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# Integrated Management Strategy of Transboundary Water Resources of Central Asia

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# INTRODUCTION

The Central Asia Region includes the republics of Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan. Hydrographically the Central Asia Region is distinguished as the Aral Sea basin, which in its turn consists of two basins – the Syrdarya and the Amudarya Transboundary Rivers.

# Surface water resources of the Aral Sea basin

Country	Amudarya River basin, km <sup>3</sup> /year	Syrdarya River basin, km <sup>3</sup> /year	Aral Sea basin	
			km <sup>3</sup> /year	%
Kazakhstan	—	4,50	4,50	3,9
Kyrgyzstan	1,90	27,4	29,30	25,3
Tajikistan	62,9	1,1	64,00	55,4
Turkmenistan	2,78	—	2,78	2,4
Uzbekistan	4,70	4,14	8,84	7,6
Afghanistan	6,18	—	6,18	5,4
CA	78,46	37,14	115,6	100,0

# Principal spheres used of water resources in Central Asia

Irrigation

Hydroelectric engineering

1990

Total area  
irrigated lands

8.8 mln. ha

Total capacity of all  
electric power station

37.8 mln. kWt

**Ecological disaster of the Aral Sea**

Tajikistan is mountain country which 93% of his territory occupied by mountains and in Tajikistan there are more 8400 glaciers by the total area of 8476, 2 km<sup>2</sup> (about 6% of all territory of the country)

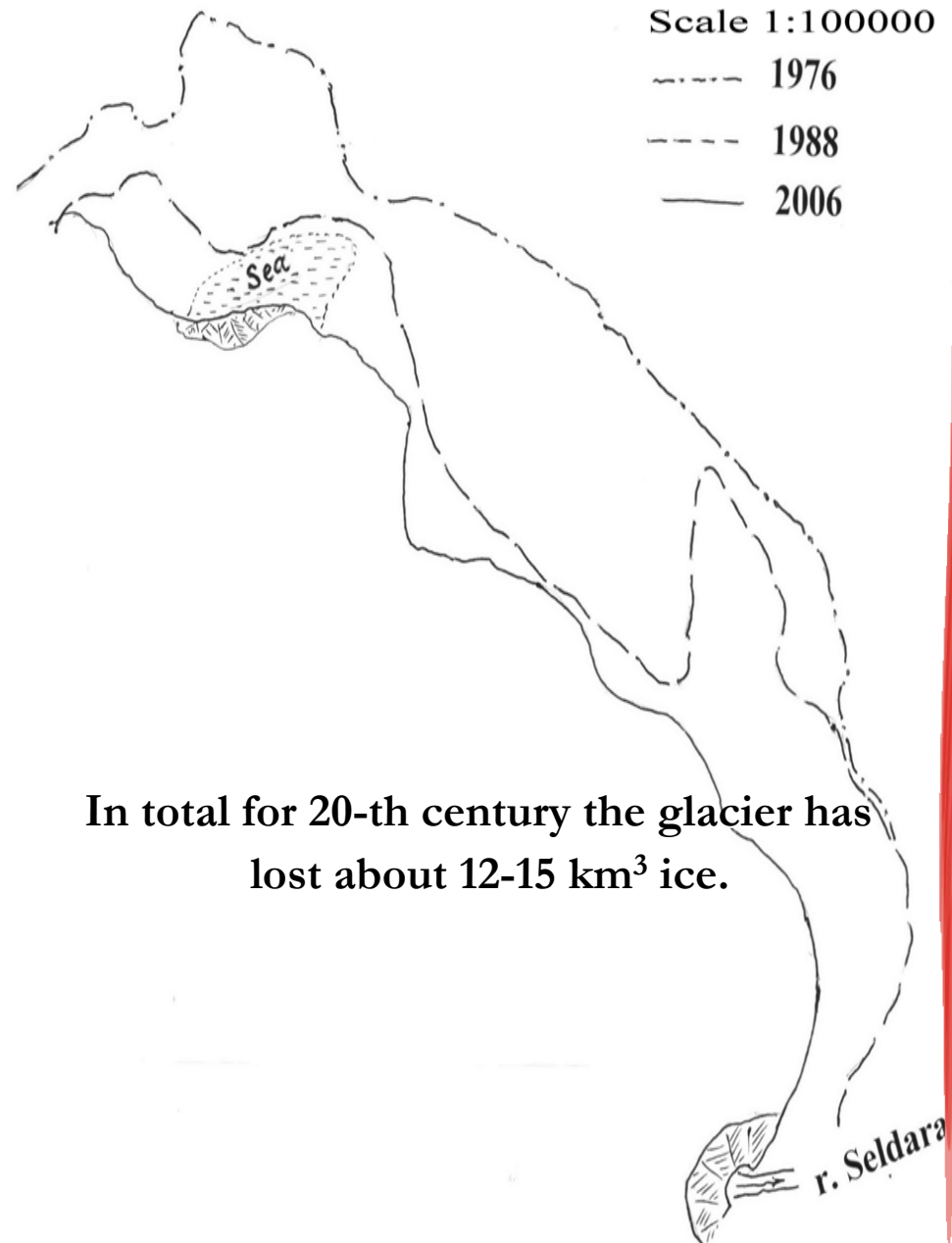
The center of the main area of glaciations of Tajikistan is Fedchenko glacier - the largest mountain glacier in the world.

