Azərbaycan Respublikası
Ekologiya və Təbii Sərvətlər
Nazirliyi

Milli
Hidrometeorologiya
Xidməti

IWRM implementation in Azerbaijan




Total water resources of Azerbaijan Republic

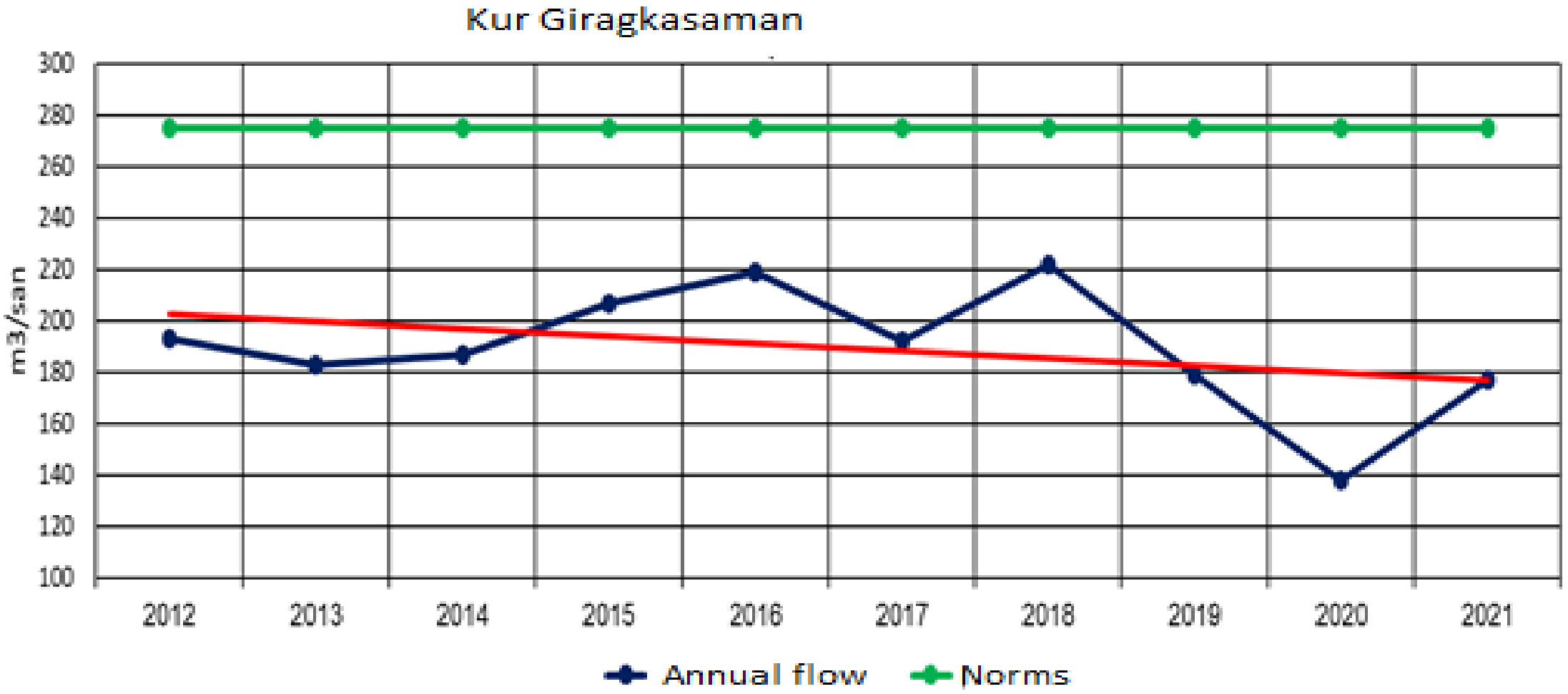
Water recourses in Azerbaijan are formed in surface and ground water sources in average are about 36,0 km^3 , of which

- Surface water resources: 28,5÷30,5 km^3
- Ground water resources : 5.0-9.0 km^3
- Transboundary waters 18,0-22,0 km^3
- Local waters 8,0-11,0 km^3

