



Terms of reference:

Technical support for development of Information Management System (IMS)
-phase 1

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"

12 October 2016

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 countries 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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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, The Former Yugoslav Republic of Macedonia, Greece, Kosovo* and Montenegro. This was the outcome of the Drin Dialogue supported by the Swedish Environmental Protection Agency and coordinated by UNECE and Global Water Partnership Mediterranean (GWP-Med).
- 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 in an area that is physically, culturally and
 historically interconnected.
- 3. 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".

The Drin Coordinated Action

- 4. While the process is on-going, a number of activities have already been implemented under the Drin Coordinated Action for the implementation of the Drin MoU.
- 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.

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.

6. The Drin Action Plan (DAP) was prepared to facilitate implementation of the Drin MoU and operationalize the Drin Coordinated Action. This is considered as an 'evolving document' and 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 DAP. The DAP is already being implemented using resources made available by various donors active in the basin.

The GEF Drin Project

- 7. The Global Environment Facility¹ supported Full Size Project "Enabling transboundary cooperation and integrated water resources management in the extended Drin River Basin" (GEF Drin Project) is aligned in content, aims and objectives with the DAP and the activities under the Drin Coordinated Action.
- 8. 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, The Former Yugoslav Republic of Macedonia and Montenegro are the Project beneficiaries. The same goal will be fostered by the GEF supported Medium Size Project "Enabling transboundary cooperation and integrated water resources management in the White Drin and the extended Drin Basin". Kosovo is the beneficiary of that Project.
- 9. The GEF Drin project is structured around five components:
 - Component 1: Consolidating a common knowledge base
 - Component 2: Building the foundation for multi-country cooperation
 - Component 3: Institutional strengthening for Integrated River Basin Management (IRBM)
 - Component 4: Demonstration of technologies and practices for IWRM and ecosystem management
 - Component 5: Stakeholder Involvement, Gender Mainstreaming and Communication Strategies
- 10. The Project is implemented by 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 is responsible for the realization of the Project. The Drin Core Group is the Steering Committee (SC) of the Project.
- 11. It is managed by a Project Coordination Unit (PCU), based in Tirana, Albania; staff is stationed also in Podgorica, Montenegro; Ohrid, The Former Yugoslav Republic of Macedonia; Pristina, Kosovo; and Athens, Greece. The duration of the two Projects is four years.

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¹ www.thegef.org

Monitoring and Information Management System

Development of Information Management System (IMS)

- 12. 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, 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).
- 13. 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. This Output is fully in compliance with beneficiary Riparians' needs expressed in the Drin MoU (see para 13) and Drin project (see para 8).
- 14. The IMS will be used by and serve institutions from Albania, The Former Yugoslav Republic of Macedonia, Montenegro and Kosovo; Greece may join as well.
- 15. The IMS should be developed compliant with the following Characteristics and Requirements:
 - Take into account the specific rules, regulation and characteristics of each country in terms of water management data² collection, exchange and processing;
 - Take into account existing infrastructure for data management within the beneficiary Riparians;
 - Should enable data to be stored and made available to users;
 - Be able to combine data from different sources and present them in a consistent way, including through spatial visualization (Geographic Information System -GIS);
 - To be able to perform targeted analytical operations and classification;
 - To allow extraction of information (including systematized datasets) for use in a software/analytical environment other than the IMS;
 - To conform to the respective existing data standards and specifications (e.g. International Organization for Standardization-ISO, Infrastructure for Spatial Information in the European Community -INSPIRE, The Water Information System for Europe -WISE, etc.);
 - To conform (to the possible extent) to the reporting guidelines that the beneficiary Riparians have to follow in the framework of other national and international reporting obligations (e.g. European Water Framework Directive -WFD);
 - To minimize the administrative burden on beneficiary Riparians to report;

² For the purpose of this assignment and as a guidance to the consultant "water management data" is defined as "all data needed for development River basin management plans in accordance with Annex VII of Water Framework Directive"

