



**European Union Water Initiative Plus for the Eastern Partnership (EUWI+ 4 EaP)
“Azerbaijan”
Terms of References for local contractor**

6 March 2018

**Terms of References for RBMP development in Kura upstream Mingachevir dam
river basin district (Azerbaijan)**

1. Financing

European Union (ENI/2016/372-403)

2. Procedure

Competitive Negotiated Procedure according to EU PRAG

3. Contracting Authority

International Office for Water (IOW)

4. Nature of contract

Service contract

5. Time period of implementation

18 months after signature of the contract. Indicative timeframe: Mai 2018 - October 2019

6. Contract amount

Maximum amount: 70 000 EUR

7. Background information

The EUWI+East project addresses existing challenges in both development and implementation of efficient management of water resources. It specifically supports the Eastern Partnership¹ countries to move towards the approximation to EU acquis in the field of water management with a focus on trans-boundary river basin management as identified by the EU Water Framework Directive (WFD).

The overall objective of the project is to improve the management of water resources in the EaP countries.

The specific objective is to achieve convergence of national policies and strategies with the EU Water Framework Directive, Integrated Water Resource Management (IWRM) and relevant Multilateral Environmental Agreements (MEAs).

The EUWI+East project is divided into three result areas as follows:

- Result 1: Legal and regulatory frameworks improved in line with the WFD, IWRM and MEAs;
- Result 2: River Basins Management Plans designed and implemented in line with the WFD principles;
- Result 3: Lessons learnt regularly collected, shared and communicated to stakeholders.

This assignment will contribute to the implementation of the Result 2, activity 2.3.2. “Technical Support in the elaboration and implementation of the pilot River Basin Management Plans (RBMPs)”, activity 2.3.3. “Technical Support to the RBM institutions to tackle coordination in transboundary river basins activity”, 2.3.6. “Development and strengthening of national databases on water related issues & ensure compliance of data with SEIS principles for collection and sharing of data” and activity 2.3.7. “Establish a system for regular monitoring of the implementation of the RBMPs & Support the use of evidence-based data for policy making”.

This assignment concerns the production of the draft RBMP including a dashboard to follow its implementation for the Kura basin district upstream Mingachevir dam (18 480 km², see map in annex 1) on the territory of Azerbaijan.

The development of the RBMP document will be guided by annex VII of the WFD (Directive 2000/60/EC).

¹ The Eastern Partnership (EaP) is a policy initiative launched at the Prague Summit in May 2009. It aims to deepen and strengthen relations between the European Union and its six Eastern neighbours: Armenia, Azerbaijan, Belarus, Georgia, Moldova and Ukraine.

8. Scope of works and deliverables

a. Scope of works

The main objective of this assignment is to produce the elements for the draft of the RBMP and its implementation dashboard for the Kura basin district upstream Mingachevir dam (18 480 km², see map in annex 1) on the territory of Azerbaijan, in line with the Water Framework Directive 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 (note that delineation of water bodies is subjected to another tender),
- Pressure and impact assessment of human activity,
- Protected areas identification,
- Objectives,
- Economic analysis,
- 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 punctuated by different meetings with main interested parties (expert groups for technical exchanges on the outputs drafting, NPD, stakeholder consultation meeting for active involvement, 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 an important input from this assignment. The contractor will have to participate (not to organise) to most of the meetings to present and take onto account opinions and views expressed.

Meetings with experts group could take the form of trainings. These trainings will be set up by the project team in order to improve national capacity building. The contractor will have to participate to the trainings to present methodologies and results.

The participative process in RBMP construction 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:

- 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 EPIRB project³:

- Guidance Document addressing hydromorphology and physico-chemistry for a Pressure-Impact Analysis/Risk Assessment according to the EU WFD
- Guidance Document addressing Chemical Status of Surface Water Bodies for a PressureImpact Analysis/Risk Assessment according to the EU WFD

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

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

In parallel, targeted assignments concern waterbodies delineation and respective monitoring programme. These assignments will be steered in an interactive way with the present service contract insuring that they complement each other in consistency.

b. Data collection

RBMP implementation supposes production of maps and indicators during the successive phases of the planning process. The necessary datasets necessary for an efficient Integrated Water Resource Management are produced by various national organizations.

The basic principle of action is that all the datasets presented or used in a map or a table or an indicator must be described in a catalogue of metadata established by the project and must be available in the national FTP server set-up by the Project.

The contractor will have to identify official existing data sources, their availability and data producers.

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

³ See [http://blacksea-riverbasins.net/en/downloads-library-search?ff\[0\]=field_downloads_type%3A61](http://blacksea-riverbasins.net/en/downloads-library-search?ff[0]=field_downloads_type%3A61)

As a consequence, the task of the contractor will include:

- To collect the necessary datasets at the level of the producers;
- To work with the data producers in order that the dataset provided are described on line into the metadata catalogue made available by the project;
- To copy the raw data made available by each producer on the FTP made available by the project.

The corresponding expected results can be formulated as follow:

- All datasets used are described in English and in Azeri into the metadata catalogue;
- All raw dataset used are available on FTP.

It is understood that the metadata forms will have to be collected from each data producer while collecting data, but their production is not under the responsibility of the contractor.

A letter of request will include the obligation that when the data producer provides a dataset or a GIS layer, he also provides the corresponding metadata sheet fulfilled.

