



Funded by
the European Union

EU4Environment – Water Resources and Environmental Data

TERMS OF REFERENCES FOR LOCAL CONTRACTOR

DEVELOPMENT OF A RIVER BASIN MANAGEMENT PLAN FOR NORTHERN BASIN IN ARMENIA

SEPTEMBRE 2022

1. Financing

European Union (ENI/2021/424-550)

Co-financing by Austria (Austrian Development Agency) and France (Artois Picardy Water Agency)

2. Procedure

Simplified procedure according to EU PRAG¹

3. Contracting Authority

International Office for Water (OiEau) - France

4. Nature of contract

Service contract

5. Time period of implementation

November 2022 – May 2024

6. Contract amount (optional)

Max. amount: 65 000 EUR

¹ Practical Guide to Contract Procedures for EU External Actions

7. Background information

I. Background and Objectives

The Programme “EU4Environment – Water resources and Environmental data” (hereinafter - the Programme) aims to operationalise several key mechanisms to preserve natural resources, enabling countries’ green growth in line with the European Green Deal and a post-COVID-19 green recovery. This will contribute towards longer-term environmental, climatic, and socio-economic resilience, and improved human health and wellbeing, as well as the achievement of the Sustainable Development Goals (SDGs).

The Programme’s specific objectives are:

- Specific Objective 1 “Water resources management”: Water policies and practices support more sustainable use of freshwater resources and help reduce the adverse impacts of human activities on water quality and ecosystems.
- Specific Objective 2 “Environmental statistics and open data”: The use of sound environmental statistics by the partner countries is extended and improved, and better availability of policy-relevant data to decision-makers and citizens is ensured.

The Programme, co-financed by the European Union, is implemented in close cooperation and coordination with the Implementing Partners: three Member State agencies: Umweltbundesamt GmbH (also called “UBA” or “Environment Agency Austria”), Austrian Development Agency (ADA) and International Office for Water (OIEau, France) as well as two international organisations (OECD and UNECE).

II. Scope of work

The main objective of this assignment is to produce the elements for the draft of the RBMP and its implementation dashboard for the Northern river basin in Armenia (7185 km², see map in annex 1), in line with the Water Framework Directive (WFD) principles.

This information production will be based on available data, existing reports and literature, meetings with stakeholders, data formatting and exploitation, brainstorming, experts’ judgement, etc. No new field survey neither additional census is asked at these first steps of the planning process.

The breakdown of the main outputs will be as follow:

- Characteristics of the River Basin (including delineation of surface and groundwater bodies)
- Pressure and impact assessment of human activity,
- Protected areas identification,
- Environmental objectives,
- Economic analysis,
- Water balances,
- Programme of measures,
- Draft RBMP including the proposed dashboard to follow its implementation.

The outputs will contribute to feed different meetings and consultations with technical experts, stakeholders etc., which will be implemented during this assignment.

The assignment will be accompanied by different meetings with main interested parties (expert groups for technical exchanges on the drafting of the outputs, National Policy Dialog (NPD), stakeholder consultation

meeting for active involvement and public information, in line with the communication and stakeholder involvement strategy defined with the project support.

Comments received during those meetings will be considered to review the report and tracks of those contributions will be annexed to the produced deliverables. It is important to notice that the planning process will be co-constructed with local partners and, of course, with the important input from this assignment. The contractor will have to participate (not to organise) at most of the meetings at their own expenses to present and take onto account opinions and views expressed.

Meetings with expert groups could take the form of trainings. These trainings will be set up by the **project team** (OiEau, UBA and the programme representative in Armenia) in order to improve national capacity building. The contractor will have to participate at the trainings to present methodologies and results and to gather methodological guidance from the project team.

The participative process in RBMP preparation is an important aspect of the assignment. At last, results will be used to elaborate the Draft RBMP. The final RBMP will be submitted to the Government for adoption.

The consultant will propose methodologies inspired by the European guidance documents developed in the frame of the Common Implementation Strategy².