- To provide channels for data exchange among the beneficiary Riparians in most efficient way (e.g. by using existing repositories and automation processes, standardization, protocols etc.);
- To secure interoperability with existing data management systems and third party tools;
- To be "user friendly" easy to use;
- To be publicly available and easily accessible, free of charge through a web based application;
- To be upgradable and adhere to modular structure and able to accommodate future needs.
- 16. All institutions and organizations in the beneficiary Riparians, that will be using the IMS, start from different positions in terms of water resources and related water management data collection and administration; these positions may have been driven by political, historical and geographical conditions. Thus, it is expected that in order for the IMS to meet the Characteristics and Requirements mentioned above, certain conditions must be in place prior to the development of IT infrastructure and tools. Among these, the most important ones are the following:
 - The beneficiary Riparians agree and are willing to exchange water management data;
 - Beneficiary Riparians agree regarding the: data to be exchanged; characteristics of data to be exchanged; frequency of exchange; format and units to use; on the modules that the IMS will have and will be developed; ownership and management of the joint IMS etc.
- 17. The DCG and its EWGs will play a crucial role in facilitating the related discussion among the beneficiary Riparians and final agreement on the above.
- 18. Therefore, the development of the IMS should be seen as a tailored process that will be implemented in a number of phases facilitating and enabling the development of efficient data exchange mechanisms that will be used by the beneficiary Riparians.
- 19. To that extent, the first phase of the development of the IMS should focus on activities to secure that the necessary Characteristics and Requirements listed above will be fully met before engaging further with the IMS development.
- 20. The Drin Project is now seeking technical support for the development of Information Management System (IMS)-phase 1. More detailed information regarding this support is provided bellow.

Aim and Objectives

- 21. Aim of this assignment is to enable the development of the IMS.
- 22. The objective is to prepare, in the framework of the implementation of the Drin MoU, the Terms of Reference that will define conditions, parameters and specifications for the: i) collection, storage and exchange of data among beneficiary Riparians; ii) development as well as the operationalization of the IMS.

Approach

- 23. In order to achieve its objectives, the Consultant will:
 - Identify and assess (hereafter "assess" should be understood as: assess in terms of relevance and/or value regarding the IMS development) the state of basin and water data³ management in all institutions/bodies that generate and/or use for their work data (as defined in this ToR) including but not limited to:
 - a) Identification and assessment of structure and properties of existing data sets as well as ways and systems of respective data storage, processing and publishing;
 - b) Identification and assessment of ways and systems for exchange and communication of data and information (being the result of processing of data) among institutions in each of the beneficiary Riparians as well as among beneficiary Riparians;
 - c) Identification and assessment of data and information (being the result of processing of data) reporting systems in each of the beneficiary Riparians;
 - d) Identification and assessment of the reporting obligations of each country at national level as well as under international conventions and agreements;
 - e) Identification and assessment of compliance of the above with existing widely accepted standards;
 - Identify beneficiary Riparians' expectations from the IMS development and use;
 - Assess data produced through the development of TDA in the framework of the GEF Drin project;
 - Define the scientific fields and domains for which the beneficiary Riparians should exchange water data to meet the provisions of the Drin MoU for the sustainable management of the Drin Basin (exchange IMS theme);
 - Identify and assess future needs of the beneficiary Riparians in terms of basin and water data management as a result of the implementation of existing legal requirements and strategic policy papers;
 - Define and propose the basin and water data-sets (exchange IMS datasets) -under the scientific fields and domains identified above- that the beneficiary Riparians should exchange to meet the provisions of the Drin MoU for the sustainable management of the Drin Basin and IMS Characteristics and Requirements.
 - Define exchange IMS datasets (parameters, units, frequency of exchange etc.) as well
 as data exchange language and characteristics (national input sources, automatic or
 manual feed, frequency of exchange etc.);
 - Define and describe the architecture of the IMS that will match the needs and the proposals that will be formulated by the consultants as per the paragraphs above;
 - Prepare appropriate supporting documentation that will be provided to the beneficiary Riparians and enable them to assess different options and reach to a decision with regard to the characteristics of the exchange IMS datasets and the architecture of the IMS.
- 24. The development of supporting documentation (see last bullet-point in the para above) shall undergo a participatory process. The proposed solutions should be presented and discussed in a technical workshop that will be organized in each one of the beneficiary Riparians. The Drin Project Coordination Unit (PCU) will assist and advise the consultant in coordination with the responsible national institutions.

³ Basin and water data = basin management and water management data = data = water management data (see para 15)

- 25. The outputs of this assignment as well as the related reports will be distributed for comments to the Expert Working Groups on the Drin Core Group (particularly Monitoring and Information exchange EWG). The final outputs and reports incorporating and addressing the comments provided will be considered by the DCG for adoption. The PCU will facilitate both processes.
- 26. The reports should be proof read and edited; an extensive non-technical summary will be translated in the project beneficiary Riparians' languages.