The contractor is then responsible to copy all raw data made available by producers on the FTP, to collect the metadata sheet (to be imported automatically) and to complete on line the metadata into the metadata catalogue with the following additional information:

- Thumbnail
- Geographical limits
- Translation in English and National language of all metadata entered
- Description of right of dissemination
- Declare of public access the metadata sheet

A list of the main “data topics” has been established and is available in annex 2. This list can be complemented by specific topics.

c. 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 valorised forms (GIS layers, data base, Excel, etc).

Reports will be transmitted in digital form which can be corrected (MS Office 2007). 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 (see specimen in annex 5). 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.

d. Deliverables

The **deliverables** will include:

- 6 Technical reports: Characteristics of the River Basin, Pressure and impact assessment of human activities, Protected areas identification, Objectives, Economic analysis, Programme of Measures;
- 1 thematic summary to prepare Main Issues consultation;
- 1 draft complete RBMP;
- 1 draft implementation dashboard for the monitoring of the RBMP implementation;
- 1 thematic summary to present measures per Main Issue (or stake);
- 1 atlas of maps;
- All datasets used, described and uploaded to a data catalogue;
- And active participation to meetings and trainings (described further).

Results will be presented at basin scale, sub-basin scale, water bodies scale, and/or at “water management unit” scale. Results will be mapped for the whole Kura basin district upstream Mingachevir dam (18 480 km², see map in annex 1) in Azerbaijan.

Template of the proposed table of contents for each deliverable is shown below in order to provide an idea of the minimum information required for each section (the richness being subject to data and information availability). Annex 4 proposes a list of maps for RB characterization which could be elaborated in relation to the “data topics”.

Is presented below the proposed chronology for the RBMP chapters including the 2 thematic summaries.

1. Description of the characteristics of the river basin

1.1. Geographic overview

- 1.1.1. Climate (effective rainfall, etc)
- 1.1.2. Topography
- 1.1.3. Geology
- 1.1.4. Soils
- 1.1.5. Vegetation, land cover
- 1.1.6. Outstanding aquatic ecosystems & wetlands

- 1.2. Water resources
 - 1.2.1. Hydrographic network (natural, artificial)
 - 1.2.2. Surface water resources (characteristic flows, annual and inter-annual variations, ecological flows; quality)
 - 1.2.3. Groundwater resources (quantitative & qualitative aspects)
- 1.3. Human activities & water uses (description and main trends)
 - 1.3.1. Population (urban, rural, trends)
 - 1.3.2. Agriculture (crops and livestock husbandry)
 - 1.3.3. Fish farms, shellfish aquaculture
 - 1.3.4. Forestry
 - 1.3.5. Industry, mining, aggregates extraction, dredging
 - 1.3.6. Hydropower generation (incl. hydropower potential)
 - 1.3.7. Waste disposal, landfills, polluted sites
 - 1.3.8. Navigation
 - 1.3.9. Tourism
 - 1.3.10. Linear infrastructures (incl. winter road maintenance, underground infrastructures)
- 1.4. Risks (incl. climate change)
 - 1.4.1. Flood
 - 1.4.2. Scarcity
 - 1.4.3. Erosion
 - 1.4.4. Health issues
- 1.5. Stakeholders & programmes
 - 1.5.1. Administrative organisation
 - 1.5.2. Directory of water users
 - 1.5.3. Summary of strategies, programmes, plans and development projects concerning water resources
- 1.6. Diagnosis
 - 1.6.1. Synthetic description with key figures
 - 1.6.2. Brief SWOT analysis

The document will focus on topics and activities with likely impacts on water resources with relevant facts and figures which will be used to evaluate their pressures.

Note that water body delineation is assessed through another tender. The project team will synchronise the 2 assignments.

2. Pressures and impact of human activities on water resources

- 2.1. Estimation of point source pollution of organic matter, nitrogen, phosphorus, pesticides, hazardous substances, bacteriology (e.g. urban waste water treatment plants discharges: location, connected population (number of inhabitants), and connected industries (name, type and volume of activities, abstraction volume and discharge quality), pollution before treatment and discharged after treatment if measured, sludge management, storm water management, etc.
- 2.2. Estimation of diffuse source pollutions of organic matter, nitrogen, phosphorus, pesticides, hazardous substances, bacteriology (e.g. balance estimation from crops yields, agronomic practices, and manure management, etc)

- 2.3. Estimation of quantitative pressures on surface water and groundwater (water abstraction for households, industrial activities, irrigation; transfers outside/inside the river basin; localisation, volume, trends)
- 2.4. Analysis of other pressures and impacts of human activity (hydrological regime – abstraction, works, hydropeaking-, river continuity, morphological conditions, etc)
- 2.5. Other pressures (e.g. alien species proliferation)
- 2.6. Synthesis
 - 2.6.1. Quantity of pollution affected by domain of origin and balance during low flows
 - 2.6.2. Quantitative balance between abstractions and surface water and groundwater resources
 - 2.6.3. Global synthesis of pressures and hot spots

Results will be estimated in link with the results of section 1.3 at the smallest available scale in order to possibly integrate them per water body and/or sub-basin.

Comparison of theoretical estimations will be made with monitoring results, depending on availability of robust results.