In particular for this assignment, the following CIS Documents are to be considered:

- N° 1 – Economics,
- N° 2 – Identification of Water Bodies
- N° 3 - Analysis of Pressures and Impacts
- N° 4 – Identification and Designation of Heavily Modified and Artificial Water Bodies
- N° 8 - Public Participation in Relation to the Water Framework Directive
- N° 11 - Planning Processes
- N° 34 - Water Balances Guidance

Specific attention will also be paid to the existing guidance documents produced within the previous European Union Water Initiative + East project (2016-2021) (EUWI+)³.

At last, the project team will provide methodological guidance and validation in order to support elaborating responses adapted to local context for the concrete implementation of WFD principles.

The traceability of data used has to be ensured and specific works will target data management and map production.

At least 2 consultation events at sub-basin level are foreseen with minimum 2 plenary meetings to share the initial characterisation and the draft Programme of Measures (PoM) and draft RBMP. Preliminary preparatory meetings in smaller groups will help to identify spokespersons per group and anticipate

² See http://ec.europa.eu/environment/water/water-framework/facts_figures/guidance_docs_en.htm

³ <https://euwipluseast.eu/en/component/k2/itemlist/filter?array1%5B%5D=1-+Armenia&array3%5B%5D=3-+Guidance+Documents&moduleId=595&itemId=397&cdb8d26cf6403ee70a3ec6c08c42e084=1>

conflicts. These consultations will be organized by the **Programme**. The contractor will have to participate to the meetings at their own expenses.

Stakeholder groups identified so far: local authorities in the river basin district, irrigation sector (Water Users Associations, Water Intakes Companies), hydropower sector, Northern Basin Management Organisation (BMOs), mining sector, representatives of small farmers, representatives of fish farms industries, users/ investors in building of reservoirs, local NGOs.

III. Deliverables & format

Each RBMP chapter will be subject of a specific report (i.e. 9 deliverables incl. 2 thematic summaries and 1 final draft RBMP with its implementation dashboard).

All the documents consulted, data and information collected, interviews' records will be transmitted in their original forms (paper, files) and their processed forms (GIS layers, database, Excel, etc).

Reports will be transmitted in digital form which can be corrected. Priority will be focused on illustrations and straightforward style.

GIS layers will be provided in Esri format (.shp) and at the closest possible of scale 1:50,000.

Maps will be produced and delivered in QGIS format and as TIF file (300 dpi), based on a template provided to the contractor by the Project Team. They will constitute an atlas at A4 format.

Maps will include only layers and dataset described into the metadata catalogue and having raw data available on FTP.

Therefore, the **deliverables** for the Northern Basin will consist of:

A data management report including:

- - All data sets used will be described (metadata) and stored in the metadata catalogue. Plausibility checks for data validation will be performed and documented in a short note (Methodology will be defined during a training session with the consultant).
- ***A metadata catalogue*** will describe data used in the RBMP and their availability. The specifications in annex 3 are mandatorily to be applied for datasets and for GIS layers production. The framework provided in annex 4 will be used for metadata description (in English and Armenian language). A user manual of the catalogue is provided in annex 5.
- ***An atlas*** will be produced from the priority list of maps. The content of the atlas will depend upon i) the availability and reliability of data and GIS layers produced by national institutions and ii) prioritization by the national focal points to be agreed with the national representative. The atlas will be delivered as a set of QGIS files and their exported TIF files (300 dpi) presenting the maps based on the template provided by the contracting authority. All data and information collected will be provided in their original forms (paper, files) and their processed forms (GIS layers, data base, Excel, etc). A very preliminary indicative list is presented in annex 2.

The draft RBMP itself includes the following aspects:

A proposed detailed table of contents is shown below, to give an idea of the minimum information required for each section of the outline (subject to data and information availability).