Scope of work

- 27. The consultant will identify the existing state regarding basin and water data management practises in the beneficiary Riparians ("present state"). The consultant will also identify the basin and water data management practices necessary to meet the objectives of the assignment ("desired state"). A sound proposal on how to achieve the "desired state" supported with appropriate and adequate technical documentation should be prepared.
- 28. In order to be able to better understand the situation in the beneficiary Riparians/institutions regarding basin and water data management, the consultant will communicate with the institutions indicated by the PCU (see Annex I) and draw information using appropriate questionnaires through email and face-to-face communication. At least on mission per country should be done by the consultant to meet responsible institutions. The missions will be facilitated and organized by the PCU. Additional institutions and organizations may be communicated via electronic means.
- 29. While assessing the "present state" the consultant will not be limited only to analysing available basin and water data-sets but will also analyse other parameters that are of importance for basin and water data management in each of the beneficiary Riparians (as described in para 23; 1). While defining "desired state" the consultant will not be limited to assessing the beneficiary Riparians' expectations/needs but also will take into account the: (i) provisions of the Drin MoU; (ii) international standards and requirements related to data management and; (iii) international reporting obligations of the beneficiary Riparians.
- 30. The proposal of the consultant on how to achieve the "desired state" should be detailed enough and appropriately supported by technical documentation. The latter should describe in detail specifications that will allow decision making process and the development of the IMS. In addition, an appropriate economic analysis of the actions proposed and action planincluding a timeline- should be prepared with regard to the development of the IMS.
- 31. More detailed description of the work required is provided in sections below.

Description of tasks:

Task 1) Analysis of the "present state" and definition of "desired state" for basin and water data management in each of the beneficiary Riparians

- 32. Under this task the consultant will analyse (on the basis of the approach described in para 23/take into consideration information included in para 23):
 - a. The current state regarding basin and water data management in beneficiary Riparians. The analysis should cover (the list is not exhaustive): (i) scientific fields and domains for

which information and data are collected; (ii) parameters under each scientific field and domain as well as related units used, frequency of collection of information and data, collection/monitoring/analysis protocols used; (iii) metadata (structural and descriptive) and other information stored within each dataset; (iv) institutions and organizations collecting and storing information and data; (v) accreditation of aforementioned institutions and organisations; (v) efficiency of information exchange and reporting among institutions, including characteristics of data that are currently reported as part of the international obligations of each beneficiary Riparian;

- b. Current status of use of GIS and Relation Management Database Systems (RMDBS);
- c. Existing data management infrastructure and capacities;
- d. Data to be collected and produced through the development of TDA in the framework of the GEF Drin project as they will be first data to enter IMS;
- e. Needs of beneficiary Riparians in regard to information and data exchange under the Drin MoU;
- f. Requirements/expectations of the beneficiary Riparians regarding services and products to be supported by/from the IMS;
- g. Requirements of information and data reporting as well as standards used, under the WFD, INSPIRE or any other relevant supra-national legal framework and/or mechanism in which the beneficiary Riparians adheres to or participates.

Outputs:

- 33. Inception report.
- 34. Reports from the missions in each of the beneficiary Riparians.
- 35. Detailed analysis report regarding (i) current state of basin and water data management in each beneficiary Riparian; (ii) desired state regarding basin and water data management taking into consideration among others the needs of beneficiary Riparians.

Task 2: Determine IMS thematic datasets and set of standards for exchanging basin and water management data

- 36. Based on results of task 1, the consultant will define and propose:
 - a. IMS themes and sub-themes to be incorporated into IMS (geodatabase). The consultant will group thematically related data, identify, describe (including relevance to reporting obligations) and prioritize against: i) availability; ii) accessibility; iii) reporting requirements and iv) beneficiary Riparians needs;
 - b. Datasets and their types (e.g. raster, feature, object, tables) to be used, on the basis of the themes identified;
 - c. Categorized list of all classes (i.e feature classes) that will be assessed against identified priority datasets.
 - d. Relationships between classes with short description;
 - e. The feature catalogue that includes at least: (1) the name and feature types, (2) properties' names and definitions including feature attributes, geometry (shapes and specifications, datum, map projection, etc.), temporality (dimensions and specifications, datum, units, resolutions, etc.), operations, and roles, (3) descriptions of attribute values and domains, relationships, constraints.
 - f. Feature layers with description (i.e. symbology, labels, scale range, joins, relates) of different feature classes;
 - g. Appropriate metadata profile that is in compliance with identified standards;
 - h. IMS data model description with appropriate schematic representation.

- 37. On the basis of above and task 1 results, the Consultant will additionally define and propose protocols that will be proposed for basin and water data exchange among Beneficiary Riparians (IMS data exchange protocols). Protocols should include at least the following information:
 - a. IMS datasets to be exchanged including detailed specification templates (parameters, format, units etc.) and,
 - b. Data exchange protocols characteristics (e.g. national input sources, automatic or manual feed, integration with IMS, frequency of exchange etc.)

