Strengthening the economic and financial dimension of Integrated Water Resources Management

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Context of the project

In 2006, Armenia, Azerbaijan and Georgia signed the European Neighbourhood Policy Action Plans with the European Union (EU)

Under these plans, each country is committed ”to identify possibilities with neighbouring countries for enhanced regional co-operation, in particular with regard to water issues”.

The three countries are also committed to the implementation of the EU Water Framework Directive (WFD) and the development of River Basin Management Plans (RBMP), including for transboundary river basins.

Objectives and proposed actions under the OECD Kura project

Overall goal:

To assess the economic and financial dimension of water management in Armenia, Azerbaijan and Georgia, in line with the requirements of the EU Water Framework Directive (WFD)

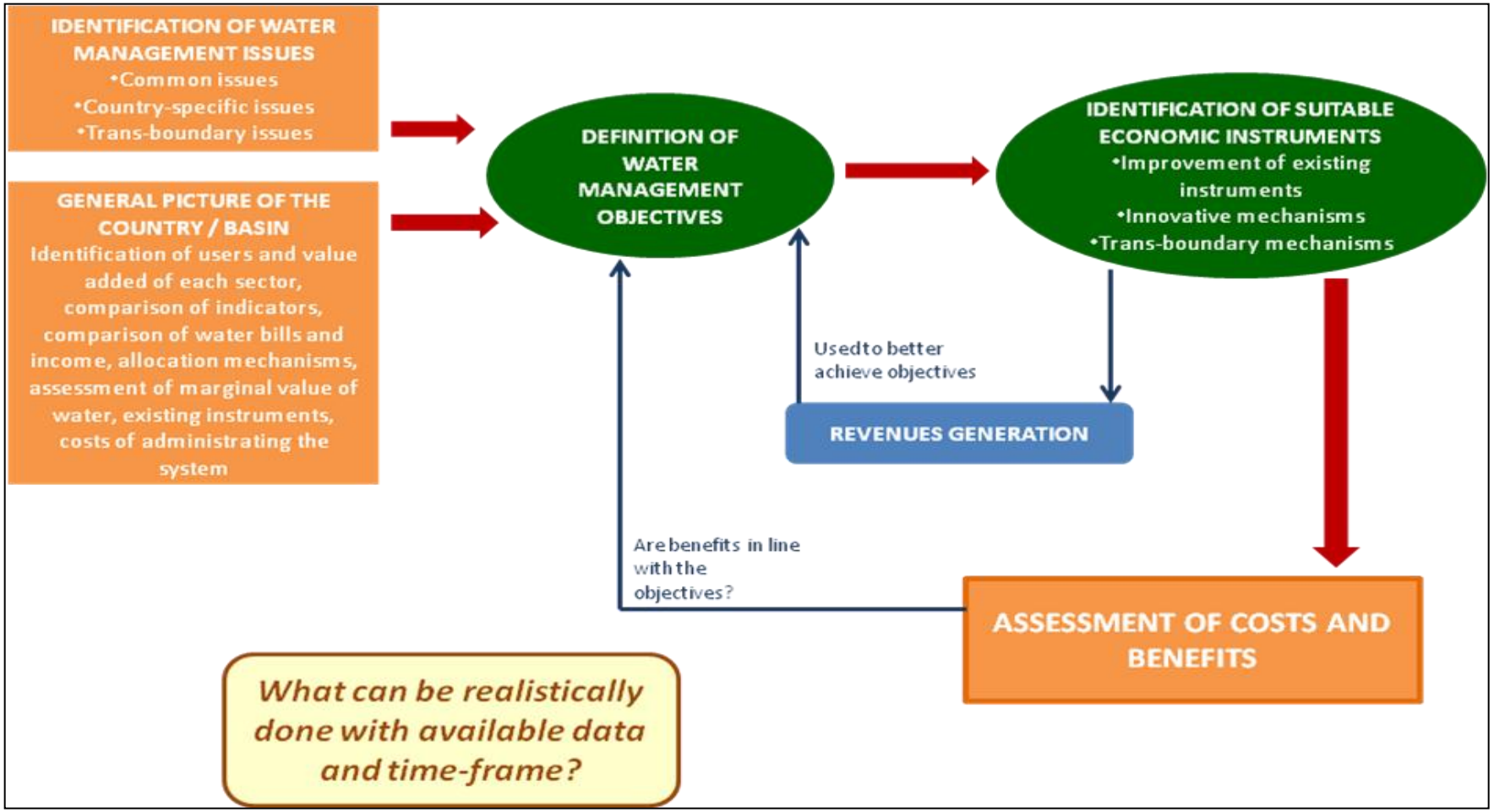
Specific items investigated:

(1) Review existing economic instruments applied to water in the three countries
(2) Perform an assessment of the performance of existing instruments
(3) Identify water management issues which are not (satisfactorily) addressed by the existing instruments
(4) Explore ways to strengthen the use of economic instruments

Final aim:

To develop a shared view on the economic dimension of integrated water resource management at the river basin scale, by identifying common issues and approaches to water management

The conceptual framework developed and applied in the OECD Kura project



Existing economic instruments (EI) and their performance

Legend for the performance assessment

- The principle is fully (or almost fully) satisfied
- The principle is partly satisfied
- The principle is poorly satisfied
- The principle is practically not satisfied
- No information / not applicable / not relevant

Economic instruments and performance criteria	Armenia	Georgia	Azerbaijan
Tariffs for drinking water and wastewater			
Average Unitary Rates (USD/m^3)	0.38-0.47 DW 0.03 WW	0.12-0.25 DW 0.04-0.05 WW	0.35-0.4 DW 0.08 WW
'User pays' principle	Partly satisfied	Partly satisfied	Partly satisfied
Cost recovery	93% of O&M costs	75% of O&M costs	71% of O&M costs
Incentiveness for a more efficient use of water resources	Poorly satisfied	Poorly satisfied	Poorly satisfied
Affordability	0.9-2.1%	2.2% in Tbilisi	2%
Irrigation water tariffs			
Average Unitary Rates (USD/m^3)	0.01-0.09	45 UDS/ha/year	Not available
'User pays' principle	Partly satisfied	Poorly satisfied	Not satisfied
Cost recovery	53% of O&M costs	Revenues much lower than expenses	1.7% of O&M costs
Incentiveness for a more efficient use of water resources	Partly satisfied	Not satisfied	Poorly satisfied
Affordability	Partly satisfied	No info	2%

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Economic instruments and performance criteria	Armenia	Georgia	Azerbaijan
Abstraction fees			
Unitary Rates (USD/m^3)	0.0013-0.0039	0.006-0.3	0.25-0.42
'User pays' principle	Poorly satisfied	Poorly satisfied	No info
Cost recovery	Not appl.	Not appl.	Not appl.
Incentiveness for a more efficient use of water resources	Not satisfied	Not satisfied	No info
Affordability	0.03% of total tariff paid	No info	No info
Pollution fees			
Unitary Rates (USD/m^3)	Depends on pollutant	Abolished in 2005	0.015-0.020
'Polluter pays' principle	Partly satisfied	Not satisfied	Partly satisfied
Incentiveness for a more efficient use of water resources	Poorly satisfied	Not applicable	No info
Cost recovery	Not appl.	Not applicable	Not appl.
Affordability	Not relevant	Not applicable	Not relevant
Fines and penalties			
Fine range (USD)	137-410	60-364	3,000-15,500
'User pays' principle	Partly satisfied	Poorly satisfied	Partly satisfied
Incentiveness for a more efficient use of water resources	Poorly satisfied	Poorly satisfied	Poorly satisfied
Cost recovery (costs of pollution)	Not satisfied	Not satisfied	No information

Water management issues not addressed by existing economic instruments

Water management issue	Armenia	Georgia	Azerbaijan
Overuse of biological resources (including fish)	X		
Illegal waste dumping into the rivers	X	X	
High water losses due to poor infrastructure	X	X	X
Water pollution from municipal wastewater, mining and industry, agriculture	X	X	X
Soil erosion due to overgrazing and deforestation, resulting in excess sedimentation and mudflows	X	X	
Flood events	X	X	X
Non-consumptive water use: hydroelectric power		X	
Excess surface water abstraction	X	X	
Inefficient water use (domestic, industrial and agriculture)		X	X
Modified (decreased) river flows as a result of climate change	X	X	X
Seasonal water scarcity		X	X

Water management issues not addressed by existing EI

The trans-boundary dimension of water management : selected examples from the Kura river basin

Kura river: the Gardabani wastewater treatment plant

Located close to the border with Azerbaijan, it is the only operating WWTP in Georgia and collects and treats municipal wastewater from Tbilisi and Rustavi, although it ensures only mechanical treatment and discharges partially untreated wastewater in the Kura river, which flows in Azerbaijan.

Alazani (Ganikh) river

The river flows for a substantial part of its length along the Georgia-Azerbaijan border, and discharges into the Mingachevir reservoir, located in Azerbaijan, which expressed concern about trans-boundary pollution from municipal wastewater and pollution from agriculture, as monitoring in Azeri territory showed high levels of several pollutants.

Lake Jandari and Alazani-Agrichay aquifers

These two water bodies are shared by Georgia and Azerbaijan, and both countries extensively abstract water for several uses, especially irrigation, but no official coordinated management approaches are in place at the moment.

