TRANS-BOUNDARY COOPERATION IN GEORGIA AND AZERBAIJAN - KURA RIVER BASIN: SHARING COSTS AND BENEFITS

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Azerbaijan and Georgia have shown commitment to implement the principles of the **EU Water Framework Directive**

The accelerating **economic development** in the recent years puts additional pressure on the environment

**Trans-boundary cooperation** in the Kura basin remains problematic

**A bilateral agreement** between Azerbaijan and Georgia on the Kura is supposed to improve cooperation considerably
Transboundary water issues include:

- **Downstream water pollution** from untreated and partly-treated wastewater effluent from the Georgian Gardabani WWTPs sited close to the border.

- **Non-point source pollution** from farming and pollution from residential areas in Georgia contaminates Lake Jandari, a water body shared by the two countries and used for fishing and for the abstraction of irrigation water.

- The Kura River Basin on both sides of the border is subject to **frequent flooding** related to poor water management (catchment degradation, deforestation, soil erosion, waste dumping, sedimentation, etc.) both in Georgia and Azerbaijan.

- **Unregulated abstraction of water** for irrigation has led to periodically low river and lake levels in both countries. Water levels in the shared Lake Jandari have recently been declining.
MAIN WATER MANAGEMENT ISSUES

GEORGIA

Deforestation → Increased Erosion

Hydro-morphological alterations of the water body to be investigated

Floods during seasonal precipitation peaks

Trans-boundary pressures

AZERBAIJAN

Erosion on the Azeri side to be investigated

Hydro-morphological alterations of the water body to be investigated

Floods during seasonal precipitation peaks

Trans-boundary impacts

Mingachevir reservoir
ENABLING LEGAL FRAMEWORK FOR COSTS-BENEFITS SHARING AND KEY FACTORS

• Agreement on Cooperation in the Protection of the Environment between Azerbaijan and Georgia (1997), which includes some aspects of the use of water in the Kura River and Jandari Lake provides a frame for costs-&benefits sharing.

Different policy solutions are appropriate to meet these challenges. The key factors in each case are:

• the size of the costs and benefits of action versus inaction, for each country

• benefits of joint or coordinated action, compared with independent actions

• the comparative costs of actions in the respective countries

• the existence of feasible methods of compensation, from the other country partner, or from international sources.
# Kura floods: expected potential gross benefits

<table>
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<tr>
<th>Typologies of benefits</th>
<th>Associated benefits</th>
<th>Data requirements (both countries)</th>
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<tbody>
<tr>
<td>Benefits from improved flood management</td>
<td>Avoided costs of flooding</td>
<td>Record of past flooding events:</td>
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<tr>
<td></td>
<td></td>
<td>• Frequency</td>
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<td></td>
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<td>• Intensity</td>
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<td>Costs of past flood events, in terms of:</td>
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<td></td>
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<td>• Human lives</td>
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<td></td>
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<td>• Damages to the built environment (including infrastructures)</td>
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<td>• Damages to the agricultural sector (to crops and related losses of agricultural impacts)</td>
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<td>• Damages to the industrial sector</td>
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<td>Estimate of the costs which could be avoided through early warning</td>
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DISTRIBUTION OF FLOOD HAZARD

The areas with the highest flooding risk are located in the Tbilisi area and all along the river until the border.

Following the operation of Mingachevir Reservoir, flooding events were only observed in downstream Kura below the Aras River connection.

Source: AZ-MENR (2010).
THE COSTS OF A JOINT EARLY WARNING SYSTEM

- 5 Meteorological Stations: 189,000 USD
- 20 Meteorological posts: 378,000 USD
- 10 Hydrological posts: 151,000 USD
- IT equipment: 15,000 USD
- International consultants: 10,000 USD

Total cost: 743,000 USD
Comparison of benefits and cost figures

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<tr>
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<th>Georgia</th>
<th>Azerbaijan</th>
<th>Total</th>
</tr>
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<tbody>
<tr>
<td><strong>Costs</strong> Mln USD</td>
<td>0.74</td>
<td>0.74</td>
<td>1.48</td>
</tr>
<tr>
<td><strong>Benefits</strong> Mln USD</td>
<td>11.52</td>
<td>11.52</td>
<td>23.03</td>
</tr>
</tbody>
</table>

• Even taking into account the inadequacy of basic data supporting these estimates, there is a large disproportion between the costs and benefits of setting up a joint early warning system: the estimated benefits outweigh the expected investment costs by more than 15 times.

• Besides the costs of setting-up a joint early-warning system, the costs of coordinated dam management in cases of heavy rain should also be investigated.
Using economic instruments for water management in a transboundary context has specific challenges, additional to those arising in the national context.

The benefits of investments and policies, though real, may not arise in monetary form, hence financial recuperation is not possible (e.g. restoration of ecological status, recreational benefits).

Benefits may be joint, but may disproportionately favour one party (e.g. reduced flood risk throughout a river basin, lower river and lake pollution, restoration of lake levels).

Joint benefits are likely to require coordinated actions by both parties to be effective or to produce optimal results (e.g. action to reduce pollution).

The likelihood of joint benefits does not guarantee cooperation. There is still some scope for deals between the two countries, not necessarily restricted to water but including all aspects of river basin management (e.g. hydropower and forestry).
OECD analysis focused on flooding in the Kura Basin and reducing pollution in the Kura River downstream of the Gardabani WWTP. Specifically, the following options could be proposed for further examination:

- a form of PES in which the downstream riparian would compensate the upstream riparian for the costs of flood prevention and pollution control
- joint finance of a flood early-warning system for the Kura River Basin
- joint funding of the Gardabani WWTP upgrade

A precondition for any actions would be support for capacity building and data collection and analysis relating to the hydrology of the rivers and lakes concerned.
Challenges revealed by the study

Need for follow up

- Lack of qualified personnel (capacity building)
- Non-existence of established protocol for information exchange
- The development of the energy and agricultural sectors could create conflicts
- Development and implementation of joint basin management plans, projects and measures
- Lack of information to support economic decision making

Need for Bilateral agreement and establishment of Bilateral Commission