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EU4 Green Recovery East (700002623)
Recovery through a Circular Economy and Pollution Reduction in the Eastern Partnership countries

TERMS OF REFERENCE

Elaboration of Preliminary Flood Risk Management Plan in Debed River Basin of Armenia

1. Background

The EU4Green Recovery East (EU4GRE) is a regional Programme funded by the European Union to support Eastern Partnership countries (Armenia, Azerbaijan, Georgia, Moldova, and Ukraine) in transitioning to a circular economy, improving water management, strengthening environmental data systems, aligning with the EU environmental acquis, and enhancing cross-border cooperation.

EU4GRE Programme builds on the results of a decade of EU support for better water management and green economy adoption, and is the successor to the green economy, water, and environmental data pillars of the regional EU4Environment Programme.

It is implemented by a consortium of EU Member State agencies and international organisations, including the Environment Agency Austria (UBA), leader of the consortium, Expertise France, the International Office for Water (OiEau), the Organisation for Economic Co-operation and Development (OECD), the United Nations Economic Commission for Europe (UNECE) and the United Nations Industrial Development Organisation (UNIDO).

The five components of the EU4GRE Programme are the following:

- Promote circular economy and resource efficiency;
- Protect water resources and reduce pollution;
- Align with EU environment standards;
- Strengthen environment data and digitization;
- Enhance transboundary cooperation on environmental issues.

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2. Purpose

In 2017 Armenia signed a Comprehensive and Enhanced Partnership Agreement (CEPA) with the EU, which contains ambitious commitments to reform its policies and states the need to develop and strengthen cooperation between Armenia and EU. CEPA is expected to bring benefits through improved public health, preserved natural resources, increased economic and environmental efficiency, as well as use of modern, cleaner technologies contributing to more sustainable production patterns.

In the field of environment, the cooperation with the EU aims at preserving, protecting, improving, and rehabilitating the quality of the environment, sustainable utilization of natural resources and promoting measures at international level to deal with regional or global environmental problems, including in the areas of environmental governance; air quality, water quality and resource management, including flood risk management, water scarcity and droughts; waste management; nature protection, including forestry and conservation of biological diversity; industrial pollution and industrial hazards; and chemicals management.

In the field of environment and climate action and in particular in the area of water quality and resources management, the CEPA includes also **Directive 2007/60/EC on the assessment and management of flood risks (EU Floods Directive)**. The obligations particularly relate to the following:

- Undertaking preliminary flood assessment (Articles 4 and 5)
- Preparation of flood hazard maps and flood risk maps (Article 6)
- Establishment of flood risk management plans (Article 7)

In 2020-2021 the Belgian Walloon Region Authority SOFINEX (Société de financement de l'exportation et de l'internationalisation des entreprises Wallonnes) financed a feasibility study of the Flood Hazard Mapping in the Aghstev River basin of Armenia, to help the Ministry of Environment and other authorities to demonstrate the approach and principles of the EU Floods Directive at pilot river basin level and develop methodology of flood hazard mapping in Armenia in accordance with the requirements of the EU Floods Directive. So far, this has been the only substantial work in this direction implemented in Armenia after signing the CEPA. The final report, entitled "Feasibility Study of the Flood Hazard Mapping in the Aghstev River Basin - Armenia" (SHER Ingenieurs-Conseils S.A., January, 2021) is presented in Annex A of this TOR.

After this Study, the Armenian government approved two important legal texts regarding floods protection. In 25 July 2024, was issued the Government Decision No. 1158 validating the requirements and content of flood hazards and flood prevention risk maps and in 18 April 2025, was issued the Law No. HO-89-N on Risk Management of Disasters and Protection of the Population.

The objective of this assignment is to help the assist Armenian authorities and the EU4GRE programme in piloting the approach of the EU Floods Directive on Debed River basin, in line with the obligations undertaken within the CEPA, and taking into consideration the methodology elaborated within the Feasibility Study of the Flood Hazard Mapping in the Aghstev River Basin. In that respect, the contractor will carry a series of tasks towards the production of a Preliminary Flood Risk Management Plan in Debed River Basin of Armenia.

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3. Financing

European Union

4. Procedure

EF Procurement rules

5. Contracting Authority

International Office for Water (OiEau) – France

6. Nature of contract

Lumpsum Service contract

7. Time period of implementation

March 2026 - September 2027

8. Maximum contract value

35,000 EUR

9. Scope of work and deliverables

The EU funded Programme for the Prevention, Preparedness and Response to natural and man-made disasters in the ENPI East Region (PPDR East, 2012) has identified Debed River basin of Armenia (with an area of 3892.1 km²) as one of the two (out of 14) hydrological river basins with “extreme” level of flood hazard. The severe floods occurred in May 2024 in Debed basin caused significant damage in over 15 settlements of the basin, the combined population of which exceeds 30,000 people. The floods claimed four lives, destroyed farms and agricultural assets in local villages, and swept away large numbers of livestock. In total, 20 bridges were damaged or collapsed, disrupting critical infrastructure and connections between the affected settlements.