Water management issues

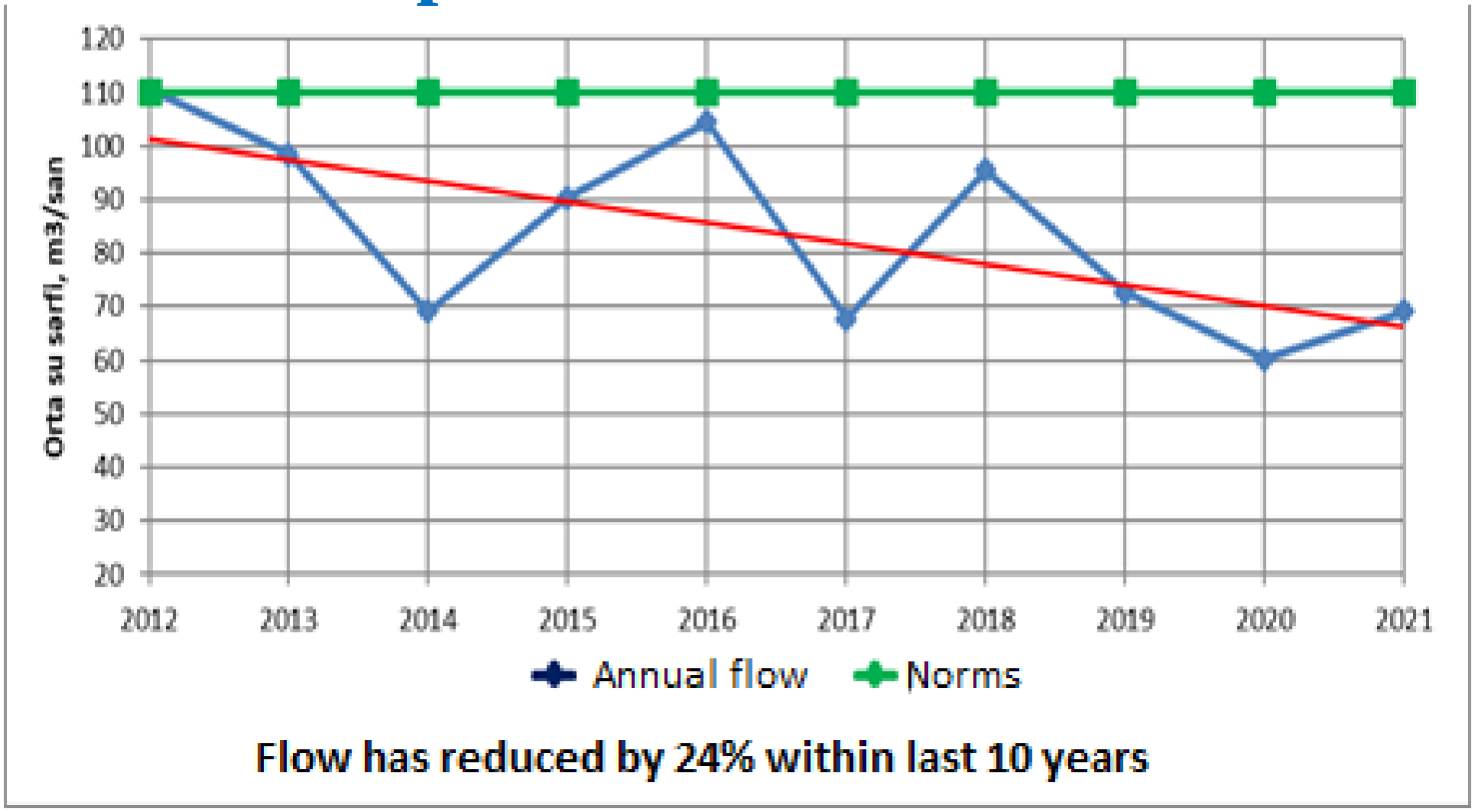
- Shortage of water resources(4-5) km^3, as result of due to the climate change , high water losses during transportation and their inefficiency use
- 65-70 % of surface water resources are formed in trans-boundary rivers, which also used by neighboring countries in inefficiency way
- Trans-boundary rivers flowing into the territory of the country are polluted .
- Uneven distribution of the internal rivers across the country
- Often reoccurrence of floods and flash floods
- Issues related to the management structure and interagency cooperation
- Main principles of IWRM and RBMP aren't fully applied in river basins

Flow reduction of Kur river in 2012-2021 compared to 1961-1990



Flow has reduced by 31% within last 10 years

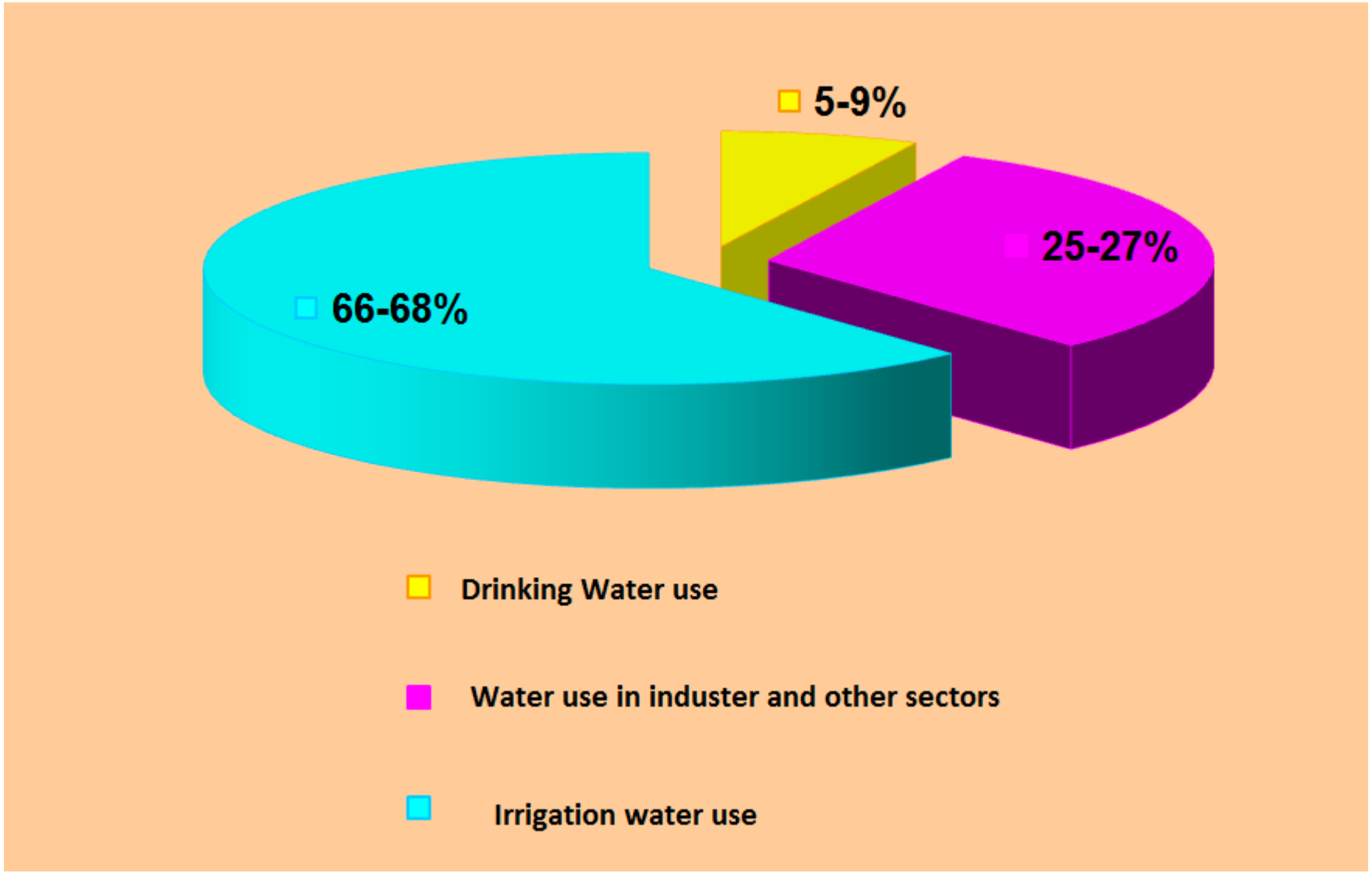
Flow reduction of Ganykh rivers in 2012-2021 compared to 1961-1990