DRAFT TABLE OF CONTENTS FOR NORTHERN RBMP

Executive summary

Introduction

1 LEGAL AND INSTITUTIONAL FRAMEWORK

2 CHARACTERISATION OF THE RIVER BASIN DISTRICT

2.1 Natural Conditions

2.1.1 Location and Geographic Overview

2.1.2 Climate

2.1.3 Geology and hydrogeology

2.1.4 Hydrography

2.1.5 Ecosystems

2.1.6 Natural disaster zones, including landslide areas

2.2 Water Resources and Reserves in the RBD

2.2.1 Usable water resources

2.2.2 Strategic water resources

2.2.3 National water reserve

2.3 Hydrological characteristics

2.3.1 Surface Water and water bodies delineated

2.3.1.1 Identification of Ecoregions and Typology of surface water

2.3.1.2 Definition of type-specific reference sites

2.3.1.3 Analysis of Main Components and Calculation of Water Balance

2.3.1.4 Estimation of River's Ecological Flow

2.3.2 Groundwater and water bodies delineated

2.4 Population and Demography

3 SIGNIFICANT PRESSURES POSSIBLE IMPACTS ON WATER BODIES STATUS

3.1 Drivers

3.1.1 Agriculture

3.1.2 Fish Farming

3.1.3 Hydropower, including assessment and analysis of hydropower potential and capacity of rivers

3.1.5 Industry

3.1.6 Tourism

3.1.7 Solid waste landfills

3.1.8 Transport

3.1.9 Future Infrastructure Development

3.2 Pressures and Impact

3.2.1 Point Sources of Pollution

3.2.2 Diffuse Sources of Pollution

3.2.3 Quantitative Pressures: Water Abstraction and Services

4 PROTECTED AREAS

4.1 Drinking water catchment areas

4.2 Specially protected areas of nature

4.3 Zones for water ecosystem sanitary protection, flow formation, groundwater resources protection, water protection, ecotone and inalienable zones

4.4 Areas potentially vulnerable to Nitrates

5 MONITORING

5.1 Existing Monitoring Networks (Surface water and groundwater)

5.2 Assessment of Surface Water Bodies status

5.3 Assessment of Groundwater Bodies status

5.4 Monitoring improvement

5.4.1 Monitoring Improvement - Surface water

5.4.2 Monitoring Improvement - Groundwater

5.5 Assessment of Climate Change Impacts on Water Resources

6 RISK ASSESSMENT AND ENVIRONMENTAL OBJECTIVES

6.1 Risk assessment indicators and criteria

6.2 Surface water risk assessment

6.3 Groundwater risk assessment

6.4 Environmental objectives for surface and groundwater bodies

6.5 Protected areas objectives

7 ASSESSMENT AND ANALYSIS OF WATER RESOURCES SUPPLY AND DEMAND

7.1 Water supply assessment according to sources

7.1.1 Surface water resources

7.1.2 Groundwater resources

7.2 Water demand assessment according to sources and water use types

7.2.1 Surface water resources

7.2.2 Groundwater resources

7.3 Analysis of water supply and demand dynamics and forecast scenarios

7.4 Summary of the water supply and demand assessment

8 ECONOMIC ANALYSIS

8.1 Economic analysis of water uses for different sectors

8.2 Analysis of application of the principle of recovery of the costs and water services

8.3 Water use forecasts and costs

9 PROGRAMME OF MEASURES

9.1 Methodology for programme of measures and cost-effectiveness analysis

9.2 Basic measures

9.3 Supplementary measures

9.4. List of prohibited or limited activity types in the territory

9.5 Preliminary cost estimates

10 SUMMARY OF THE PUBLIC CONSULTATIONS

10.1 First Public Consultation

10.2 Second Public Consultation

10.3 Conclusion on two Public Consultations

References

Bibliography

Glossary

Annex

IV. Global coordination

Meetings & trainings

Trainings intended to expert groups will be organized to cover the following topics: Waterbodies delineation (surface water and groundwater), pressures analysis and protected areas designation, economic analysis, risk assessment, environmental objectives, programme of measures. These technical trainings will concern limited audience (around 10 persons) in which the local consultant will be supported by international experts to share methodologies and results with collaborating interested parties. If needed, some of those trainings could be organized online.

Phase	Meeting target
Delineation of water bodies and characterisation of river basin	<i>Experts group</i>
Pressures and impact of human activities on water resources	<i>Experts group</i>
Risk assessment	<i>Basin stakeholders</i>
Identification and mapping of protected areas	<i>Experts group</i>
Economic analysis part 1	<i>Experts group</i>
Assessment of water supply and demand	<i>Experts group</i>
First thematic summary	<i>Stakeholders consultation</i>
Objectives	<i>Experts group</i> <i>Basin stakeholders</i>
Economic analysis part 2	<i>Experts group</i>
Programme of measures	<i>Experts group</i>
RBMP (draft)	<i>Basin stakeholders</i>
Second thematic summary	<i>Stakeholders consultation</i>

For each meeting, technical synthesis and oral presentations will be produced by the contractor in national and English language. It represents about 10 meetings in the Capital or in the River Basin (5 experts groups/trainings, 2 main basin stakeholders' consultations and National Policy Dialogue (NPD)).