### Characteristics of Fedchenko glacier

Length	77 km
Average width	2,5 km
Maximal width	5 km
Area with all tributaries	~ 652 km <sup>2</sup>
Ice thickness	~1 km

# Deviation of Fedchenko glacier

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In the basin of the Obikhingoy river glacier Garmo is one of basic glaciers which is strong moraines and continues to thaw intensively, breaking up on separate blocks. For the period 1932-2007 years the glacier Garmo has receded on 7 km, that is the most significant reduction



Source: Tajik Agency on Hydrometeorology

Degradation of the Garmo Glacier.



# Integrate Management of Water Resources (IMWR)

The goal of Integrate Management of Water Resources (IMWR) is to unite on basin level all aspects of water resources control for realizing it under the united leadership. For demonstrating of changeability of IMWR principles there were offered to use approaches "experimental objects" under-basins of the Aral Sea by organize Centers of Planning, which experience may be spread later to another basins include all basin of the Aral Sea.

The first aim IMWR could be in establishing formal mechanism for integration on minimum accessible level according to two main models:

- a) to organize the Working Group (WG)
- and
- b) to found Basin Commissions

# Strategy of IMWR for Basin of Vakhsh

The main goal - elaboration the national (Tajik) strategy of integrated water resources control of Vakhsh part of Amudarya River transboundary basin on condition affirmed by Government with purposes, conception and program of country development for 2015-2020 years.

The strategy of IMWR bases on main principles which provide achievement of three goal of ecological steady development (ESD):

- ~ economical development
- ~ social development
- ~ protection of environment

## In this case priority will be given to:

- Many branches approach to control of water resources include protection of all fresh water sources and resources. There is effective use of water resources in irrigation in compare to widening sewage-farm.
- Planning the stable and rational use, protection, economy and control of water resources in the base of demands and priorities of society on framework of national development's politics with account of economical effectiveness, social usefulness

# Proposed Measures for Improvement of Water Resources' Control

In framework of IMWR Strategy with purpose of improvement the control of water resources are proposed to accelerate passage to hydrographic method of control. For this as the first step it is proposed to conduct Republican Commission and in its structure Working Group. The main task of Commission is harmonization interdepartmental interest, planning to use water resources and solution of practical problems of passage to integrated control of water resources, cooperation on conducting administrations (Committees) of channels, basin administrations.

## The main tasks of Commission are:

- Long term planning of water resources' use and planning of development
- Drawing up recommendations on definition and agreement political aspects on sphere of using and guarding water resources
- Consideration of suggestion on improvement of regional and interstate water dividing, improvement of regimes of water resources using
- Informing society about development plans and water resources using.

## Short - Term Measures

- In the beginning stage of realization of strategy first of all it will be created active Working Group for preparing necessary documents and suggestions for Republican Commission.
- Fulfilling adopted decisions of Government on conducting administrations (Committees) of channels, refund Administration of Irrigation System according to hydrographical principles of water resources control and providing representations of all interested parts of water using and society;. There will be elaborate and coordinate basin plans of control, use and guarding of water resources.

## Middle – Term Measures

- As extraordinary measure by end of period it will be redistributed of function and changed structure of main interested sector ministries.
- It needs decentralization of water resources on basins Level.
- There is creation the system of complex monitoring of nature resources and necessary base of statistics



# Long – Term Measures

- There is completion of mastering water-energetic resources of Vakhsh River's basin
- Creation regional marked of water resources

The image features a solid blue background. In the lower right quadrant, there are several faint, concentric circles representing raindrops. On the left and right sides, there are vertical, multi-colored lines in shades of red, green, and blue, resembling brushstrokes or digital artifacts. The text "Thank You!" is centered in a large, white, sans-serif font with a black outline.

**Thank You!**