the Project Coordination Unit in the development of the Drin GIS portal and Information Management System (from this point forward referred to as the “Drin GIS/IMS”).

Objective of the assignment

18. The objective of the assignment is to support the Project Coordination Unit (PCU) for the development of the Drin GIS portal to constitute an Information Management System as described in paras 14 and 15.

Requested Services

19. The Expert will:
 - Define the characteristics and the services that the Drin GIS/IMS will provide;
 - Analyse already existing datasets/database and current GIS use and propose changes and adjustments;
 - Provide support in preparing procurement documents -including ToR- for the Drin GIS/IMS;
 - Provide technical support to the Project to oversee the implementation of the ToR, the development and deployment of the Drin GIS/IMS.

Tasks

20. To achieve the aforementioned objective and deliver the requested services the consultant will undertake the following tasks:
21. **TASK 1: Define the characteristics and the services that the Drin GIS/IMS will provide**

The currently identified by the PCU characteristics of the Drin GIS/IMS and the services that this will provide are as follows:

- A web platform that can be expanded in the future in terms of content, services offered and functionality;

- Multiple user access and/or control to the GIS/IMS and its services; different groups of users should have different levels of access (open and/or restricted access; other) and/or control; levels of access and/or control should be able to change for different users groups as per emerging needs and users' demands.
- User-friendly layout (clear & simple) that will allow the user to:
 - Navigate the maps (zoom out/in and scroll);
 - Change the base map (i.e. OpenStreetMap, Google maps, raster maps from internal geodatabase);
 - Select multiple layers;
 - Change order of the layers;
 - Change layer transparency;
 - Queryable layers (access query/filter tool);
 - Identify features;
 - Access metadata;
 - Access legend;
 - Search through the use of appropriate tools (by entering coordinates, names of country/towns);
 - Use measurement tools (measure area by drawing of line, rectangle, circle or by free hand);
 - Use graphic tools (create circle, polygon or write txt on the screen);
 - Export results (GIS files) from the selected section/area and per theme/layer;
 - View and verify files submitted through submission tool (use administration area);
 - Change metadata (administration area);
 - Adding/uploading GIS files that are automatically visualized and available through general user interface (administration area);
 - Adding/uploading datasets that are automatically visualized and available through general user interface;
 - Download datasets.
- The Drin GIS/IMS should have:
 - Uniform, well organized toolbar (i.e. layers, tools);
 - Export on-screen map as picture for printing;
 - Simple submission tool (direct submission of GIS file or by drawing point, circle, polygon, line or free hand per theme);
- Organized storage of structured data with back-up possibilities;
- Quad-lingual support;
- Data analytics (statistics);
- Ability to share datasets to social networks;
- Non-changeable heading with project information (logo) and themes.

The Drin GIS/IMS should have its own dedicated web address. The Expert should assess potential for integrating this in the GEF Drin project website (<http://drincorda.iwlearn.org/gef-supported-drin-project>) and IW-LEARN platform (<http://geonode.iwlearn.org/>).

The Expert will examine the services and characteristics listed above and may propose adjustments and/or identify additional services and characteristics so as the Drin GIS/IMS to be in accordance to the content of paragraphs 14 and 15.

In this respect, the Expert will make a brief assessment of the scope as well as the technical feasibility of the characteristics and services (including those described above and others examined/identified by the Expert). She/he will also do a brief assessment of the financial cost, if

any, vis-à-vis the benefit that the inclusion of these characteristics and services will generate for the users of the Drin GIS/IMS. To perform this brief assessment, the expert will take into consideration the content of this ToR, the results under Task 2 (see below) as well as the Drin Project scope and stated expected results vis-à-vis the development of the Drin Information Management System (see paragraphs 14 and 15 above). The brief assessment will be based on a set of criteria to be developed by the Expert prior to the assessment.

The Expert shall work closely with the PCU and the Project Officer responsible for the development of the Drin GIS/IMS (via Skype) or in person (if necessary) until agreement on the criteria and later on the list of characteristics and services of the Drin GIS/IMS is reached. If meeting(s) in person is required all associated travel costs will be separately covered by the Project.

22. TASK 2: Analyse already existing datasets/database and current GIS use and propose changes and adjustments

Task 2 should be performed in parallel with Task 1.

The Drin GEF Project has developed its own internal system of storage (designated NAS), organization of files (single geodatabase) and use (individual ArcGis licences). Arc GIS online is established and populated for the needs of PCU/consultants and has restricted access.

The Project has systematised all data and related GIS files collected or created during the process of the development of the TDA and its thematic reports per thematic areas (i.e. biodiversity, pollution, water quality, hydrology, general information). An initial attempt was made to create metadata in accordance with INSPIRE and to harmonise the structure of the database and the data and files therein with this of the future Drin RBMIS (see paragraph 16).