Previous products of interest

Before this assignment, important work took already place on the Akhuryan, Hrazdan and Sevan River Basin Districts and should be used to build upon.

The list and links of available documents produced during the previous EUWI+ project are presented below:

Document Name	Theme	Type of document
<u>Armenia – Study on groundwater resources (Arm)</u>	3- Water Monitoring	2- Technical Reports
<u>Armenia – Study on groundwater resources (Eng)</u>	3- Water Monitoring	2- Technical Reports
<u>Armenia : Hydromorphological assessment report 2019 (Eng)</u>	3- Water Monitoring	2- Technical Reports
<u>Armenia : SURFACE WATER SURVEY 2018</u>	3- Water Monitoring	2- Technical Reports
<u>Armenia : Surface Water survey report 2019 (Eng)</u>	3- Water Monitoring	2- Technical Reports
<u>Armenia: Definition of reference conditions and class boundaries in rivers of Armenia for the BQE benthic invertebrates (Eng)</u>	3- Water Monitoring	2- Technical Reports
<u>Armenia: Groundwater Monitoring Development Plan, 2021 (AM)</u>	3- Water Monitoring	2- Technical Reports
<u>Armenia: Groundwater Monitoring Development Plan, 2021 (ENG)</u>	3- Water Monitoring	2- Technical Reports
<u>Armenia: Groundwater surveys (2018-2019) report (Eng)</u>	3- Water Monitoring	2- Technical Reports
<u>Armenia: Hrazdan-Sevan Detailed Assessment of Modern Flow Measurement Equipment Needs for Irrigation Water Accounting, 2018 (Arm)</u>	3- Water Monitoring	2- Technical Reports
<u>Armenia: Hrazdan-Sevan Detailed Assessment of Modern Flow Measurement Equipment Needs for Irrigation Water Accounting, 2018 (Eng)</u>	3- Water Monitoring	2- Technical Reports
<u>Armenia: RBMP Supplement - Report on Surface Water Monitoring in the Hrazdan RBD (ENG)</u>	3- Water Monitoring	2- Technical Reports
<u>Armenia: Surface Water Monitoring Development Plan, 2021 (AM)</u>	3- Water Monitoring	2- Technical Reports
<u>Armenia: Surface Water Monitoring Development Plan, 2021 (ENG)</u>	3- Water Monitoring	2- Technical Reports
<u>Armenia: Surface Water Monitoring in the Hrazdan RBD (ENG)</u>	3- Water Monitoring	2- Technical Reports
<u>WATER MONITORING ASSESSMENT REPORT – ARMENIA May 2019</u>	3- Water Monitoring	2- Technical Reports
<u>Armenia - Guidelines: General manual for surveys in surface water (Arm)</u>	3- Water Monitoring	3- Guidance Documents
<u>Investigative Monitoring, Surface Water Capacity Building in Armenia. Annexes</u>	3- Water Monitoring	2- Technical Reports
<u>Armenia : THEMATIC SUMMARY - DEVELOPMENT OF DRAFT RIVER BASIN MANAGEMENT PLAN FOR HRAZDAN RIVER BASIN</u>	4- River Basin Management Plans	2- Technical Reports
<u>Armenia: Hrazdan & Sevan - Groundwater delineation report, 2018 (ENG)</u>	4- River Basin Management Plans	2- Technical Reports

