



**Environmental Protection of
International River Basins Project**

Contract No. 2011/279-666



This project is funded by
The European Union

A project implemented by a Consortium
led by Hulla & Co. Human Dynamics KG

Pilot Project Concept

**Implementation of EU Flood Directive in Zayamchay River sub-basin (Central Kura Basin District)
on the territory of Azerbaijan**

I. Background and Objectives

According to the EU Directive on the assessment and management of flood risks [2007/60/EC] (often referred to as the 'Floods' Directive) the first milestone in its implementation at the basin-wide level is required to undertake a preliminary flood risk assessment (PFRA) in accordance with the Article 4 and identification of those areas for which it has been concluded that potential significant flood risks exist or might be considered likely to occur (so called Areas of Potential Significant Flood Risk in accordance with the Article 5 of the Directive).

At the level of the river basin district, or unit of management, Floods Directive requires preparation of flood hazard maps and flood risk maps, at the most appropriate scale for the areas identified under Article 5(1) as following:

- (i) map of hazard and flooding scenarios;
- (ii) map on risk and population;
- (iii) map on risk and economic activity;
- (iv) map on risk and IPPC installations and
- (v) maps on WFD protected areas.

Finally Directive requires preparation of Flood Risk Management Plans.

The implementation of the Floods Directive in the Central Kura River Basin District can be looked upon as a follow-up to the action plan of Azerbaijan within the program of cooperation with EU, where Azerbaijan committed itself to make all efforts to implement the EU directives, including Floods Directive. Flooding is a major issue in the pilot project basin and a systematic approach to flood risk and flood hazard needs to be developed. This study will be the first in Azerbaijan to be carried out in compliance with the Floods Directive and to be undertaken in conjunction with the development of a compliant RBMP for the pilot project.

The project will be implemented in the Zayamchay River Sub-basin of the Central Kura Basin District where seasonal and unexpected flooding events impact human health, the environment, cultural heritage and economic activities of residential areas in Gadabey, Tovuz and Shamkir municipalities.

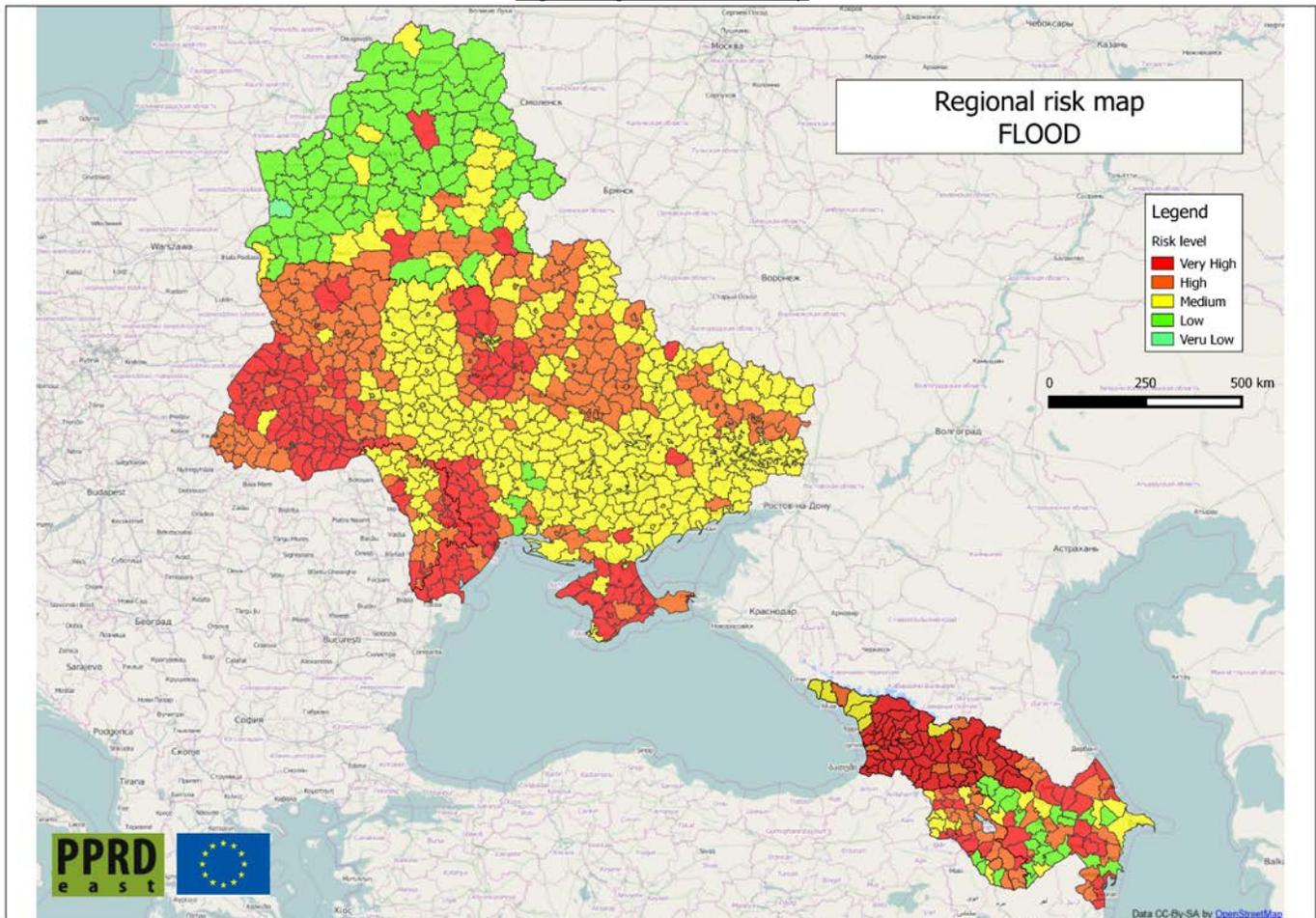
The main objective of the pilot project will be assisting to the key project beneficiary institutions: Ministry of Ecology and Natural Resources, State Water Agency of the Ministry of Emergency Situations, Amelioration JSC, Azersu JSC, Local Authorities in the pilot river basin (sub-basin) through the implementation of EU Flood Directive in the Zayamchay River Sub-basin that will contribute to the implementation of the selected Programme of Measures (PoM) for the Central Kura RBMP through the EU Flood Directive .