Thus, the Armenian authorities have requested the EU4GRE Programme to pilot the approaches and principles of the EU Floods Directive. This Service contract will directly contribute by elaborating the following key elements in Debed River basin of Armenia:

1. Prepare preliminary flood assessment
2. Prepare flood hazard maps;
3. Prepare flood risk maps;
4. Establish flood risk management plans.

The products should contemplate the requirements of the EU Flood Directive. It should be noted however, that there are significant data limitations, and the expected outcome of the assignment is introduction of the elements of the above-mentioned components to the extent possible. This

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would include, among other things, identification of gaps in existing data and information, which will serve as basis for subsequent recommendations to the authorities towards development of fully EU compliant flood risk management plans at a later stage.

The key six deliverables of the assignment include the following:

Deliverable 1: Inception report

The Inception report shall be prepared within two weeks of commencement of the assignment and shall include the proposed methodology for undertaking the assignment, implementation timeline and detailed workplan. As part of the Inception report, the Consultant is expected also to propose a methodology for the workshop with local stakeholders mentioned in Deliverable 4.

Deliverable 2: Preliminary Flood Risk Assessment

The Preliminary Flood Risk Assessment (PFRA) report shall be prepared within 12 weeks of commencement of the assignment.

PFRA is an initial screening exercise that aims to review historically significant flood events and to assess the potential adverse consequences of future floods. The aim of PFRA is to determine Areas with Potential Significant Flood Risk (APSFR). The PFRA also constitutes the background of the further steps of the implementation of flood Directive: flood hazard and flood risk maps which are developed for APSFR.

The main steps for PFRA are:

- Collection of information referring to historical floods
- Description of significant past floods
- Assessment of the potential adverse consequences of future floods
- Elaboration of PFRA and identification of Areas with potential significant flood risk

As recommended by the Feasibility Study in Aghstev River Basin, collaboration with national disaster observatories and local rescue services shall be organized to reinforce data transfer and improve events documentation.

Deliverable 3: Flood hazard maps

The Flood hazard maps report shall be prepared within 24 weeks of commencement of the assignment.

Flood hazard maps and flood risk maps must be developed in one of the areas with Potential Significant Flood Risk (APSFR) defined in deliverable 2. This area (designated as "pilot modelling area") will be selected by the coordination group mentioned in Point 10, taking into account the availability of as much data as possible.

This deliverable should include elements for preparation of flood hazard maps and flood risk maps, to the extent possible, taking into consideration the limitations in existing information and data required.

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More specifically, the flood hazard mapping is the process of identifying areas at risk of flooding on a map. They provide a good foundation for efficient flood-risk management, and are used while elaborating flood risk management plans, preventing flood damages, in land use planning, rescue operations, etc.

In the pilot modelling area, flood hazard maps shall be produced for three scenarios mentioned in the Article 6 of the UE Flood Directive (Low, medium and high probability), using hydrological and hydraulic modelling. Scenarios must include potential default of existing flood protections.

Data acquisition in pilot modelling area should be very limited in the context of this study, priority being given to the use of pre-existing data. As an example, a digital terrain modelling (DTM) realized for the ADB study (resolution of 8 cm, available between Dzoraget and Georgia Border) and all other data used by this previous modelling could be provided to the consultant in case this area would be selected as pilot modelling area.

The consultant shall prepare all the datasets and GIS layers for mapping and modelling activities, in conformity with data management activities realized by OiEau under EU4GreenRecovery East (metadata, API and web mapping services under development).

The hydraulic modelling shall be carried out using open-source software allowing irregular geometries, unstructured meshes and transient phenomena. It shall be developed on a shared platform that ensures full accessibility and reusability of all configuration elements, input datasets, and tools by the Ministry of Environment of Armenia and its Hydrometeorology and Monitoring Centre, after completion of the contract. This should enable the execution of additional simulations in the future by the beneficiaries. To this end, a shared repository (e.g. FTP or GitLab) shall be used for storing configuration files and input datasets shall be linked to an accessible platform for running the modelling scenarios. Within the scope of this contract, the Contractor could be granted free access to modelling platforms with Telemac opensource software, including technical support on the use of it.

Flood modelling should consider future climate scenarios, referencing projections and climatic model results.

Finally, as recommended by the Feasibility Study in Aghstev River Basin, cross-validation of flood extents with hydrogeomorphological methods and satellite imagery shall be carried out.

Deliverable 4: Flood risk maps

The Flood risk maps report shall be prepared within 36 weeks of commencement of the assignment.

First, vulnerability maps shall be prepared, indicating potential impacts and consequences of floods on human activity under different probabilities of occurrences in the pilot modelling area.

Assessment of the impact of floods may be expressed in terms of the following:

- indicative number of inhabitants potentially affected;
- type of economy activities of the area potentially affected;
- and other information, considered useful.