<u>Armenia: Hrazdan, Atlas to the River Basin Management Plan, 2020 (ARM)</u>	4- River Basin Management Plans	2- Technical Reports
<u>Armenia: Hrazdan, Atlas to the River Basin Management Plan, 2020 (ENG)</u>	4- River Basin Management Plans	2- Technical Reports
<u>Armenia: Hrazdan, River Basin Management Plan, 2020 (ARM)</u>	4- River Basin Management Plans	2- Technical Reports
<u>Armenia: Hrazdan, River Basin Management Plan, 2020 (ENG)</u>	4- River Basin Management Plans	2- Technical Reports
<u>Armenia: Hrazdan, Summary of the RBMP – programme of measures, 2020 (ENG)</u>	4- River Basin Management Plans	2- Technical Reports
<u>Armenia: Short version Thematic Summary 2nd consultation (Arm)</u>	4- River Basin Management Plans	2- Technical Reports
<u>Guidance document for establishing and updating river basin management plans in Armenia (Arm)</u>	4- River Basin Management Plans	2- Technical Reports
<u>Over-abstraction and altered flow regimes in Armenian rivers: workshop on environmental flow assessment in the Akhuryan Basin, 19-20 June 2019</u>	4- River Basin Management Plans	4- Workshops - Training
<u>Armenia: Consultation Report on main issues (2019) - Hrazdan & Sevan RBMPs (Eng)</u>	4- River Basin Management Plans , 6- Stakeholders Involvement	2- Technical Reports
<u>Armenia: Hrazdan - Short version Thematic Summary 2nd consultation (Arm)</u>	4- River Basin Management Plans , 6- Stakeholders Involvement	2- Technical Reports
<u>Armenia: Hrazdan - Thematic Summary 2nd consultation (measures) (ARM)</u>	4- River Basin Management Plans , 6- Stakeholders Involvement	2- Technical Reports
<u>Armenia: Hrazdan, consultation report on RBMP programme of measures, 2020 (Eng)</u>	4- River Basin Management Plans , 6- Stakeholders Involvement	2- Technical Reports
<u>Armenia: Hrazdan, questionnaire analysis for non-governmental stakeholders - consultation report on RBMP programme of measures, 2020 (Eng)</u>	4- River Basin Management Plans , 6- Stakeholders Involvement	2- Technical Reports
<u>Armenia: Questionnaire Analysis - consultation report on main issues (2019) - Hrazdan RBMP (Eng)</u>	4- River Basin Management Plans , 6- Stakeholders Involvement	2- Technical Reports
<u>Armenia: Participation and communication for River Basin Management Planning - Sevan and Hrazdan best practices, 2021 (ARM)</u>	4- River Basin Management Plans , 6- Stakeholders Involvement	3- Guidance Documents

<u>Armenia: Public Participation in River Basin Management Planning - Sevan and Hrazdan best practices, 2021 (ARM)</u>	4- River Basin Management Plans , 6- Stakeholders Involvement	3- Guidance Documents
<u>Armenia: Hrazdan, Questionnaire 2nd consultation (measures) (ARM)</u>	4- River Basin Management Plans , 6- Stakeholders Involvement	8- Other
<u>Armenia: Hrazdan - Factsheet RBMP in brief (ARM)</u>	4- River Basin Management Plans, 7- Communication - Visibility	6- Visuals (Infographics - Factsheets)
<u>Armenia: Guidance - User Guide for metadata catalogue, web services and tonline tools</u>	5- Water Data Management	3- Guidance Documents
<u>Infographics Main Issues Hrazdan river basin in Armenia (ARM)</u>	7- Communication - Visibility	6- Visuals (Infographics - Factsheets)
<u>Armenia: Technical report - delineation of surface water bodies in Sevan and Hrazdan river basins (ENG)</u>	4- River Basin Management Plans	2- Technical Reports

The participative process in RBMP elaboration is an important aspect of the assignment. The results, events and actions will contribute to feed on a continuous basis the communication of the EU4Environment – Water and Data programme to raise awareness on more sustainable management practices for water resources.

V. Schedule & implementation modality

V.1. Schedule

Duration of the assignment will be up to May 31st 2024 and is expected to start from November 1, 2022. The assignment is divided into phases. The successive chapters have to be prepared according to the schedule underneath and delivered to the project team in due time. Any delay must be announced as early as possible and acknowledged.

Payment for the deliverables shall be considered only when the work is accepted by the project team on behalf of the country beneficiaries.