3. Identification and mapping of protected areas

- 3.1. Drinking water abstractions
- 3.2. Economically significant species (fish, shells)
- 3.3. Bathing waters
- 3.4. Vulnerable zones (first attempt of designation from Nitrates monitoring results and/or intensive agricultural activities areas)
- 3.5. Sensitive areas (first attempt of designation from signs of eutrophication and population density)
- 3.6. Special areas of conservation (habitats), special protection areas (birds) (first attempt from Emerald networks and current protection areas)

Identification and mapping will be formatted with results from chapter 1.

4. Economic analysis (part 1 related to basin characterisation)

- 4.1. Economic weights by relevant water uses (results from chapter 2), socio-economic issues, main trends
- 4.2. Water prices by sector and by territory
- 4.3. Funding (investment, maintenance) by sector
- 4.4. Preliminary cost-recovery assessment

5. First thematic summary

This document will be used to prepare stakeholders consultation to collectively identify main issues.

This concise document (< 20 pages) will be described in a synthetic manner main results through 5 stakes: health, quality, quantity, ecosystems, governance.

6. Objectives

- 6.1. Risk assessment
- 6.2. Environmental objectives for surface water bodies (incl. risk analysis, deadlines report justification, Heavily Modified Water Bodies designation)
- 6.3. Environmental objectives for groundwater water bodies (incl. risk analysis, deadlines report justification)
- 6.4. Environmental objectives for protected areas
- 6.5. River Basin targets for water-related Sustainable Development Goals (SDGs), protocols for water and health
- 6.6. Specific water-related objectives from National strategies and/or policies
- 6.7. Specific water-related objectives from basin stakeholder consultation

Risk assessment estimated from pressures analysis (section 2.6.3) will be completed with elements from water bodies delineation & status assessment.

Objectives may go beyond than these strictly required in WFD in order to take into account local issues or specific national regulation.

7. Economic analysis (part 2 related to program of measures)

- 7.1. Programme of measures costing
- 7.2. Environmental benefits and cost-effectiveness for selecting measures

As economic analysis part 2 concerns both environmental objectives (disproportionate costs) and programme of measures (costing, etc), final report could be delivered at the end of the assignment. Costs will be expressed in national currency and in euros.

8. Programme of measures

- 8.1. Basic measures
- 8.2. Supplementary measures

Measures to reach the objectives could be ranked into 5 categories: rules, governance, awareness, knowledge improvement, works. They will be described with a view of implementation, detailing content, associated objectives, localisation, indicators to feed a dash-board, costs, plans concerned, project owners, schedule, etc. The programme of measures will concern the first WFD 6-years cycle in the country. Measures with a schedule beyond the first cycle will be presented in a less detailed manner.

Measures will be presented at the best scale regarding their implementation. This scale will be adapted to each measure.

The contractor will make a pedagogical effort to describe the programme of measures and make prioritisation proposals.

9. Complete RBMP draft

The content of the complete RBMP draft is given in annex VII of WFD (see annex 5). The document will be drafted with elements from all the achievements and results coming from other concerned tenders and consultations (e.g. monitoring programme).

The draft will be straightforward, synthetic and pedagogical. One of its goals is also to raise a wide awareness towards sustainable development, Integrated Water Resources Management (IWRM) and WFD concepts.

10. Second thematic summary

This document will be used to prepare stakeholders consultation about RBMP.

This concise document (< 20 pages) will described in a synthetic manner the measures per main issue.

e. Meetings & trainings

Specific meetings will be organized with various audiences (experts, stakeholders, etc) during the planning process.

Trainings intended to experts group will be organized to cover the following topics: pressures analysis and protected areas designation, risk analysis, objectives, programme of measures including economical analysis. 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.

<i>Phase</i>	<i>Meeting target</i>
Characterisation of river basin	
Pressures and impact of human activities on water resources Risk assessment	<i>Experts group Basin stakeholders</i>
Identification and mapping of protected areas	<i>Experts group</i>
Economic analysis part 1	<i>Experts group</i>
First thematic summary	<i>Stakeholders consultation</i>
Objectives	<i>Experts group Basin stakeholders</i>
Economic analysis part 2	<i>Experts group</i>
Programme of measures	<i>Experts group</i>
RBMP (first draft & update after the stakeholder consultation)	<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 expert groups/trainings, 2 main basin stakeholders' consultations and NPD).

9. Implementation modalities

a. Schedule

The assignment is divided into phases and the finalization respective to the following schedule.

Successive reports have to be prepared according with a schedule presented below and delivered to the project team in due time.

It is anticipated however that the draft deliverables will be first reviewed by the project team and the beneficiaries (RBMP, data management and communication thematic focal points) and if necessary will be returned to the implementing institution for finalization and re-submission. Therefore, draft reports will be submitted to the Project Team at least 2 months before the related meeting, the reviewed report and associated presentation at least one month before the related meeting.

Summary of the work schedule

Deliverables	Approx. number of pages outside annex	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	50	National language / English	M1	M3	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	M3	M4	M5
Economic analysis (part 1)	20	National language / English	M4	M5	M6
First thematic summary	< 20	National language / English	M5	M6	M7
Maps & Metadata catalogue	> 75	National language / English	M1	At each step	M16
Objectives	30	National language / English	M7	M8	M9
Programme of measures Economic analysis (part 2)	50	National language / English	M8	M14	M15
Draft RBMP including dashboard on implementation monitoring	100	National language / English	M8	M15	M16
Second thematic summary	< 20	National language / English	M15	M16	M17

b. Implementation modality

Works shall be implemented by a local 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, consisting mainly of the National Thematic Focal Points for RBMP, data management and stakeholders' involvement, the thematic leaders on RBMP, data management and stakeholders' involvement, the country representative, and the National Focal Point. Close relationships will be formed and maintained with the beneficiary who will own the product and take full ownership of the RBMP produced.