Outputs:

- 38. List and specifications of IMS themes, data-sets objects and layers.
- 39. The feature catalogue.
- 40. IMS data model.
- 41. Standards to be used within IMS.
- 42. IMS data exchange protocols.
- 43. Report from the IMS data exchange protocols meeting(s) with the beneficiary Riparians.
- 44. Final outputs of this task will be reviewed by EWG for on Information and Exchange and validated by DCG.

Task 3: Development of the IMS Architecture

- 45. Based on outcomes and outputs of Tasks 1 & 2, the consultant will:
 - a. Design the system architecture, i.e. the conceptual model that defines the structure, behavior, and aspects of IMS, that will comprise system components, the systems developed, that will work together to implement the overall system.
 - b. Define the characteristics of the IMS and the conditions for its operation as well as the services and products that it should support and be able to produce.
 - c. Identify and assess existing -in the beneficiary Riparians or elsewhere-software/hardware/system that can serve an IMS with the characteristics and conditions defined in para a. above. During the assessment, the consultant will take into consideration: i) existing international practices regarding the development of similar IMS and; ii) relevant national/regional framework and conditions (including: existing infrastructure, budgetary restrictions, maintenance costs, future infrastructure needs etc.).
 - d. Develop, based on the above (paras a and b) a detailed proposal regarding the **IMS** architecture; this shall describe: hardware and software components, externally visible properties of software elements, and relationships etc. The final proposal regarding the IMS architecture should be justified against other evaluated possibilities.
 - e. The system architecture to be prepared should be this of an operational IMS; the following (the list is not exhaustive) should be described: how the IMS system will be developed, produced, deployed, used, maintained and refined to achieve the user's and stakeholder's operational needs.

Outputs:

- 46. Specifications of the IMS.
- 47. Draft proposal regarding the architecture of the IMS.

Task 4: Develop the IMS Implementation plan

- 48. The Implementation plan should assist the Drin GEF Project and beneficiary Riparians to develop the IMS.
- 49. The Implementation plan should have sufficient level of details to enable a) the Drin GEF Project and beneficiary Riparians to fully understand, properly plan and manage all aspects of the IMS development, operation and maintenance; and b) future consultants develop, operate and maintain the IMS.
- 50. The Implementation plan should cover, at least, the following aspects:
 - a) IMS development managerial aspects including:
 - Project (IMS development) overview, purpose, scope and objective, assessment of benefits, project organization (roles and responsibilities), assumptions, constrains and potential risks;
 - Phases in development, components to be developed and respective schedule;
 - Proposal for a training program (including: scope, content and duration);
 - Assessment of infrastructure (upgrade) needs for each of the beneficiary Riparian as well as for the IMS host institutions.
 - b) Technical process planning including: detailed specifications and requirements for each of the (to be developed) IMS components; requirements for quality assurance/control and/or testing (for project management supervision and monitoring purposes).
- 51. Based on the above, detailed cost estimation for the development of the IMS.

Outputs:

- 52. Implementation plan for the development of the IMS.
- 53. Report from the Implementation plan meeting(s) with the beneficiary Riparians.

Task 5: Develop ToR for the development of the IMS

54. Using the outcomes and outputs of tasks 1-4, the Consultant will prepare ToR for the development of the IMS at an appropriate level of detail so as to be ready to be used by the Project for a tender for all required work/services. The consultant will consider all the aspects, concerns and solutions found during previous tasks while developing the ToR, including potential to follow a phased approach for the development of the IMS.

Output:

55. Terms of reference for the phased development of the IMS.

SCHEDULE OF ACTIVITIES AND MILESTONES

Task	Deliverables	Deadline
Task 1: Analysis of the "present state" and definition of "desired state" for basin and water data	 Inception Report Reports from the missions in each of the beneficiary Riparians 	January 2017

management in each of the beneficiary Riparians	Detailed analysis report - water data management	
Task 2: Determine IMS thematic datasets and set of standards for exchanging basin and water management data	 List and specifications of IMS themes, data-sets objects and layers The feature catalogue IMS data model Standards to be used within IMS IMS data exchange protocols Report from the IMS data exchange protocols meeting(s) with the beneficiary Riparians 	March 2017
Task 3: IMS Architecture - Operational concept for next phase(s) of IMS development	 Specification of IMS tools and services Draft proposal - architecture of the IMS system 	April 2017
Task 4: Develop the IMS Implementation plan	 Implementation plan for development of IMS Report from the Implementation plan meeting(s) with the beneficiary Riparians 	May 2017
Task 5: Develop ToR for the development of the IMS	Terms of reference (s) for a phased design, development and implementation of IMS	June 2017

Contract Price

- 56. The maximum available budget for this contract is 65.000 USD, excluding VAT.
- 57. 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.