Chemical status of transboundary rivers

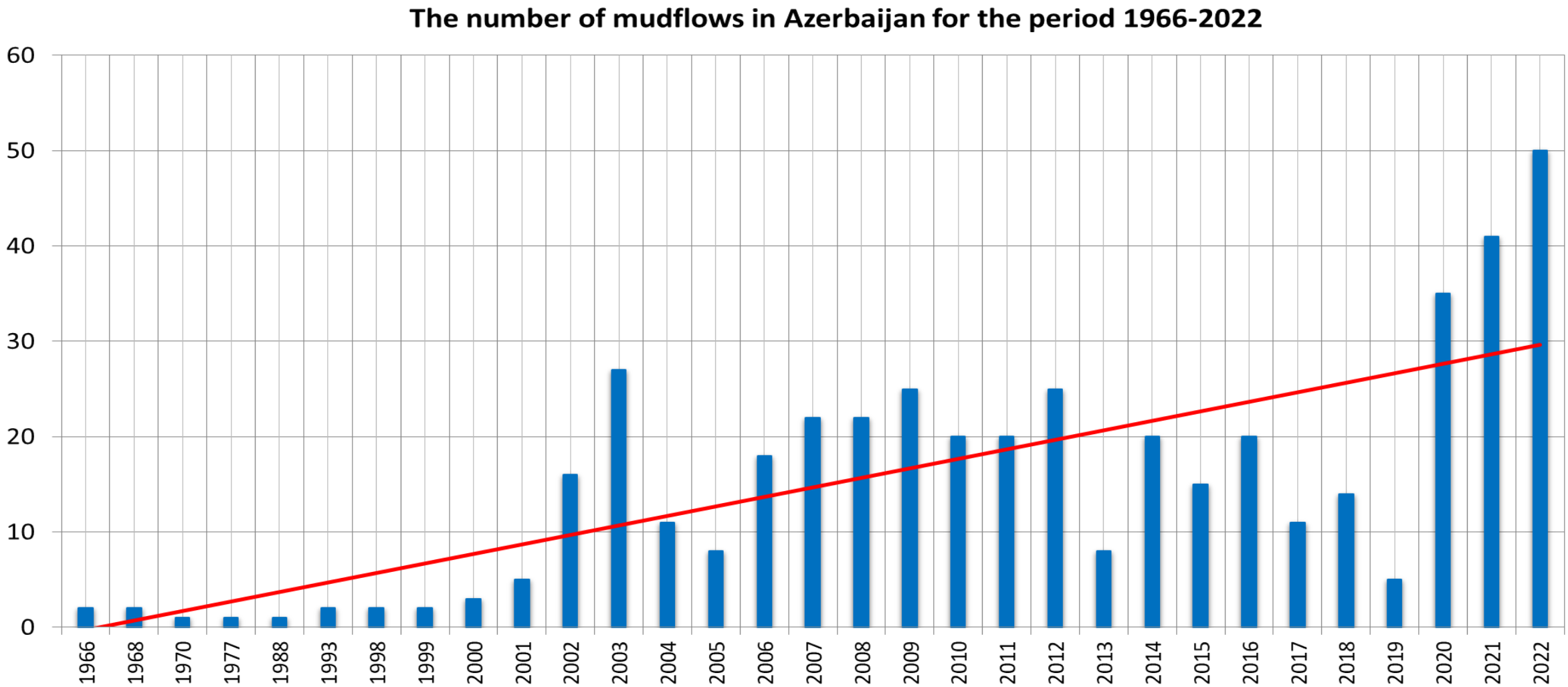
- Monthly values of Phenols and copper are higher than norms(MACs) up to **3-5** times in Kura.
- In Kura, Ganykh(Alazan) and Gabirry(Iori) rivers values of other pollutants were over norms in some periods up to **2-3** and more times
- For example in 2022 Biological and Chemical Oxygen Demand were over norm by 2.3 times
- But it should be noted that currently amounts of Biological and Chemical Oxygen Demand and Nitrates increases. Probably as result of agricultural fertilizer use.
- It is also important to have same water quality standards between the to countries to apply same approach during ecological status assessment

Water use by sectors



Current and future(according to climate change scenarios) changes of water resources

Years	1990	2000	2010	2017	2050
Natural water resources	30000	29000	28000	27000	24000
Available on territory of Azerbaijan	25000	24000	23000	22000	19000
Water abstraction from natural water resources	16176	11110	11566	12781	12781
Water consumption - total	12477	6588	7715	9154	9154
of which:					
Water losses during transportation	4206	3053	3852	3628	3628
River ecosystem water needs	11000	11000	11000	11000	11000
Water(economy) balance	-2000	+2000	+500	-1800	-4800