The contractor will have to designate competent specialists for each part of the assignment as well as a coordinator who will be responsible of managing these specialists, harmonise the document, and inform regularly the project team.

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 with the project team to find best solutions adapted to the Azeri context.

The contractor will have to designate competent specialists for each part of the assignment as well as a coordinator who will be responsible of managing these specialists, harmonise the document, and inform regularly the project team.

As a matter of illustration, the contractor's team could be typically composed of the following main expert profiles:

- 1 team leader and redactor of the plan;
- 1 specialist of point source pressures; typically from domestic and industrial/mining water use with knowledge of water uses and solution to reduce pressures;
- 1 specialist of diffuse pollution sources, irrigation; typically from agriculture sector with knowledge of water uses and solution to reduce those pressures;
- 1 GIS specialist for map production with knowledge of the water sector;
- 1 economist with knowledge of the water sector;

Capacity to mobilise specialist on targeted issues (flood risk, hydropower, etc) will be a plus.

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

Deliverables	% of allocated budget
Description of the characteristics of the river basin	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
Programme of measures Economic analysis (part 2)	20
Draft RBMP and update after consultation	10
Dashboard for RBMP implementation monitoring	5
Second thematic summary	5
Total	<i>100</i>

Contact details:

The National Project Representative for EUWI+EAST in Azerbaijan: Mr Rafig Verdiyev, rafig.verdiyev@euwipluseast.eu

The responsible thematic leader for RBMP:
Yannick Pochon, International Office for Water, y.pochon@oieau.fr

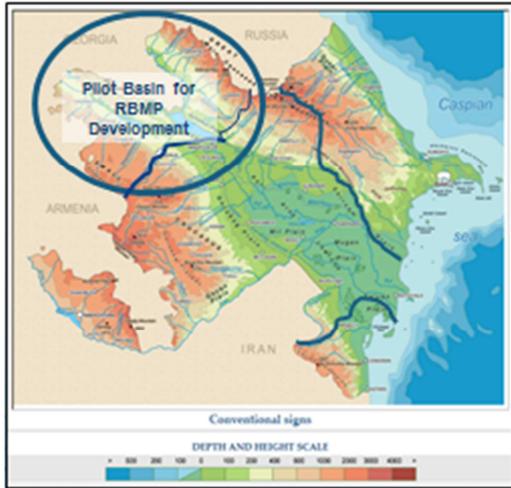
The project manager EUWI+East for International Office for Water:
Pierre HENRY de VILLENEUVE, p.henry-de-villeneuve@oieau.fr

10. 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 Ilke CICEKOGLU (i.cicekoglu@oieau.fr), Project Assistant, International Office for Water (IOW) and Pierre HENRY de VILLENEUVE (p.henry-de-villeneuve@oieau.fr), Project Manager, International Office for Water (IOW).

Deadline for submission of the technical and financial offer at IOWater premise is **16 April, 17:00 (CET)**

Annex 1: Map of Kura basin district upstream Mingachevir dam in Azerbaijan



Annex 2: Integrated Water Resource Management actors acronyms in Azerbaijan

Country	Name of organisation EN	Name of organisation RU	Acronum	Website
AZ	Azerbaijan Amelioration and Water Farm Open Joint Stock Company	ОАО "Мелиорация и водное хозяйство Азербайджана"	AAWF JSC	http://www.mst.gov.az
AZ	Azersu Joint Stock Company	ОАО "Азерсу"	AZERSU	http://azersu.az
AZ	Bureau of the Water Convention Scientific Research - Hydromet Inst.			
AZ	Cabinet of Ministers	Кабинет Министров	CAB MIN	http://www.cabmin.gov.az
AZ	Caspian Basin Accident Rescue Service of the Ministry of Emergency Situations	Каспийская бассейновая аварийно-спасательная служба	CBARS, MES	http://www.dsxx.fhn.gov.az
AZ	Caspian Complex Environmental Monitoring Department	Управление комплексного экологического мониторинга Каспия	MENR/CEMD	http://eco.gov.az/en/750-administration
AZ	Complex Hydrometeorology and Environmental Research Scientific Center	Научно-исследовательский центр гидрометеорологических и экологических исследований	MENR/CHERS C	http://eco.gov.az/az/71-implemented-activities
AZ	Department of Environmental Protection		MENR/DEP	
AZ	Ministry of Agriculture	Министерство сельского хозяйства	MoA	http://www.agro.gov.az
AZ	Ministry of Ecology and Natural Resources - Bahram Agayev st.	Министерство экологии и природных ресурсов	MENR	http://www.eco.gov.az
AZ	Ministry of Economic Development	Министерство экономического развития	MINECONOM Y	http://www.economy.gov.az
AZ	Ministry of Emergency Situations	Министерство чрезвычайных ситуаций	MES	http://www.fhn.gov.az
AZ	Ministry of Energy	Министерство промышленности и энергетики	MoE	http://www.minenerg.gov.az
AZ	Ministry of Health	Министерство здравоохранения	MOH	http://www.health.gov.az
AZ	Ministry of Transport	Министерство транспорта	MINTRANS	http://www.mot.gov.az
AZ	National Academy of Science		NAS	http://www.science.az
AZ	National Environmental Monitoring Department	Центр мониторинга загрязнения окружающей среды	MERN/NEMD	http://eco.gov.az/en/115-structure
AZ	National Geological Exploration Service	Национальная служба геологической разведки	MENR/NGES	http://www.eco.gov.az
AZ	National Hydrometeorology Department	Национальный департамент гидрометеорологии	MENR/NHD	
AZ	Republic Center of Hygiene and Epidemiology		MoH/RCHE	
AZ	State Agency for Geodesy & Cartography	Государственное агентство по геодезии и картографии	MENR/SAGC	http://eco.gov.az/en/1007-state-agency-for-geodesy-and-cartography
AZ	State Agency on Alternative and Renewable Energy Sources	Государственное агентство по альтернативным и возобновляемым источникам энергии	AREA	http://www.area.gov.az
AZ	State Committee of Property		SCPI	
AZ	State Statistical Committee	Государственный комитет статистики	Azstat	http://www.stat.gov.az
AZ	Sukanal Scientific Research and Design Institute	Научно-исследовательский и проектный институт «Суканал»	Sukanal	http://www.sukanal.az
AZ	Water Resources Agency of the Ministry of Emergency Situations	Государственное агентство водных ресурсов Министерства чрезвычайных ситуаций	MED/WRSA	http://www.fhn.gov.az