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As needed, the consultant shall conduct additional in-field surveys including to identify vulnerable infrastructure.

Surfaces of vulnerable activities shall be digitalized using GIS, not just point-format data.

Under this contract, as recommended by the Feasibility Study in Aghstev River Basin, collaborations shall be developed with institutions holding data such as the cadastral administration, emergency services, etc. in order to collect the necessary data or organize its production for future studies. Contacts should be done by the consultant, with the possibility of support from the inter-ministerial coordination group as needed.

The Flood risk map is the overlay of the flood hazard map with human activities vulnerability maps. Flood risk maps shall be elaborated for the pilot modelling area.

In the pilot modelling area, a workshop shall be organized by the consultant with local stakeholders (government, local communities and civil society) to present the Flood risk map and collect feedback. If needed, the Flood risk maps shall be updated to include the relevant feedback received during the workshops.

Deliverable 5: Establish preliminary flood risk management plan

The preliminary flood risk management plan report shall be prepared within 48 weeks of commencement of the assignment.

Preliminary Flood Risk Management Plan should focus on the pilot modelling area, and aim at coordinating the following:

- establishment of appropriate objectives for the management of flood risks, focusing on the reduction of potential adverse consequences of flooding for human health, economic activities, the environment and cultural heritage; and
- elaboration of a program of actions for achieving the above-mentioned objectives, taking into account the costs and benefits, flood extent and flood conveyance routes, the environmental objectives, soil and water management, spatial planning and land use aspects.

Actions should include legal amendments, regulatory measures, governance arrangement, field/data campaigns, mapping updates, stakeholder engagement, capacity building, public information, awareness-raising, early warning system, resilience building and nature-based solutions (e.g., restoration of floodplains).

As a suggestion, actions should be classified in five categories / families of "key objectives". The key objectives 1, 2, 3 are operational ones (the "three P") and the two last are transversal ones:

1. Increase the safety of people - Protection
2. Control the cost of damage - Prevention
3. Improve resilience - Preparedness
4. Develop knowledge on flood hazard and flood risks
5. Define a governance for the implementation of the FRMP

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The deliverable shall include a roadmap for the implementation of main actions.

Deliverable 6: Recommendations

The recommendations report shall be prepared within 60 weeks of commencement of the assignment.

Recommendations should be derived taking into consideration the key findings while undertaking the assignment, identified data and information gaps and subsequent proposals to decision makers on how to fill in the identified gaps and deficiencies.

The expected outcome should include demonstration of the key elements of elaboration of Flood Risk Management Plans in the entire Debed River basin, taking into consideration the data limitations, and include recommendations.

The report should include summary recommendations for policy makers.

10. Indicative calendar

Deliverable	Indicative deadline
1. Inception report	April 10, 2026
2. Preliminary Flood Risk Assessment	June 19, 2026
3. Flood hazard mapping	September 11, 2026
4. Flood risk mapping	December 04, 2026
5. Preliminary flood risk management plan	February 26, 2027
6. Recommendations	May 21, 2027

11. Coordination group and coordination meetings

The coordination of the study will be realized by a dedicated inter-ministerial coordination group involving representative of key Armenian institutions with responsibilities related to flood risk management:

- the Ministry of Environment,
- the Ministry of Territorial Administration and Infrastructures, and
- the Ministry of Internal Affairs

A coordination meeting will be organized by the EU4GRE programme after delivery of each deliverable.

The consultant will be responsible for presenting each deliverable in these coordination meetings, producing an adequate PowerPoint presentation in both Armenian and English language.

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12. Format of deliverables

All the documents shall be produced in English language. Deliverables 5 (Preliminary flood risk management plan) and 6 (Recommendations) shall be also produced in Armenian language, as well as PPT to be presented during the meetings.

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

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

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

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

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

13. Payment modalities

- Payment will be made upon receipt of an invoice and approval of deliverable by the EU4GRE manager.
- Payment will be transferred via bank wire to the EUR account specified in the offer.

14. 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 and the project representative) and the beneficiaries (Ministry of Environment, Ministry of Territorial Administration and Infrastructures, Ministry of Interior, Lori Regional Administration).

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.

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15. Participation to the tender

Interested persons are invited to inquire the tender dossier by email from

- Ms. Ilke CICEKOGLU, project assistant: Email address: i.cicekoglu@oieau.fr
- Mr. Patrick LAIGNEAU, Component Leader: Email address: p.laigneau@oieau.fr

The tender file includes the below mentioned documents:

- Terms of References (0)
- Service Contract Notice (A)
- Instructions to tenderers (B)
- Tender Submission Form (B1)
- Legal Identification Form (B2)
- Declaration of Honour (B3)
- Financial Identification form (B4)
- Financial offer form (B5)
- Technical offer with proposed methodology and implementation schedule
- CVs of the proposed key experts.

**Deadline for submission of the technical and financial offer is
March, 13th, 18:00 CET.**

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