The number of mudflows in Azerbaijan for the period 1966-2022
60
50
40
30
20
10
0
1966
1968
1970
1977
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1993
1998
1999
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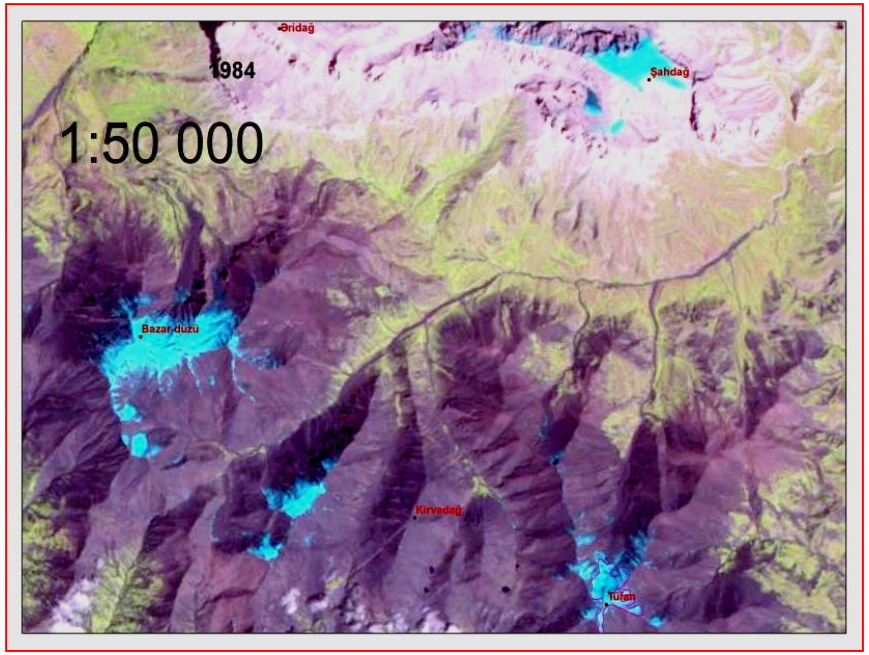
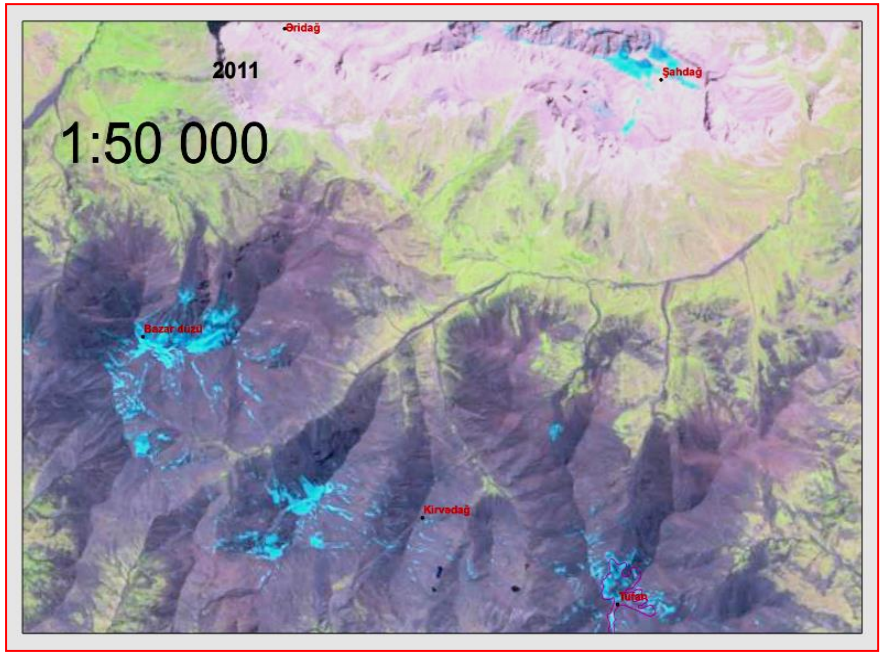
2018
2019
2020
2021
2022

Glasiers

The main glacier areas in Azerbaijan are found in the Gusarchay basin in the Greater Caucasus (Shahdag, Tufandag and Bazarduzu).
During 1960-1970 years in Gusarçay basin area of glaciers was 3,24 km^2 and currently reduced to 2,7-2,9 km^2 and their low border is at elevation of 3940 m.



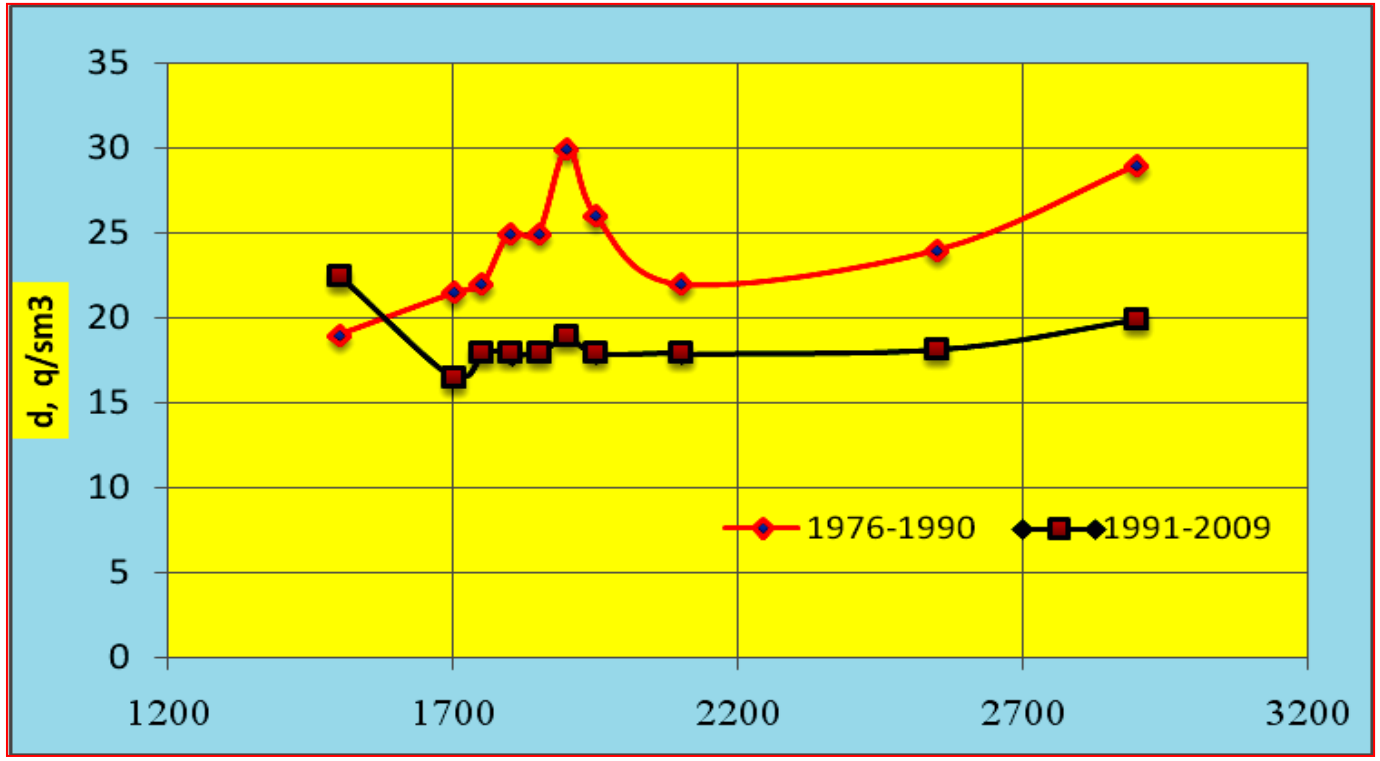
1984



2011

Snow covering

In recent years snow density is decreased along the altitudes based on increase in thermic regime in winter season. Although the increase of level of snow in mountains in the last 30 years the density has been decreases to 12-14%. The reasons are the repeat of air temperature and southern winds in altitudes in winter seasons.