Annex 3: List of data topic related to IWRM and preliminary identification of producers and availability

IWRM domain name	Data topic name	Producer (Acronyms)	Available	Where and how (url, web services, link,)
AD	ADMINISTRATIVE CONTEXT :			
AD	Country	MENR ACG /NAS	1	
AD	AD level 1 (Province, Oblast)	MENR ACG /NAS	1	
AD	AD level 2 (District)	MENR ACG /NAS	1	
AD	AD level 3 (Municipalities)	MENR ACG /NAS	1	
AD	Main cities delimitation	MENR ACG /NAS	1	
AD	Villages	MENR ACG /NAS	1	
AD	Water authorities location		0	
AD	Populated area	MENR ACG /NAS	1	
AD	Socio Economical data	SSC (AzStat)	1	
AD	Location project of electric production	AzEnergy	1	
AD	Planning area		0	
AD	Projects/programmes		0	
SW	SURFACE WATER ENTITIES :			
SW	Rivers	MENR ACG / NAS / Amelioration JSC	1	
SW	Main rivers	MENR ACG / NAS / Amelioration JSC	1	
SW	Minor rivers	MENR ACG / NAS /Amelioration JSC	1	
SW	Intermitent rivers	MENR ACG / NAS Amelioration JSC	1	
SW	Canals	Amelioration JSC / MENR ACG	1	
SW	Magistral canals	Amelioration JSC / MENR ACG	1	
SW	Hydrographic districts	NAS	1	
SW	Basins (Water Use)	Amelioration JSC	1	
SW	Sub Basins		0	
SW	Catchments	NAS	1	
SW	Lakes (natural, artifical)	MENR ACG / Amelioration JSC	1	
SW	Main lakes >50ha (natural, artifical)	MENR ACG / Amelioration JSC/ SWRA	1	
SW	Wetlands	MENR ACG /	1	

		Amelioration JSC		
GW	GROUND WATER ENTITIES :			
GW	Hydrogeological regions	MENR DGS / NAS GEOL/AzerSu	1	
GW	Aquifers	MENR DGS / NAS GEOL/AzerSu	1	
ENV	ENVIRONMENTAL CONTEXT :			
ENV	Digital Elevation Model	AzerCosmos / MENR ACG / NAS	2	www.azercosmos.az
ENV	Elevations lines	AzerCosmos / MENR ACG / NAS	2	www.azercosmos.az
ENV	Topographic maps	MENR ACG	2	
ENV	Cadastral base maps	SCPI / MENR ACG	1	
ENV	Roads	MENR ACG	1	
ENV	Main roads	MENR ACG	1	
ENV	Landuse maps	SCPI / MENR ACG	1	
ENV	Agriculture area	MoA	1	
ENV	Forestry	MENR ACG	1	
ENV	Geological map	NAS GEOL / MENR ACG	1	
ENV	Soil map	NAS SOIL / MENR ACG	1	
ENV	Soil erosion area	NAS SOIL / MENR ACG	1	
ENV	Coastal erosion area	MENR ACG	2	
ENV	Protected area	MENR ACG	2	
ENV	Natural parcs	MENR ACG	2	
ENV	Alien species proliferation area	MENR ACG	2	
ENV	Urban planning information	SCAU	1	
ENV	Satellite images	AzerCosmos	2	
ENV	Aerial Photography	AzerCosmos / MENR ACG	1	
MO	MONITORING ASPECTS :			
MO	Networks and stations climat/meteo	MENR NEMD/HYDRO	2	
MO	Networks and station hydrological aspects	MENR HYDROMET	2	
MO	Networks and station for water quality monitoring	MENR NEMD	2	
MO	Point of controls of ground water level (piezometry)	MENR NGS / Amelioration JSC	1	