Summary of the work schedule

Deliverables	Approx. number of pages (without annexes)	Language of deliverable	Start date (with M0 = signature of the contract)	Due date for draft report	Finalization
Description of the characteristics of the river basin including water body delineation	50	National language / English	M1	M4	M5
Pressures and impact of human activities on water resources	30	National language / English	M2	M5	M6
Identification and mapping of protected areas	20	National language / English	M2	M3	M4
Economic analysis (part 1)	20	National language / English	M2	M4	M6
First thematic summary	< 20	National language / English	M2	M6	M8
Atlas (maps) & Metadata catalogue	> 75	National language / English	M1	At each step	M18
Objectives	30	National language / English	M9	M10	M12
Monitoring Programmes	20	National language / English	M5	M10	M13
Programme of measures Economic analysis (part 2)	50	National language / English	M10	M14	M15
Draft RBMP including dashboard on implementation monitoring	100	National language / English	M8	M15	M16

Second thematic summary	< 20	National language / English	M14	M15	M16
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V.2. Implementation modalities

Works shall be implemented by an Armenian company or group of NGO(s), university, research institution, etc. that are not representing the project beneficiaries. The studies will be closely coordinated, assisted and monitored by the project team (OiEau, UBA and the project representative) and the beneficiaries (Water Resources Management Department, and Water Policy Department of the Ministry of Environment and the Water Committee of the Ministry of Territorial Administration and Infrastructures). Close coordination shall be ensured with the beneficiaries who will take full ownership of the QMP produced.

Technical issues as data description (producers, availability, quality, scales, collection frequency, etc.), related difficulties to collect them, data formatting requirements, methodological aspects (average ratio to convert socio-economic data into pressures data), etc. will be discussed regularly with the project team.

The contractor has to designate competent specialists for each part of the assignment as well as a coordinator who is responsible of managing these specialists, harmonise the documents, and inform regularly the project team. As a matter of illustration, the contractor's team could be typically include the following competencies:

- 1 team leader, main editor and coordinator of the RBMP
- 1 hydrologist
- 1 hydrogeologist
- 1 specialist of water-related ecosystems
- 1 specialist in water economics
- 1 specialist in irrigation
- 1 specialist in hydraulic infrastructures
- 1 GIS specialist for map production with knowledge of the water sector
- 1 specialist in stakeholder involvement (background in sociology and/or human geography, good knowledge on water resources management, good knowledge of the basin and of its stakeholders.)

The allocation of the budget in function of the outputs is indicated as follows:

Deliverables	% of allocated budget
Description of the characteristics of the river basin including water body delineation	10
Pressures and impact of human activities on water resources	20
Identification and mapping of protected areas	5
Economic analysis (part 1)	5
First thematic summary	5
Atlas and metadata form filled up for data sources used	5
Objectives	10
Monitoring programmes	5

Programme of measures Economic analysis (part 2)	15
Draft RBMP	10
Dashboard for RBMP implementation monitoring	5
Second thematic summary	5
Total	<i>100</i>

Contact details:

Local Representative of the Programme “EU4Environment Water and Data” in Armenia:

Mr Vahagn Tonoyan, Senior Water Management and Coordination Expert, v.tonoyan@eu4waterdata.eu

The responsible thematic leader:

Mr Yannick Pochon, International Office for Water (OiEau), y.pochon@oieau.fr

VI. Participation to the tender

Interested parties (individual and legal persons) are invited to inquire the full tender dossier containing instructions and further information about the tender procedure from Ms. Ilke CICEKOGLU, Project Assistant, International Office for Water (OiEau) and Mr Yannick POCHON, Thematic Leader, International Office for Water (OiEau).