Reduction or precipitations in the result of mild weathers is one of the reasons for reduction of snow density.

Climate change and Water

- Water cooperation has proven to offer multiple benefits that accelerate progress across almost all the SDGs and that's why it should be upscaled.
- Azerbaijan is a vulnerable country to climate change effects, and especially with the increase in the number, duration of droughts and water shortages,
- According to various climate scenarios water shortage will be increased up to 10-20% by 2040, which will have serious negative impacts to whole economy and particularly to agriculture.
- As a downstream country, Azerbaijan attaches great importance to transboundary water cooperation and formulated its national water policy in line with the 2030 Agenda.
- Key focuses are improving water treatment, reducing losses, creating alternative water resources and recycling, assessment of water resources, improvement of the accounting system, integration of data into the "Electronic Water Management" information system and transition to an integrated management system.
- By the State Climate Change Commission and Water Commission, large-scale measures are being taken to minimize negative impacts of climate change and increase climate resilience and take decarbonization pathway.

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Modernization of Hydrometeorological Network

Type of observations	By 2020		2020-2022 years		2023-2026-years	
	Total	Automat	Total	Automat	Total	Planning automatic stations
Meteorological	73	34	73	51	77	77
Hydrological	63	0	63	40	63	55
Marine	8	0	8	4	8	7
Radar	5	0	5	2	5	5
Agrometeorological	7	0	7	1	17	17
Aerological	1/0	0	1	0	1	3

Doppler radar stations (2 units)

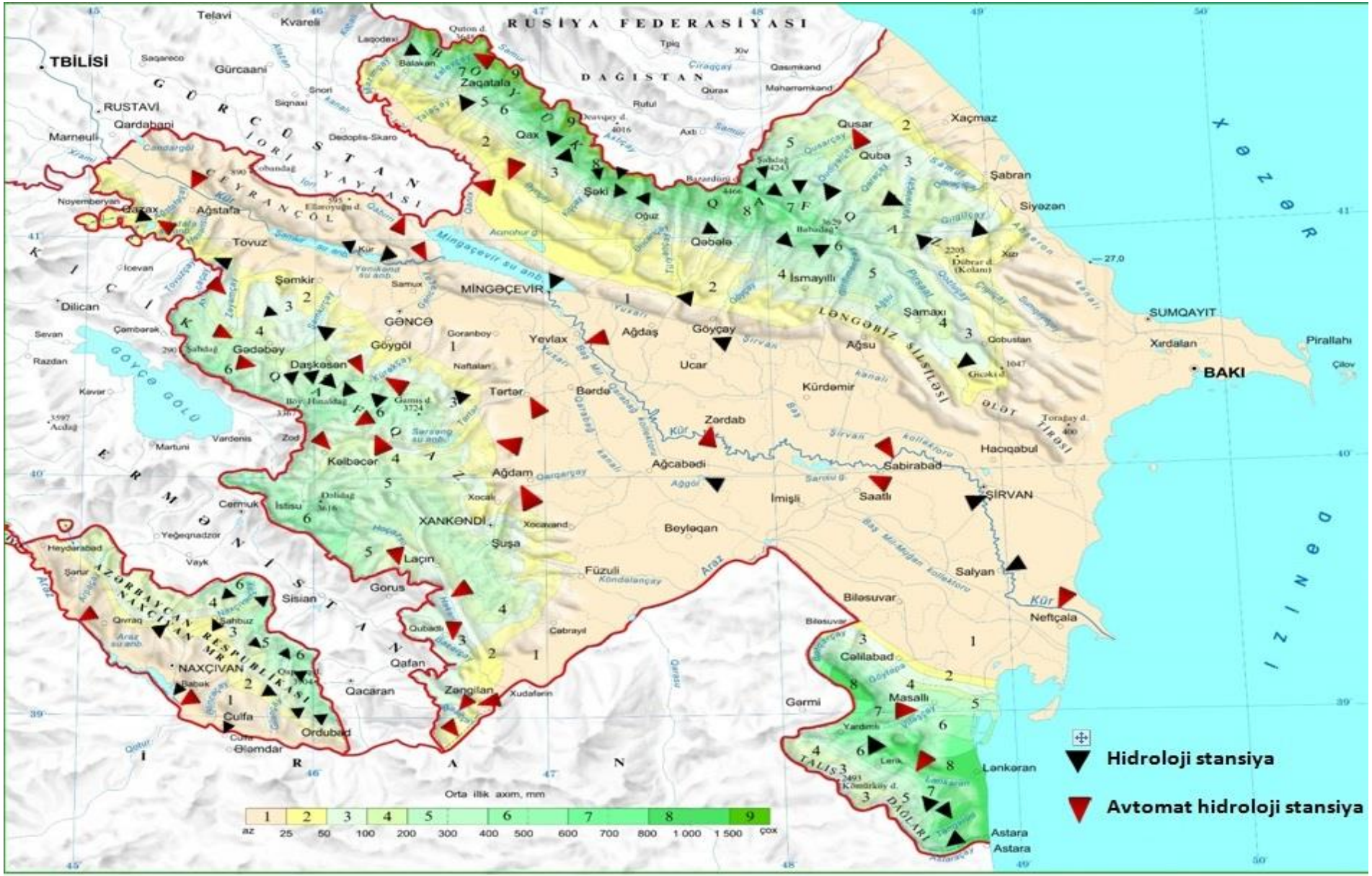
Automatic hydrological stations (40 units)