MO	Climat meteo data	MENR HYDRO	2	
MO	Rainfal database	MENR HYDRO	2	
MO	Surface water quantity data (water level, water flow)	MENR HYDRO	1	
MO	Ground water level (piezometry)	MENR NGS	1	
MO	List of parameters for classification following laws	MENR NEMD	1	
MO	Surface water quality data	MENR HYDRO	1	
MO	Ground water quality data	MENR NGS	1	
UP	WATER USERS/ WATER POLLUTERS CHARACTERISTICS:			
UP	Population in cities and villages (actual and future)	SSC (AzStat)	2	www.stat.gov.az
UP	Water user for industry	Amelioration JSC / SWRA /SSC	2	www.stat.gov.az
UP	Industrial activities	SSC	2	
UP	Touristic cadaster	SSC / MCT	2	
UP	Water user Hydro electricity	AzerEnergy	1	
UP	Water user for agriculture	Amelioration JSC / SWRA / MoA	1	
UP	Water user association	Amelioration JSC / SWRA / MoA	2	
UP	Water user association for irrigation	Amelioration JSC / SWRA / MoA	2	
UP	Water user association of farmers	Amelioration JSC / SWRA / MoA	2	
UP	Water user for breeding	Amelioration JSC / SWRA / MoA	2	
UP	Water user for navigation	Amelioration JSC / SWRA / MoA	2	
UP	Water user for aquaculture	Amelioration JSC / SWRA / MoA	2	
UP	Data on licensing for water uses	MENR	1	
UP	Crops area per type of crops	MoA / SSC	2	
UP	Commercial forestry area	MENR Forestry	1	
UP	Number of cattle head	MoA / SSC	2	
UP	Number of breeding center	MoA / SSC	2	
UP	Bathing water areas	MENR ACG	2	
UP	Thermal water areas	MENR ACG	2	
UP	Fishing areas	MENR ACG	2	
UP	Shellfish areas	MENR ACG	2	

INFR	INFRASTRUCTURE'S CHARACTERISTICS :			
INFR	Dams	SWRA / MENR HYDRO	2	
INFR	Boreholes	MENR NGS	2	
INFR	Water supply	AzerSu / MENR	1	
INFR	Drinking water treatment plant	AzerSu / MENR	2	
INFR	Waste water treatment plant	AzerSu / MENR	2	
INFR	Water intake points	Amelioration JSC / SWRA / MENR	1	
INFR	Water intake points for irrigation	Amelioration JSC / SWRA	1	
INFR	Water intake points for drinking water	AzerSu	1	
INFR	Potential point of pollution	MENR NEMD	2	
INFR	Solid waste disposal sites	MENR Waste	2	
INFR	Contaminated site	MENR Waste	1	
INFR	Sanitation facilities	MENR Waste / MoH	1	
INFR	Irrigated area	Amelioration JSC / MENR ACG	2	
INFR	Drainage network	AzerSu / MENR	2	
INFR	Water discharge points	AzerSu / MENR	1	
INFR	Center Hydro electricity production	AzerEnergy	2	
INFR	Aquaculture farms	MENR ACG	2	
INFR	River banks infrastructure (dike, channelling, ..)	MENR ACG	2	
INFR	River bed site of exploitation	MENR ACG	2	
IUD	VOLUMES OF WATER INTAKE USES AND DISCHARGE:			
IUD	Water intake for municipal uses	Amelioration JSC / SWRA / MENR /AzerSu	1	
IUD	Water intake for energy production	SWRA / MENR / AzerEnergy	1	
IUD	Water intake for Industries	Amelioration JSC / SWRA / MENR	1	
IUD	Water intakes for agriculture	Amelioration JSC / SWRA / MENR	1	
IUD	Water intakes for irrigation	Amelioration JSC / SWRA / MENR	1	
IUD	Volume of water intakes for intensive breeding	MoA / MENR HYDRO	1	

IUD	Volume of water intakes for betail	MoA / MENR HYDRO	1	
IUD	Water use defined in permits	MENR / Amelioration JSC	1	
IUD	Water discharge (pollution)	MENR NEMD	1	
IUD	Water discharge from municipal uses	MENR NEMD / AzerSu	1	
IUD	Water discharge from manufacturing Industries	MENR NEMD / AzerSu	1	
IUD	Water discharge from craft Villages Industries	MENR NEMD / AzerSu	1	
IUD	Water discharge from mining industries	MENR NEMD / AzerSu	1	
IUD	Water discharge from household and commercial services	MENR NEMD / AzerSu	1	
IUD	Water discharge authorisation	MENR	1	
IUD	Intrants pesticides	MENR	1	
IUD	Intrants fertilizers	MENR	1	
IUD	Manure management	MENR	1	
RISK	RISK :			
RISK	Flood management	MENR HYDRO / SWRA	2	
RISK	Flooded area	MENR HYDRO / SWRA	2	
RISK	Flood impact assessment/ Livehood facilities	MENR HYDRO	2	
RISK	Flood impact assessment/ Medical facilities	MENR HYDRO	2	
RISK	Marine flooding	MENR HYDRO	2	
RISK	Geologic risk	MENR NGS	2	
RISK	Accidental pollution	MENR NEMD	2	
RISK	Volcanic risk	MENR NGS	2	
RISK	Conflict zone	MENR ACG	2	
IND	INDICADORS :			
IND	Indicator drinking water sanitation	MENR / MoH	2	
IND	Water prices per use	MENR / AzerSu	2	
IND	Performance indicators		0	
IND	Indicator network efficiency (vol distributed/vol intake)		0	
IND	Cases of water related diseases	MoH	2	