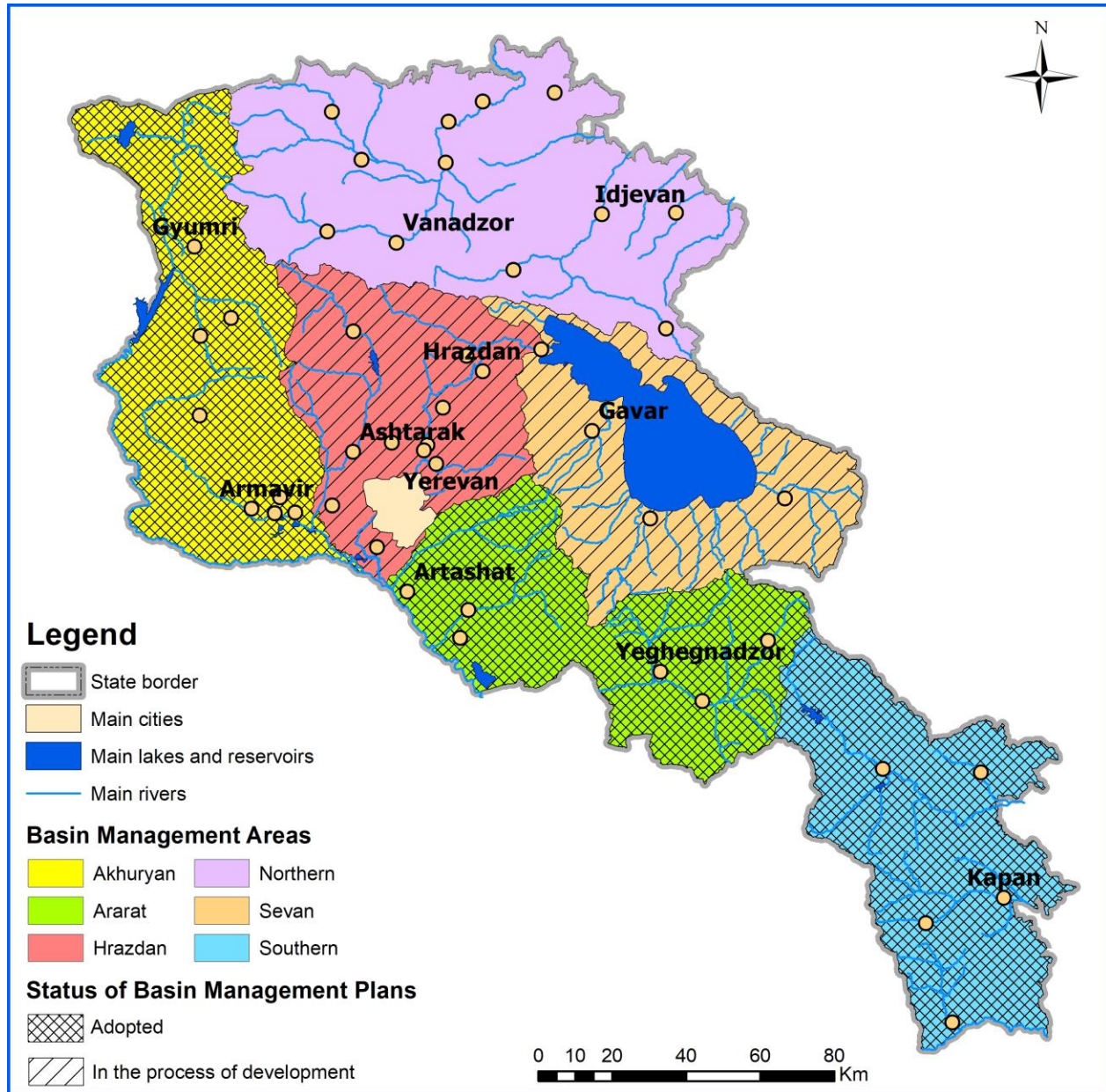
(email address : i.cicekogl@oieau.fr)

(email address : y.pochon@oieau.fr)

Deadline for submission of the technical and financial offer is **28 October 2022, 18:00 CET**.

LIST OF ANNEXES

Annex 1: Map of Northern river basin



Annex 2: provisional list of maps

Examples:

- *Geology of the basin*
- *Hydrogeology of the basin*
- *Groundwater bodies*
- *Surface water bodies*
- *Land use*
- *Localisation of the water intake facilities for drinking-water/agriculture/industry*
- *Irrigation network, canals*
- *Localisation of hydrometric and meteorological stations*
- *Groundwater monitoring sites (quantity and quality)*
- *Protected areas*
- *Main water use*
- *Sustainable water use objectives*

Annex 3: Specifications for datasets, metadata and maps production

Annex 4: metadata sheet description (AM and EN)

Annex 5: metadata user manual (AM)