Meteorological stations (51 units)

Automatic marine stations (4 units)

Automatic air quality stations (5 units)

Hydrological observation network

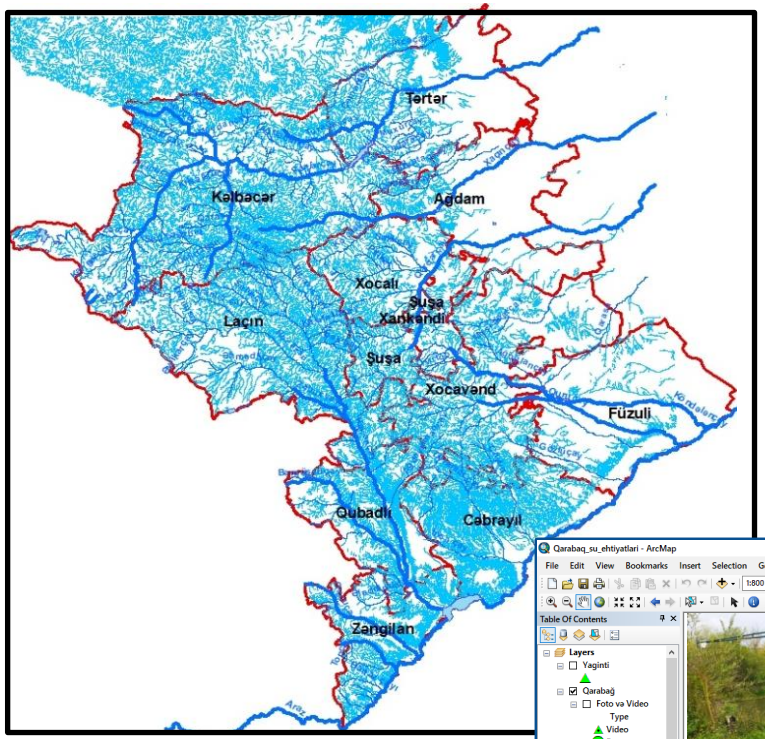


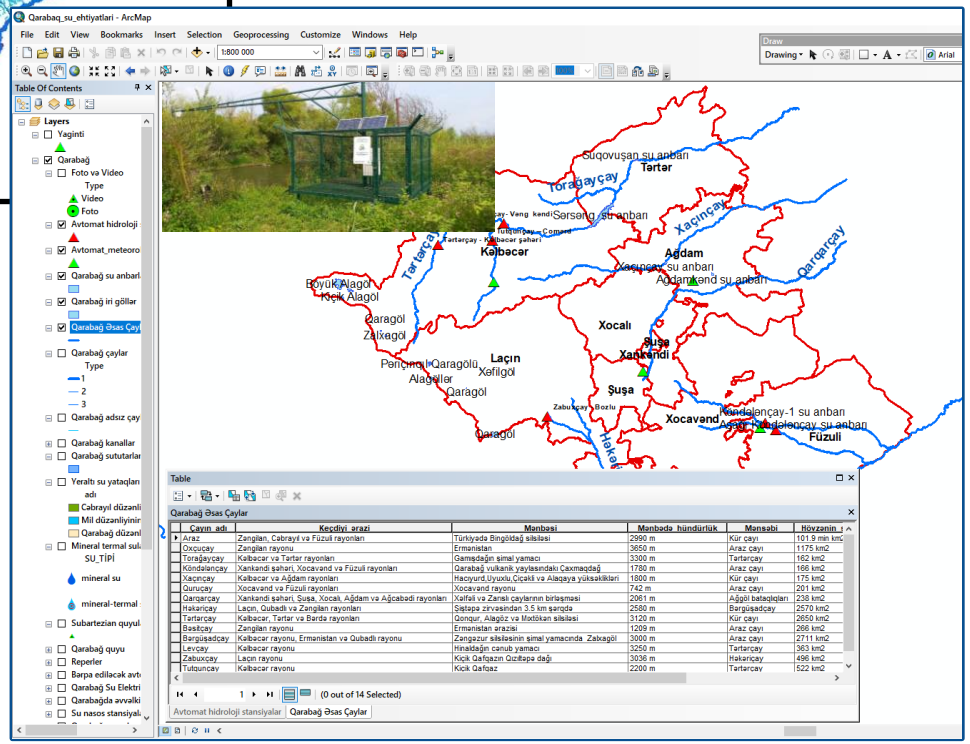
Kura transboundary river

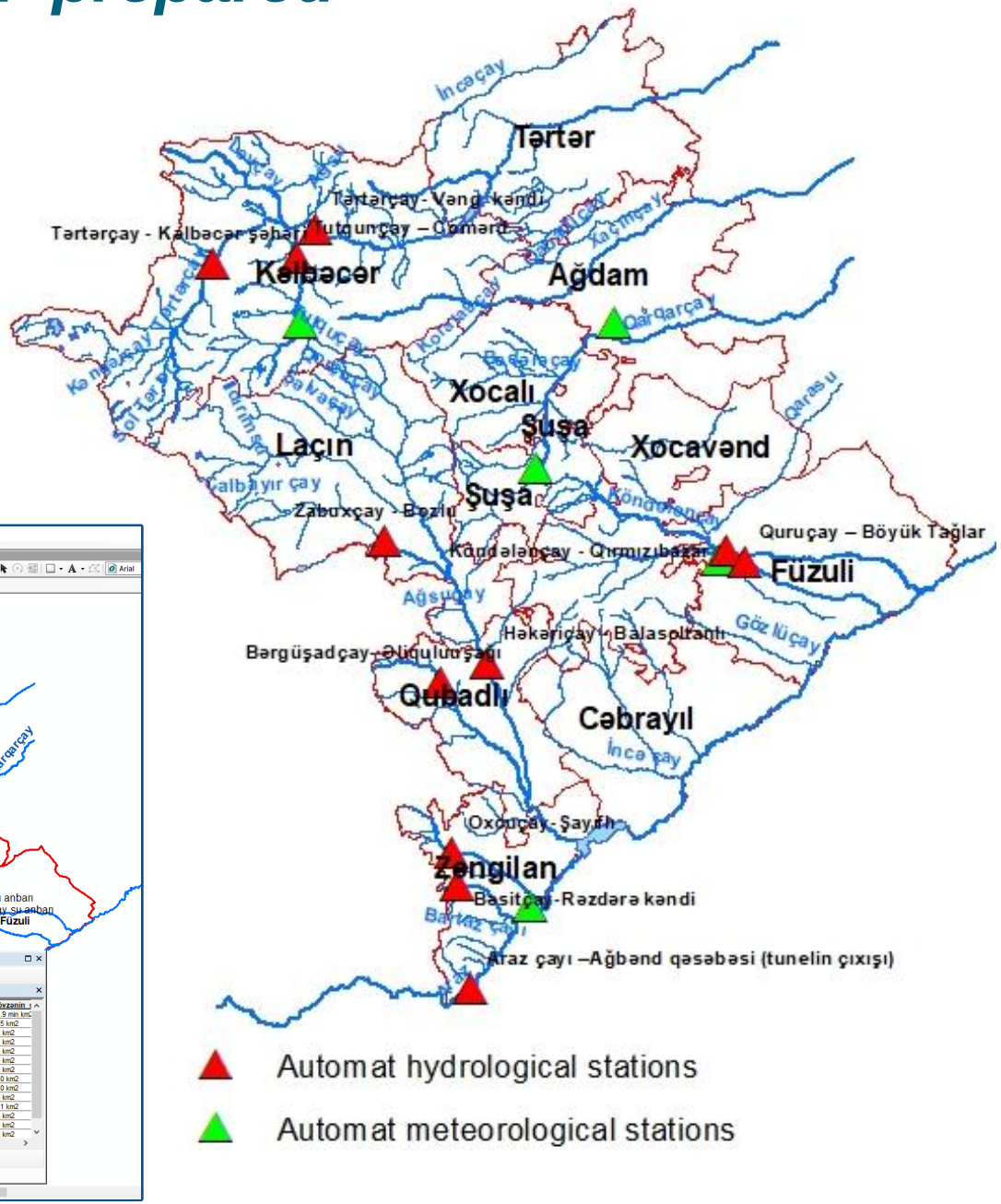
Giragkaseman hydrological station

Hydrological observations since – 1953
In 2021, an automatic station was installed (state investment project)
Automatic measurement of water level and discharge
Data automatically is received by server installed at NHMS and managed in online regime

Water digital mapping has been prepared







Situation Center was established in 2022 within the framework of the State Investment Program

- **Doppler Weather Radars - 2 units**
- **Automatic Hydrological stations – 40 units**
- **Automatic Meteorological stations – 51 units**
- **Automatic marine stations – 4 units**
- **Automatic air quality stations – 5 units**