Annex 4: Proposal of maps for RB characterisation

RBMP steps	ID Map	Name of map	SIG Layer	Type of layer
1.characterisation	0.00	Scale		
1.characterisation	0.01	Regional context	River basin	polygon
1.characterisation	0.02	National context	River basin	polygon
1.characterisation	1.01	Global context	River basin	polygon
1.characterisation	1.01	Global context	Main rivers with names	line
1.characterisation	1.01	Global context	Main lakes (>50 ha)	polygon
1.characterisation	1.01	Global context	Main towns with names	point
1.characterisation	1.01	Global context	Main roads	line
1.characterisation	1.02	River basin delineation	Sub-basins	polygon
1.characterisation	1.02	River basin delineation	River basins	polygon
1.characterisation	1.03	Hydrographic network	rivers with names	line
1.characterisation	1.03	Hydrographic network	lakes, reservoirs with names	polygon
1.characterisation	1.03	Hydrographic network	magistral canals with names	line
1.characterisation	1.04	Annual rainfall	isohyets	polygon
1.characterisation	1.04	Annual rainfall	meteorological network	point
1.characterisation	1.05	Landform: elevation	elevation	raster
1.characterisation	1.06	Landform: slopes	slopes	raster
1.characterisation	1.07	Geology	geology	polygon
1.characterisation	1.08	Hydrogeology	hydrogeology	polygon
1.characterisation	1.09	Soils	soils	polygon
1.characterisation	1.09	Erosion	erosion	polygon
1.characterisation	1.10	Wetlands	wetlands (real/potentiel, type, status)	polygon
1.characterisation	1.11	Land use	landuse (Corine landcover classes and color)	polygon or raster
1.characterisation	1.12	Administrative units	Country	polygon
1.characterisation	1.12	Administrative units	Oblast / Marz	polygon
1.characterisation	1.12	Administrative units	Rayon / District	polygon
1.characterisation	1.12	Administrative units	Cities	polygon
1.characterisation	1.12	Administrative units	Village	point
1.characterisation	1.13	Population	population (permanent and seasonal, trend from 10 or 20 years) by smaller administrative unit	polygon
1.characterisation	1.14	Industries	Industrial activities (type, volume	point

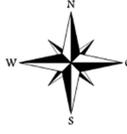
			of activity, water treatment plant)	
1.characterisation	1.14	Industries	Mines (type, current and future concessions)	polygon
1.characterisation	1.15	Waterway transports	Waterway transports (traffic)	line
1.characterisation	1.16	Agriculture	Farms	points or polygon
1.characterisation	1.16	Agriculture	Livestock (type, number, manure management, etc)	points or polygon
1.characterisation	1.16	Agriculture	Crops (type, average yields, average quantity of fertilisers and pesticides used, etc)	polygon
1.characterisation	1.16	Agriculture	Irrigated areas (irrigated crops, average volume consumed, etc)	polygon
1.characterisation	1.16	Agriculture	Drainage areas	polygon
1.characterisation	1.17	Fisheries	Fisheries and fish farms (location, species, tonnage)	point
1.characterisation	1.18	Risk	Flooded areas (frequency, duration)	polygon
1.characterisation	1.19	Miscellaneous	Touristic area	polygon
1.characterisation	1.19	Miscellaneous	Radioactive zone	polygon
1.characterisation	1.19	Miscellaneous	Conflict zone	polygon
1.characterisation	1.20	Waterbodies	rivers waterbodies	line
1.characterisation	1.20	Waterbodies	lakes waterbodies	polygon
1.characterisation	1.20	Waterbodies	Estuarian waterbodies	point or polygon
1.characterisation	1.20	Waterbodies	coastal waterbodies	polygon
1.characterisation	1.20	Waterbodies	groundwaterbodies	polygon
1.characterisation	1.21	Ecoregion	ecoregion	polygon
1.characterisation	1.22	Reference conditions stations for the surface water body types	reference conditions stations	point
2.pressures	2.01	waste water discharges	Domestic wastewater treatment plants (location, capacity, volume & quality of discharges, connected population, etc)	point
2.pressures	2.01	waste water discharges	Industrial discharges (location, capacity, volume & quality of discharges) and industrial wastewater treatment plants (location, capacity, volume & quality of discharges, connected industries, etc)	point
2.pressures	2.01	Polluted areas	Landfills (location, volume, type of wastes, legal/illegal)	point

2.pressures	2.01	Polluted areas	Polluted soils (areas, type, legal/illegal, owner)	polygon or point
2.pressures	2.02	water abstraction	Drinking water abstraction point (location, abstracted volume permitted and real, SW/GW, connected population, connected industries)	point
2.pressures	2.02	water abstraction	Industrial water abstraction point (location, abstracted volume permitted and real, SW/GW, connected industries)	point
2.pressures	2.02	water abstraction	Irrigation water abstraction point (location, abstracted volume permitted and real, SW/GW)	point
2.pressures	2.02	water abstraction	Prioritisation of area with the most unbalanced water use	
2.pressures	2.03	Hydro-morphological pressures	Dams (location, height, uses)	point
2.pressures	2.03	Hydro-morphological pressures	Hydropower plants (location, height, capacity, uses, current and future)	point
2.pressures	2.03	Hydro-morphological pressures	Dikes	line
2.pressures	2.03	Hydro-morphological pressures	Banks protection	line
2.pressures	2.03	Hydro-morphological pressures	aggregates extraction (location, volume, type)	point
2.pressures	2.03	Hydro-morphological pressures	channelling	line
2.pressures	2.03	Hydro-morphological pressures	Dry river bed	line
2.pressures	2.03	Hydro-morphological pressures	alien species proliferation (location, species, management, etc)	point or polygon
3.protected areas	3.01	Protected areas	drinking water abstraction protection area	polygon
3.protected areas	3.02	Protected areas	economically significant species: fish (species, quantity)	point
3.protected areas	3.02	Protected areas	economically significant species:	point