Duration of the Contract

58. The overall duration of the contract will be maximum 7 months.

Schedule of Payment

- 59. An advance payment of 30% of the offered price is planned upon contract signature with the selected bidder.
- 60. All other payments shall be upon reception and acceptance/verification of the deliverables, as laid out in the table below.

Deliverable	Verification	Payment	Scheduled
Contract signing		Advance payment (30%)	November 2016

Inception Report	Inception Report	Tranche 1 (15%)	Jan 2017
Detailed Analysis	Accepted by Project	Tranche I (15%)	Jan 2017
Report	Manager		
IMS Architecture -	Accepted by DCG Project		
Operational Concept	Manager	Tranche 2 (15%)	April 2017
for IMS			
Implementation Plan	Accepted by DCG Project		
for IMS	Manager	Tranche 3 – Final	luna 2017
ToR for IMS	Accepted by DCG Project	Payment (40%)	June 2017
Implementation	Manager		

Qualification Requirements

- 61. The Consultant (a company) shall have experience in developing and managing complex projects in the area of geographical informational systems (GIS) and/or information management systems, water resources / watershed management. A record of successfully implemented projects of this kind in the last 10 years with minimum 1 project implemented internationally is required.
- 62. An **interdisciplinary team** of skilled experts with previous experience in IT and data/information management projects is required. The team shall possess excellent relevant technical and drafting skills. Further, the team of experts has to demonstrate ability to cooperate with local/national organizations and institutions in Riparians responsible for data collection and management. In this regard, the team has to demonstrate fluency in English and one of the languages of the Riparians of focus or any other that guarantees full understanding of national legislation, and communication.
- 63. Specific experience in projects and activities in the Riparians will be considered as asset. National and local expertise is welcome.
- 64. The areas of expertise and experience that the team of experts is expected to cover so as to carry out the tasks described above, is listed below (NOTE: there is no limitation on the number of experts per area of expertise). Failure to provide relevant expertise is considered a ground for disqualification.
 - Good knowledge of Water resources management and monitoring systems including in the areas of hydrology, hydrogeology, pollution
 - Good knowledge of Water Framework Directive and water management data reporting
 - Geographical Information systems;
 - Working experience in software and hardware that should be used to carry out the assignment including all of the following or that combination, that will make the implementation of the tasks possible:
 - o ASP.NET, MVC
 - o ArcGIS, GRASS, Quantum GIS, including experience with OpenLayers, GeoServer
 - o Oracle databases, SQL
 - o MS SQL, Oracle or PostgreSQ
 - JavaSE/EE ili .NET

- o international data standards
- Geodetics (geometric transformations, projections, coordinate systems).
- Working experience in analyzing spatial data, statistical analysis, designing spatial informational systems.

NOTES:

Interested Parties should submit an offer including the following:

- Qualifications and Approach Note (three pages maximum): explaining the synthesis of the team as well as its qualifications and experience in relation to the requested services. The Note should indicate (in a Tasks Table) the experts that will be used for each of the tasks listed above and provide a break-down of planned man-days per task and expert under each task.
- CVs of the team members.
- List of implemented projects to be submitted along with contact details for reference checking purposes (please indicate the e-mail addresses or fax numbers of contact persons).
- Financial Offer

Annex I: List of institutions/stakeholders that generate and/or use water data for their work

the following list is not exhaustive- e.g.:

- Environment Protection Agencies and/or Administration, of all beneficiary Riparians.
- Regulatory Water Agencies, of all beneficiary Riparians.
- Geological institutes/services of all beneficiary Riparians.
- Line Ministries which have responsibilities in the water and/or environmental sector of all beneficiary Riparians.
- Hydro-met services of all beneficiary Riparians.;
- Ohrid Hydro-biological Institute;
- Marine institutes, of all beneficiary Riparians.
- Protected areas authorities (Ohrid, Prespa and Skadar Lake);
- Nature Conservation Institutes;
- Hydro-Power Generation operators;
- Scientific Institutions / Academia/Universities;
- National Statistical Offices/Agencies;
- Donor Organizations and Implementing Agencies (GIZ KfW, UNDP, SECO, SDC, WB, EU, UNECE, SIDA... etc.);
- Water and wastewater utility companies, and water regulatory agencies
- Waste management companies;
- Municipalities (municipal development plans, and municipal urban plans).