SITUATION CENTER

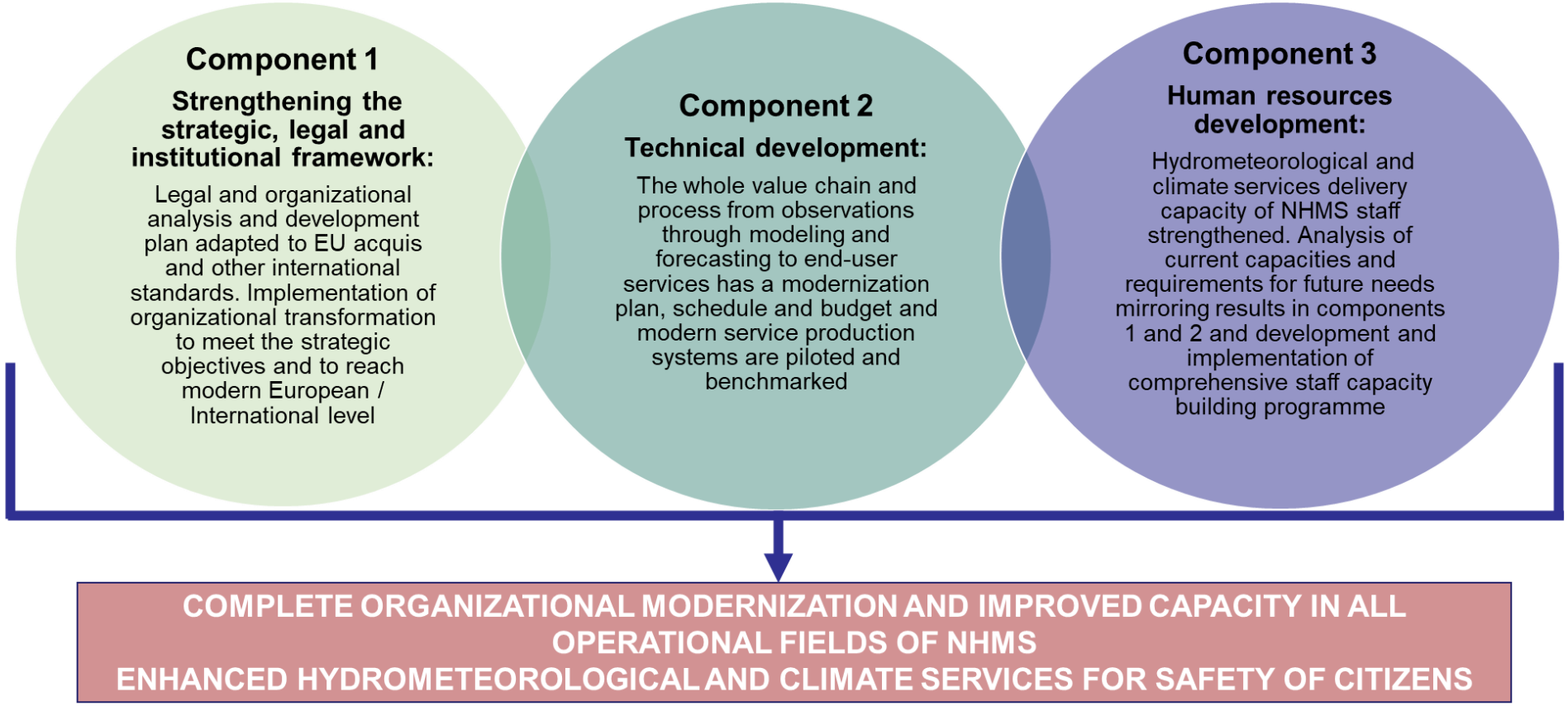
EARLY WARNING SYSTEM

Strengthening hydrometeorological and climate services in Azerbaijan
EU TWINNING

- **Beneficiary administration:** National Hydrometeorological Service (NHMS) under the Ministry of Ecology and Natural Resources (MENR)
- **Lead Member State Partner:** Finnish Meteorological Institute
- **Junior Member State Partners:** Lithuanian Hydrometeorological Service under the Ministry of Environment of the Republic of Lithuania (LHMS) and International Office for Water, France
- Project duration: 1 September 2022 – 31 August 2024
- **Overall Objective:** Resilience and adaptive capacity of Azerbaijan, its people and economic sectors to climate-related hazards and natural disasters enhanced.

Funded by
the European Union

Project Components



Funded by
the European Union

Strengthening Climate Information and Multi-Hazard Early Warning Systems for Increased Resilience in Azerbaijan (UNEP/GCF)

Output 1. Strengthened delivery model for climate services and multi-hazard early warning systems

Output 2. Strengthened observations, monitoring, modelling and prediction of climate and its impacts

Output 3. Enhanced dissemination and communication of climate risk information and multi-hazard early warning

Output 4. Enhanced climate risk management capacity

UN environment programme

National Water related legislation

- Law of the Republic of Azerbaijan "On Melioration and irrigation" (1996)
  ⇒ this Law was amended and supplemented in April 30, 2004
- Water Code of the Republic of Azerbaijan (1997)
- Law of the Republic of Azerbaijan "On the Water Economy of Municipalities" (2001)
- Law of the Azerbaijan on the "Safety of Hydro-technical Structures" (2002)
- "On Water Supply and Wastewater" (1999),

Water relations are governed with a number of edicts and rules developed in compliance with these laws

Regulations of CabMin

“ Rules on norm-setting in the use and protection of water bodies” (15 October 1998, № 206);

•“Rules on preparation and enforcement of water use limits” (15 October 1998, № 206);

• Rules on development, agreement, state examination, approval and implementation of schemes of integrated use and protection of water resources (15 October 1998, № 206);

• Rule on approval of plans of domestic use of water and general system plans of water use (15 October 1998, № 206);

• Rules on use of water bodies for hydropower needs (6 December 2000, № 216);

•"Rules on use of water bodies for fishery and hunting economy needs " (8 May 2000, № 82);

•"Rules on transferring specially protected water bodies into categories " (1 May 2000, № 77);

•“Regulations on use of water bodies for resting and sport” (22 October 1998, № 216);

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International Conventions and Treaties in the field of Water that Azerbaijan joined

- Convention on “Protection and use of trans-boundary water flows and international lakes” (March 17, 1992, Helsinki) - 03.08.2000
- Water problems and health Protocol of the Convention on “Protection and use of trans-boundary water flows and international lakes” - London, 09.01.2003
- Convention “On Environmental Impact Assessment in trans-boundary context” (February 25 fevral, 1991, Espo) -25.03.1999