The above constitute a database/repository of data and GIS files to be used to for the needs of the Drin GIS/IMS. It is critical -hence the Expert should see to it- that these data and GIS files are available for the general audience immediately after the deployment of the Drin GIS/IMS.

The Expert will be required to:

- Review current set up and tools used for the development of the GIS by the project;
- Inspect/review size, structure and content of the existing Drin GIS database;
- Inspect/review current metadata structure associated with GIS files produced by the project;
- Review existing technical proposals for the development of the Drin RBMIS (see paragraph 16) and propose actions in relation to the Drin database and the Drin GIS/IMS to achieve higher level of harmonization between the Drin GIS/IMS and the Drin RBMIS;
- Propose any changes in the datasets and metadata so these are readily available for use by the Drin GIS/IMS immediately after the latter is deployed; the identified characteristics and services defined under Task 1 should be taken into consideration in this regard.
- Estimate level of effort needed to perform the above and associated costs (to be included in procurement documentation, see next task).

The expert should do the aforementioned taking also into consideration the results of the brief assessment described under Task 1.

23. TASK 3: Define the technical solution for the Drin GIS/IMS

Based on the outputs and the results of Task 1 and Task 2, the Expert shall advise the PCU on the technical solution that should be used for the Drin GIS/IMS; whether this should be/ be based on open source software or not. Detailed yet clear reasoning on the selection of software packages to be used should be given explaining the criteria used for this selection as well as the advantages and disadvantages (technical and financial) of such proposal.

The Expert is expected to revisit and adjust if necessary, the identified characteristics and services of the Drin GIS/IMS as well as the adjustments proposed regarding the organization of the database under Task 1 and Task 2, under the light of the results of Task 3 i.e. the capacities of IT solutions that are available in the market. The Expert may do a market survey to assess technical capacities and cost of IT solutions available in /offered by the market. The Project will advise the Expert about the budget available for the design, development, deployment and operation of the Drin GIS/IMS.

24. TASK 4: Provide support in preparing procurement documents for the Drin GIS/IMS

Based on and using the outputs/results from Task 1, 2 and 3, the Expert will:

- Draft detailed Terms of reference for the design, development and deployment of the Drin GIS/IMS including (but not necessarily limited to):
 - Description of:
 - Project and activity background
 - Data to be managed/exchanged by the Drin Riparians;
 - Characteristics and services that the Drin GIS/IMS will provide;
 - Drin GIS/IMS functionalities;
 - Characteristics of IT solutions;
 - Data integration requirements so existing project data are integrated in the Drin GIS/IMS during the development of the latter;
 - The training program (including: scope, content and duration)-if needed;
 - Objectives
 - Description of Services
 - Tasks (in the appropriate detail)
 - Expected Outputs
 - Deliverables
 - Project implementation schedule with resource allocation (man-days);
 - Quality assurance/control and/or testing (for project management supervision and monitoring purposes) requirements;
 - Required qualification for the potential consultant to make an offer to the services to be procured.
- Follow the procurement process with the aim to answer any potential bidder request for clarification of technical issues;
- Advise on any technical issues that will be needed until the finalization of procurement process.

25. Task 5: Provide technical support to the Project to oversee the implementation of the ToR (see task 4), the development and deployment of the Drin GIS/IMS

The Expert will technically support the PCU to oversee the implementation of the activity to be procured through the implementation of the ToR prepared under Task 4 including reviewing of the Outputs/Deliverables.

In this framework, the Expert will review all Outputs/Deliverables and Reports that the Consultant to be hired will deliver. The Expert will propose comments/recommendations for amendments in the approach, activities, documents and deliverables to:

- enable the Outputs/Deliverables having the best possible quality; the expert shall perform quality assurance/control and/or testing of the outputs and the Drin GIS/IMS in this regard.
- Ensure that the outputs and the Drin GIS/IMS are in accordance to the ToR (to be produced under Task 4) and the Inception Report of the Activity to be procured.

The Expert will provide input in the form of:

- Written assessment of the services provided by the Consultant and the deliverables/outputs/products that the Consultant to be hired will develop.
- Comments to the reports provided by the consultant.
- Guidance to the consultant -as necessary- for the improvement of the quality of the services and deliverables/outputs/products.

Input by the Project Management Unit (PMU)

26. The PCU will provide:

- Full access to the Drin project internal GIS database and GIS related outputs of the Project;
- Available background information (data and data sources) as well as information on their current and future use;
- Reports related to the development of the Drin River Basin Management Plan Information System (RBMIS);
- Template for procurement package including the ToR call for offers.