			shell (species, quantity)	
3.protected areas	3.03	Protected areas	bathing sites (fresh and coastal water, frequentation level)	point
3.protected areas	3.04	Protected areas	vulnerable zones (nitrates from agriculture)	polygon
3.protected areas	3.05	Protected areas	sensitive areas (nutrients from waste water treatment plants)	polygon
3.protected areas	3.06	Protected areas	conservation and/or protection (habitats, birds), Emerald network, outstanding ecosystems	point or polygon
4.monitoring	4.1	Monitoring network	Surface water quality sampling sites (responsible, frequency, parameters)	point
4.monitoring	4.1	Monitoring network	Groundwater quality sampling sites (responsible, frequency, parameters)	point
4.monitoring	4.1	Monitoring network	Hydrological monitoring stations (responsible, frequency)	point
4.monitoring	4.1	Monitoring network	Piezometric monitoring stations (responsible, frequency)	point
4.monitoring	4.2	Monitoring results (surface water quality)	organic matter	point
4.monitoring	4.2	Monitoring results (surface water quality)	total nitrogen	point
4.monitoring	4.2	Monitoring results (surface water quality)	total phosphorus	point
4.monitoring	4.2	Monitoring results (surface water quality)	...	point
4.monitoring	4.3	Monitoring results (surface water quality)	ecological status	point
4.monitoring	4.3	Monitoring results (surface water quality)	chemical status	point
4.monitoring	4.3	Monitoring results (surface water quality)	global status	point
4.monitoring	4.3	Monitoring results (surface water quantity)	Characteristic flows	
4.monitoring	4.4	Monitoring results	nitrates	point

		(groundwater quality)		
4.monitoring	4.4	Monitoring results (groundwater quality)	pesticides	point
4.monitoring	4.4	Monitoring results (groundwater quality)	...	point
4.monitoring	4.5	Monitoring results (groundwater quality)	chemical status	point
4.monitoring	4.5	Monitoring results (groundwater quantity)	quantitative status	point
4.monitoring	4.5	Monitoring results (groundwater quality)	global status	point
5.environmental objectives	5.1	Risk of failure to meet the good status	Rivers waterbodies at risk	line
5.environmental objectives	5.1	Risk of failure to meet the good status	Lakes waterbodies at risk	polygon
5.environmental objectives	5.1	Risk of failure to meet the good status	Estuarian waterbodies at risk	polygon or point
5.environmental objectives	5.1	Risk of failure to meet the good status	Coastal waterbodies at risk	polygon
5.environmental objectives	5.1	Risk of failure to meet the good status	Groundwater bodies at risk	polygon
5.environmental objectives	5.2	Environmental objectives (EO)	EO for rivers waterbodies	line
5.environmental objectives	5.2	Environmental objectives (EO)	EO for lakes waterbodies	polygon
5.environmental objectives	5.2	Environmental objectives (EO)	EO for estuarian waterbodies	polygon or point
5.environmental objectives	5.2	Environmental objectives (EO)	EO for coastal waterbodies	polygon
5.environmental objectives	5.2	Environmental objectives (EO)	EO for groundwater bodies	polygon
6.economic analysis	6.1	Domestic water price	Domestic water prices by smaller administrative unit	polygon
7.programme of measures	7.1	Programme of measures	measures implementation	point, polygon, line

Annex 5: Specimen of templates for RB maps for RB

TITLE											
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Thematic symbology	Background layer legend										
Location Map	Data source										
	Name of the data source										
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center; padding: 2px;">Systeme Coordination Reference</td> </tr> <tr> <td style="text-align: center; padding: 2px;">WGS 84</td> </tr> </table>	Systeme Coordination Reference	WGS 84	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center; padding: 2px;">  "European Union Water Initiative plus for Eastern Partnership Countries"  </td> </tr> <tr> <td style="text-align: center; padding: 2px;">Name of organisation</td> </tr> <tr> <td style="text-align: center; padding: 2px;">Name of the map</td> </tr> <tr> <td style="padding: 2px;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 2px;">Elaboration, revision, approval</td> <td style="width: 50%; padding: 2px;">Path</td> </tr> <tr> <td style="padding: 2px;">Date</td> <td style="padding: 2px;">Scale</td> </tr> </table> </td> </tr> </table>	 "European Union Water Initiative plus for Eastern Partnership Countries" 	Name of organisation	Name of the map	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 2px;">Elaboration, revision, approval</td> <td style="width: 50%; padding: 2px;">Path</td> </tr> <tr> <td style="padding: 2px;">Date</td> <td style="padding: 2px;">Scale</td> </tr> </table>	Elaboration, revision, approval	Path	Date	Scale
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<p style="font-size: small;">Activity implemented by Umweltbundesamt, Austria & International Office for Water, France</p> <div style="display: flex; justify-content: space-between; align-items: center;">   </div>											