Work will be carried in below 3 steps:

- First step: Preliminary Flood Risk Assessment, which will consider impacts on human health and life, the environment, cultural heritage and economic activities;
- Second step: Risk Assessment: information in this assessment will be used to identify the areas at significant risk which will then be modeled in order to produce flood hazard and risk maps. These maps will include the details on flood extent, depth and level for three risk scenarios (high, medium and low probability);
- Third step: Flood Risk Management Plans: these are meant to indicate to policy makers, developers, and the public the nature of the risk and the measures proposed to manage these risks. The management plans are to focus on prevention, protection and preparedness. Also, flood risk management plans shall take into account the relevant environmental objectives of Article 4 of Directive 2000/60/EC.

The work shall be carried out in accordance with the guidelines prepared by the EU Programme on Prevention, Preparedness and Response to man-made and natural Disasters in the ENPI East Region (PPRD East), see annex 1, and all tasks should be coordinated with the project activities of PPRD East.

Fig 1. Regional Flood map



The Pilot Project will build on the results of the project deliverables, particularly on the proposed **Programme of Measures** being developed within the draft **River Basin Management Plan for the Central Kura river basin on the territory of Azerbaijan**. The pilot project will contribute to the actual implementation of one of the important requirements of the EU Water Framework Directive through the developed Central Kura RBMP.

II. Project Beneficiaries and Stakeholders

Main project beneficiaries will be:

- Ministry of Ecology and Natural Resources of Azerbaijan Republic
- State Water Agency of Ministry of Emergency Situations,
- Amelioration JSC,
- Azersu JSC,
- Local Authorities in the pilot river basin (sub-basin)

The selected contractor should cooperate closely with the below project stakeholders:

- Scientific Research Hydrometeorology Institute of MENR
- Institute of Geography of National Academy of Science
- Geography faculty of Baku State University
- NGO International Hydrological Program Association
- Local NGOs and media