Contract Price

27. The fee for this assignment is 7,000 USD.

28. This amount includes all other costs, income taxes and any other amount payable or cost that may be required for the completion of the work/service.

29. An advance payment of 30% is planned upon contract signature.

30. All other payments shall be upon reception and acceptance/verification of the deliverables, as laid out in the table below.

Schedule of Activities, Deliverables and Payment

31. The consultancy will commence work on March 2019 and continue until completion but no later than June 2020.

32. The consultancy may be extended if further work is required or unexpected delays occur.

Task	Deliverables	Deadline	Payment
		Upon contract signature	30%

<p>TASK 1: Define the characteristics and the services that the Drin GIS/IMS will provide & TASK 2: Analyse already existing datasets/database and current GIS use and propose changes and adjustments & TASK 3: Define the technical solution for the Drin GIS/IMS</p>	<p>Brief assessment of the scope as well as the technical feasibility of the characteristics and services.</p> <p>Proposal of technical solution for the Drin GIS/IMS</p>	<p>4 weeks after contract signature – 5 April 2019</p>	
<p>TASK 4: Provide support in preparing procurement documents for the Drin GIS/IMS</p>	<p>Procurement package (including ToR) developed and published</p>	<p>2 weeks after completion of Tasks 1-3 – 19 April 2019</p>	<p>10%</p>
<p>Task 5: Provide technical support to the Project to oversee the implementation of the ToR (see task 4), the development and deployment of the Drin GIS/IMS</p>	<p>Review/assessment of the reports and deliverables (respective evidences) of the consultant to be hired for the design, development and operation of the Drin GIS/IMS in the form of Reports and/or comments directly on the consultant’s reports and deliverables (respective evidences). Advice -in the form of emails and reports- regarding the content and quality of products as well as on possible necessary steps and action to be undertaken with the aim to improve these.</p>	<p>Delivery of a critical output by the Consultant to be hired for the implementation of the ToR (see task 4), the development and deployment of the Drin GIS/IMS (to be defined by the PCU)</p> <p>Upon competition of development and deployment of GIS portal and IMS</p>	<p>30 %</p> <p>30 %</p>

33. The payment will be subject to approval of the responsible Project Officer and the Project Coordinator following submission of defined deliverables and performance assessment.

Duration of the Contract

34. The overall duration of the contract will be 18 months.

Location and Language of the Assignment

35. The Expert will work for the completion of this assignment from the location of her/his preference. The language for all documents and reports as well as for all communication is English.

Qualification and Experience

36. Academic Qualifications/Education

Bachelor's in computer science, geographical information systems, geography or related discipline.

37. Required Experience

The Consultant is required to have:

- At least 7 years' of documented experience with GIS software, portal configuration, development and operation;
- Working knowledge in configuring and administering geodatabase architecture on platforms;
- Experience configuring and securing relational databases, Web Maps and Web Apps;
- Experience with geospatial integration projects;
- Previous experience installing and administering GIS software;
- Experience with troubleshooting of GIS services.

38. Key Competencies

The Consultant is required to have:

- Excellent written and spoken English.

39. Evaluation Procedure

Applications will be examined by an evaluation committee as follows:

- A) An Evaluation Committee will be established to examine the submitted documents (see call for offers) received in relation to the qualifications and experience listed in the TORs. Applications which do not meet the required qualifications and experience will be excluded from further evaluation. The remaining applications will be further evaluated by the Evaluation Committee, concluding with a short list.
- B) The candidate to be selected will be the one evaluated and determined as:
- Responsive to the procedure described herein;
 - Compliant to the ToR of the post;
 - Having received the highest score out of a pre-determined set of weighted criteria (see below)

Criteria - max. 100 points:

- Academic Qualifications/Education (**max points: 10**)
- Required Work Experience as indicated under the ToR section entitled "Qualifications and Experience"
 - Minimum 7 years of professional experience in GIS software, portal configuration, development and operation (**Max points: 30, Minimum 20 points and 1 point for each additional year of experience**).
 - Working knowledge in configuring and administering geodatabase architecture on platforms (**Max points: 15**)
 - Experience in configuring and securing relational databases, Web Maps and Web Apps (**Max points: 15**)
 - Experience with geospatial integration projects (**Max points: 10**)

- Previous experience installing and administering GIS software and troubleshooting of GIS services **(Max points: 10)**
- Key competencies as indicated under the ToR section entitled “Qualifications and Experience” **(Max points: 10)**

The score of each one of the offers received will be calculated with the following simple formula: **$Sx=Cx/Ex$** , where:

- **Cx** is the amount of the Financial Offer
- **Ex** is the total sum of the evaluation criteria points
- **Sx** is the final score round it up to the first digit.