Potential new EI for an improved water management in the Kura river basin

Potential economic instruments	Description	Overall feasibility		
		AM	GE	AZ
Adaptation / improvement of existing water abstraction fees	Application of different water abstraction fee levels for industry and households (Armenia). Enforcement of existing legislation: charges also on surface water abstraction (Georgia)	++	+	+
Charge for non-consumptive water use (hydropower)	Extension of water fees to hydropower companies, which at the moment are exempted	0	0	+
Reform of existing water tariffs	Differentiation of tariffs according to season, to cope with seasonal water scarcity (Armenia). Higher tariffs and differentiation of tariffs according to flow variation and water availability (Azerbaijan)	+	n.a.	+
Introduction / reform of existing pollution fees	Pollution fees would be applied at permit level (Armenia) Re-introduction of pollution fees (Georgia)	++	0/-	+
Adaptation / improvement of existing fines	Adaptation and enforcement of existing legislation needs to be ensured. In Georgia, extension of fines to illegal waste dumping	n.a.	+	++
Innovative pollution fund	Polluters polluting above an authorized limit pay a fine, and the revenues are then put in a fund. Existing polluters can submit proposals for pollution reduction: the most cost-effective ones are funded.	+	n.a.	n.a

Potential new EI for an improved water management in the Kura river basin

Potential economic instruments	Description	Overall feasibility		
		AM	GE	AZ
Extra / product tax for polluting substances	Creation of an extra/product tax on hazardous chemicals, and establishment of "deposit-refund system" under which the tax/duty is returned in exchange for returning unwanted products	+	n.a.	n.a
Charges on fertilizers	Imposition of charges on the import and production of chemical fertilizers and pesticides used in agriculture	+	-	n.a
Reducing taxes on water saving technologies	Tax reduction (e.g. VAT) for those companies introducing water saving technologies in the production cycle	+	-	n.a
Environmental insurance system	Liability for environmental damage or cleanup costs may lead to the creation of a market for environmental insurance. Insurance premiums levels would then act as an incentive to pollute less.		0	
Payment for ecosystem services	Erosion can be reduced through reforestation and other activities, where the upstream community inhabitants and farmers convert part of their land to forests or floodplain areas. For these services, downstream communities pay upstream communities to compensate for the lost opportunity of using their land for agricultural purposes. This instrument could also be applied at the trans-boundary level.	+	-	
Beneficiary pays principle	Joint investments for improved wastewater treatment on the territory of Georgia (e.g. Gardabani WWTP).	n.a.	-	

The potential for enhanced transboundary cooperation

Cooperation on water management issues between the three countries can happen at two levels

Opportunities at the national level

How can economic instruments be applied at the national level to address effectively trans-boundary water management issues?

Measures and instruments for water management can be tailored to pursue common water management objectives at the river basin level, agreed upon by the three countries.

Opportunities at the trans-boundary level

The potential for actual trans-boundary cooperation and, in turn, for the development or trans-boundary economic instruments would obviously be the ultimate result of a coordinated approach to water management.

The potential for enhanced transboundary cooperation

The review of existing economic instruments in the three countries revealed that significant improvements can be achieved in the water sector at the national level.

On -going initiatives in the three countries suggest that efforts are already being made in this direction.

The reform of economic instruments at the national level can act as a fertile ground for:

- The introduction of innovative economic instruments that are complementary to existing ones;
- The development of national priorities for water management, which in turn could be discussed and harmonized at the river basin level.

The national level, if properly coordinated among the three countries, presents good opportunities for actions in the short term.

It prepares the grounds for potential interventions at the trans-boundary level.

In conclusion

- A **stronger information base** is required on the technical and socio-economic aspects of water management including at the trans-boundary level
- R**eforming existing economic instruments combined with the application of new (innovative) instruments would contribute to** raising financial revenues available for the water sector. It could also provide clearer incentives for more efficient water use.
- The implementation of new (innovative) ecnomic instruments will need thorough **assessments** considering economic, social and environmental impacts as well as **feasibility issues**.
- **Transboundary cooperation in the water sector** can range from the sharing of experiences at the national level to the appplication of assessments frameworks that consider transboundary benefits. It could benefit from the combination of **regional and national policy dialogues** on the economic dimension of water management.

Applied currently in Georgia	Abolished in 2005 in Georgia	Applied in Armenia and Azerbaijan	Potentially can be improved/introduced in Georgia
Drinking water supply and sanitation tariffs		**Drinking water supply and sanitation tariffs in cities and towns**	**Reforming water supply and sanitation tariffs**
Irrigation water supply tariffs		**Irrigation water supply tariffs**	**Reforming irrigation water supply tariffs**
Groundwater abstraction fees		**Groundwater abstraction fees**	**Adaptation/improvement of existing fines**
Fines for inappropriate use of water resources		**Penalties and fines**	**Introduction of surface water abstraction charges**
	Surface water abstraction charges	**Surface water abstraction charges**	**Introduction of non-abstractive use of surface water resources e.g. for hydropower**
	Non-abstractive use of surface water resources e.g. for hydropower	**Non-abstractive use of surface water resources e.g. for hydropower**	**Introduction of water pollution charges**
	Water pollution charges	**Water pollution charges**	**Introduction of charges for agrochemicals**
			Reducing taxes on water saving technologies
			Environmental insurance systems
			Payment for ecosystem services