Aral Sea Basin Case study: Water and Environment

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Central Asia and the Aral Sea Basin

**Basin countries:** Afghanistan, Iran, China, Kazakhstan, Kyrgyz Republic, Tajikistan, Turkmenistan, Uzbekistan

**Total Basin area:** 1,231,400 km²

**Population:** 66 mln in five former Soviet countries, of which 51 mln live within basin

**Two main rivers:** Syrdarya (37.3 km³/year) Amudarya (79 km³/year)

**Total surface runoff:** 116 km³/year
What does water mean for the Aral Sea Basin?

The source of life for about 65 millions of people in 2030; 80-85 millions in 2050 (without accounting of the Northern Afghanistan)

Farming produces 30% of GDP;

Agro-industry - 8–10% of GPD;

Associated to water use sectors and services - 20% of GDP;

Totally - 58 – 60% of GDP.
Employment - 45% of active population;

70 - 85% of food basket;

Water supply and sanitation – need for huge improvements;

Hydropower - 29 – 36% of total electricity production
Consequences of the environmental disaster in the Aral Sea Basin

…affected millions of people living in the region are well known over the globe.

Under not wise economic developments and climate change, all processes and phenomena in this region are doubled and appear in a more complicated manner - big changes took place within a short time period, which under other evolution conditions could occur for centuries.
The Aral Sea Basin could be observed as an area where excessive human pressure radically distorted all the components of the environment.

Today’s the Aral Sea – these are two separate lakes with total volume of water about 9% of the Sea, which was in 1960. The mineralization of water in the western part is above 150 g/l, and in the northern part is about 20-35 g/l.
The truth of the Aral Sea

Aral in the past

Aral today
International recognition of the Aral Sea crisis

4 April 2010 – Secretary-General Ban Ki-moon witnessed one of the world's worst environmental disasters as he flew over the shrinking Aral Sea.

“It is clearly one of the worst environmental disasters of the world... It really left with me a profound impression, one of sadness that such a mighty sea has disappeared.”
President of Uzbekistan Islam Karimov proposed the "Programme of measures to eliminate the consequences of the drying Aral Sea disaster", which was circulated as an official document of the 68th UN General Assembly session.

“The most important task now for Central Asia is to reduce the devastating impact of the Aral crisis on the environment and the livelihoods of living in the Aral Sea region of millions of people.”
1. Order of the USSR Ministry of Reclamation and Water Management on the establishment of basin administrations on inter-republican water allocation in Amudarya and Syrdarya (Water Management Administration «Amudarya» and «Syrdarya») (Moscow, August 1987)

2. Statement of the heads of water authorities of the Central Asian Republics and Kazakhstan (Tashkent, October 1991)

3. Agreement between the Republic of Kazakhstan, the Kyrgyz Republic, the Republic of Tajikistan, Turkmenistan, and the Republic of Uzbekistan on Cooperation in the Field of Joint Management of the Use and Conservation of Water Resources of Interstate Sources (Almaty, 18 February 1992)

4. Decision by the Heads of Central Asian Republics on the establishment of International Fund for Saving the Aral Sea (Tashkent, January 1993)

5. Agreement between the Republic of Kazakhstan, the Kyrgyz Republic, the Republic of Tajikistan, Turkmenistan, and the Republic of Uzbekistan on Joint Actions for Addressing the Problems of the Aral Sea and Its Coastal Area, Improving the Environment, and Ensuring the Social and Economic Development of the Aral Sea Region (Kzyl-Orda, March 1993)


8. Agreement between the Republic of Kazakhstan, the Kyrgyz Republic, the Republic of Tajikistan, Turkmenistan, and the Republic of Uzbekistan on the Status of International Fund for Saving the Aral Sea and Its Organizations (Tashkent, May 1997)

9. Agreement between the Republic of Kazakhstan, the Kyrgyz Republic, the Republic of Tajikistan, Turkmenistan, and the Republic of Uzbekistan on the Status of International Fund for Saving the Aral Sea and Its Organizations (Ashgabat, April 1999)

10. Dushanbe Declaration (Dushanbe, October 2002)

11. UN General Assembly Resolution on Observer status for the International Fund for Saving the Aral Sea in the General Assembly (December 2008)

Structure of the International Fund for saving the Aral Sea
The described circumstances would be considered as priorities for "green growth concept" implementation

Measures for improvement of aquatic ecosystems and environment conservation within the Aral Sea disaster zone:

• Reaching agreement among the riparian states on setting of minimum but obligatory volumes of water releases for in-stream and environmental needs in order to sustain ecosystems restored in the Amudarya delta.

• Renovation of practices of long-term water regulation in transboundary watercourses in the Aral Sea basin.

• Supply of National Hydro-meteorological services and Basin Water Organizations with modern equipment for water resources accounting and forecasting, and monitoring of the environmental changes and sanitary-epidemiological conditions.
Improvement of aquatic ecosystems and environment conservation within the Aral Sea disaster zone (2):

Performance of systematic environmental monitoring, projection of environmental development and elaboration of concrete measures to prevent further degradation.

Improvement of the system of water regime and quality management in delta ecosystems, including regulation of water-exchange between lake systems and water discharge that ensure self-cleaning capacity of lakes and wetlands.

Creation of favorable water-heat regime for fish and other biological habitats.

Apply modern chemical and biological methods of wastewater treatment.

Implementation of land reclamation, afforestation, and agronomic measures to ensure environmental stability.

Provide obligatory and independent ecological expertise of any new water-use projects.
The main purpose of the meeting was to discuss the situation in the Aral Sea Basin and mobilize the efforts of international community to carry out practical actions in implementing programs and projects aimed at improving the environmental and socio-economic situation in the Aral Sea Basin, as well as ensuring further development of international cooperation to reduce the negative consequences of this global environmental catastrophe.
Basic provisions are available in the following areas (but region needs external support):

1. Maintain existing the fragile ecological balance in the Aral sea region, and combat desertification, aiming improvement of the water management system, economical and rational use of water resources;

2. Create conditions for reproduction and genetic conservation, and public health in the Aral sea region, development of social infrastructure, a wide network of medical and educational institutions;

3. Create the necessary social and economic mechanisms and incentives to improve the quality and standard of living of the population, the development of basic infrastructure and communications.

4. Preservation and restoration of biodiversity of flora and fauna in the region.
THANK YOU for ATTENTION!

Additional information:

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