III. Project Activities

Activity 1. PRELIMINARY FLOOD ASSESSMENT IN ZAYAMCHAY RIVER SUB-BASIN

According to Article 4 of FD based on available or readily derivable information (records and studies on long term developments, including impacts of climate change on the occurrence of floods, etc.) there will be undertaken Preliminary Flood Assessment to provide an assessment of potential risks. The assessment will include the following:

- (a) maps of the river basin district at the appropriate scale including the borders of the river basins, sub-basins and, where existing, coastal areas, showing topography and land use;
- (b) a description of the floods which have occurred in the past and which had significant adverse impacts on human health, the environment, cultural heritage and economic activity and for which the likelihood of similar future events is still relevant, including their flood extent and conveyance routes and an assessment of the adverse impacts they have entailed;
- (c) a description of the significant floods which have occurred in the past, where significant adverse consequences of similar future events might be envisaged; and, depending on the specific needs, it shall include;
- (d) an assessment of the potential adverse consequences of future floods for human health, the environment, cultural heritage and economic activity, taking into account as far as possible issues such as the topography, the position of watercourses and their general hydrological and geomorphological characteristics, including floodplains as natural retention areas, the effectiveness of existing manmade flood defense infrastructures, the position of populated areas, areas of economic activity and long-term developments including impacts of climate change on the occurrence of floods.

Activity 2. IDENTIFICATION OF FLOOD HAZARD AND FLOOD RISKS AREAS AND PREPARATION OF FLOOD HAZARD MAPS AND FLOOD RISK MAPS

According to Article 5 on the basis of a preliminary flood risk assessment as referred to in Article 4, will be identified those areas for which potential significant flood risks exist or might be considered likely to occur.

According to Article 6 will be prepared flood hazard maps and flood risk maps, at the most appropriate scale for the areas identified under Article 5(1).

Flood hazard maps will cover the geographical areas which could be flooded according to the following scenarios:

- (a) floods with a low probability, or extreme event scenarios;
- (b) floods with a medium probability (likely return period ≥ 100 years);
- (c) floods with a high probability, where appropriate.

For each scenario referred to in paragraph 3 of Article 6 the following elements shall be shown:

- (a) the flood extent;
- (b) water depths or water level, as appropriate;
- (c) where appropriate, the flow velocity or the relevant water flow.

Flood risk maps shall show the potential adverse consequences associated with flood scenarios referred to in paragraph 3 and expressed in terms of the following:

- (a) the indicative number of inhabitants potentially affected;
- (b) type of economic activity of the area potentially affected;
- (c) installations as referred to in Annex I to Council Directive 96/61/EC of 24 September 1996 concerning integrated pollution prevention and control (1) which might cause accidental pollution in case of flooding and potentially affected protected areas identified in Annex IV(1)(i), (iii) and (v) to Directive 2000/60/EC;
- (d) other useful information such as the indication of areas where floods with a high content of transported sediments and debris floods can occur and information on other significant sources of pollution.

Activity 3. FLOOD RISK MANAGEMENT PLANS IN ZAYAMCHAY RIVER SUB-BASIN

According to the Article 7 of the EU FD following work will be done:

1. On the basis of the maps referred to in Article 6, shall be established flood risk management plans coordinated at the level of the Zayamchay River Sub-basin for the areas identified under Article 5(1) and the areas covered by Article 13(1)(b) in accordance with paragraphs 2 and 3 of this Article.
2. Will be established appropriate objectives for the management of flood risks for the areas identified under Article 5(1) and the areas covered by Article 13(1)(b), focusing on the reduction of potential adverse consequences of flooding for human health, the environment, cultural heritage and economic activity, and, if considered appropriate, on nonstructural initiatives and/or on the reduction of the likelihood of flooding.
3. Flood risk management plans will include measures for achieving the objectives established in accordance with paragraph 2 and will include the components set out in Part A of the Annex. Flood risk management plans will take into account relevant aspects such as costs and benefits, flood extent and flood conveyance

routes and areas which have the potential to retain flood water, such as natural floodplains, the environmental objectives of Article 4 of Directive 2000/60/EC, soil and water management, spatial planning, land use, nature conservation, navigation and port infrastructure.

4. Flood risk management plans will address all aspects of flood risk management focusing on prevention, protection, preparedness, including flood forecasts and early warning systems and taking into account the characteristics of the particular river basin or sub-basin. Flood risk management plans will also include the promotion of sustainable land use practices, improvement of water retention as well as the controlled flooding of certain areas in the case of a flood event.

Activity 4. PUBLIC PARTICIPATION

According to Article 10 the preliminary flood risk assessment, the flood hazard maps, the flood risk maps and the flood risk management plans will be made available to the public for their comments and considerations. Active involvement of interested parties in the review and updating of the flood risk management plans referred to in Chapter IV will be encouraged.

Additionally, a booklet with main project results will be prepared (in English and Azeri languages) and distributed to the stakeholders and general public and a workshop to be conducted in pilot region is foreseen.

A special lecture will be prepared and arranged for students of Baku State University on implementation of FD in pilot region and the project results will be included to the study program of magistrates of Baku State University.

IV. Deliverables and Outputs

Deliverable 1: PRELIMINARY FLOOD ASSESSMENT IN ZAYAMCHAY RIVER SUB-BASIN

Deliverable 2: IDENTIFICATION OF FLOOD HAZARD AND FLOOD RISKS AREAS AND PREPARATION OF FLOOD HAZARD MAPS AND FLOOD RISK MAPS

Deliverable 3: FLOOD RISK MANAGEMENT PLANS FOR ZAYAMCHAY RIVER SUB-BASIN

Deliverable 4: PUBLIC PARTICIPATION (INCLUDING PUBLIC CONSULTATION WORKSHOP IN THE CENTRAL KURA BASIN DISTRICT) AND FINAL REPORT

V. Work Programme and Outputs

Duration of the project will be 11 months. The expected commencement date for implementation of the assignment is 1st November, 2015, and the completion date – 30th September, 2016.

Summary of the work schedule and deliverables for flood hazard and flood risk maps establishment for the Zayamchay Sub-basin is presented in following table:

Deliverable	Language of deliverable	Start date	Due date for draft version	Finalization
<u>Deliverable 1:</u> Inception report, and preliminary assessment	Azeri / English	1.11.2015	15.11.2015	30.11.2015
<u>Deliverable 2:</u> Flood Risk and Hazard Maps	Azeri / English	15.11 .2015	20.04.2016	30.04.2016

<u>Deliverable 3: Flood Management Plan</u>	Azeri / English	15.04.2016	15.07.2016	31.07.2016
<u>Deliverable 4: Public Consultation and Final Report</u>	Azari / English	15.07.2016	15.09.2016	30.09.2016

The contractor shall hold following consultation meetings:

- First consultation meeting – due date 15.04.2016
- Second consultation meeting – due date 15.07.2016

VI. Management Arrangements and budget

The contractor shall report the EPIRB Team leader, regarding overall deliverables and EPIRB Country Water Management Expert (CWME), for all day-to-day management issues.

In implementation of the above deliverables, national flood maps development teams will be established with the representatives from the beneficiary, the contractor and the EPIRB CWME. The EPIRB CWME will ensure coordination between the EPIRB project team and the REC public involvement strategy team.

The flood maps development teams will have collective responsibility for data collection and provision and with provide day-to-day project guidance and coordination. The draft deliverables reviewed by the beneficiary and the project team members and final approval of deliverables will be given by the EPIRB Team Leader.

Drafting, reporting and implementation of above deliverables will be coordinated, advised and monitored by the EPIRB project team, led by Team Leader. In addition, the target and other beneficiary institutions, as well as members of the National Coordination Committee (NCC), Regional Steering Committee of the Natural Resources and Environmental protection will take an active part in collecting data, reviewing of deliverables.

Payments shall be made on approval of deliverables and divided into three (3) tranches given below:

Tranche 1: 20% on acceptance of deliverable 1 and 2.

Tranche 2: 40% on acceptance of deliverable 3.

Tranche 3: 40% on acceptance of deliverable 4.

VII. Qualifications and requirements to the service provider/contractor

- Experience in flood risk assessment and mapping
- Profound experience in basin planning and demonstrated working relationship with the main beneficiary
- Demonstrated knowledge of WFD and IWRM principles and experience of implementing these principles in the country/region
- Existence of qualified staff able to fulfill above mentioned tasks and demonstrated commitment to involve other national/international professional consultants

The assignment shall be implemented by a company or consortia of companies that are NOT representing the project beneficiaries.