- Convention on Trans-boundary Impact of Industrial Accidents - 16.06.2004
- UN Convention on the “Access to information related to environment, community participation in decision making and openness of justice court” (June 25, 1998 Denmark, Orkhus) - 23.03.2000

Bilateral agreements in Transboundary basins

- Use of water resources of the trans-boundary rivers with Georgia, including the Kur and Khram rivers is currently regulated not with intergovernmental **Treaty** but with the bilateral contracts (agreements).
- Iran-Azerbaijan Commission established subject to agreement signed between the Islamic Republic of Iran and former USSR on July 27 1963 annually considers issues re joint use of water and energy resources of the Araz River and and resolves any problems that arise out of such use. An intergovernmental **Treaty on the Demarcation of Waters has not been signed yet.**
- Samur being a trans-boundary river is playing a crucial role in providing water supply of population and irrigation of the lands in the areas from Russian border through the cities of Baku and Sumgayit and Absheron peninsula is jointly used in compliance with Protocol of 1967. An Agreement was signed between Azerbaijan and Russia on September 3, 2009 on joint use of water resources of the Samur river.

Current governance and institutional framework for water management

Structure of water management in Azerbaijan

Agency	↔	Function
Cabinet of Ministers: State Water Commissions	↔	Water policy and planning
Ministry of Ecology and Natural Resources (See structure of Ministry)	↔	Water policy, monitoring and protection
Ministry of Emergency State Water Agency	↔	Water and Flood management
Ministry of Agriculture	↔	Planning of water use in agriculture
Ministry of Health	↔	Drinking water quality
State statistic Committee		Publication of water information
Azersu JSC	↔	Water Supply and sanitation
Amelioration JSC	↔	Irrigation water use

UN-Azerbaijan Cooperation

- UN-Azerbaijan Sustainable Development Cooperation Framework for the period 2021 to 2025” is aimed to protecting the environment and addressing climate change.
- Among priority policies with measurable commitments to accelerate implementation of the SDGs by 2030 are “The State Program for the years 2023-2030 on the improvement of atmospheric air quality and climate changes in the Republic of Azerbaijan”, “National Adaptation Plan”, “Low Carbon Emission Development Strategy”, “National Water Strategy”, “National Plan for Electromobility”.
- Most of mentioned documents have been prepared by close support and assistance of UN organizations.

SDG 6 (Clean water and sanitation) and its 8 indicators out of the 11 international indicators have been prioritized as national indicators in our country.

Ministry of Ecology and Natural Resources of the Republic of Azerbaijan lead work on indicators:

- 6.5.1: Degree of integrated water resources management implementation,
- 6.5.2: “Proportion of transboundary basin area with an operational arrangement for water cooperation”
- 6.3.2: “Proportion of bodies of water with good ambient water quality”.

Particularly regarding indicator 6.5.1. during last 3 years relevant legal-institutional , planning and coordination work was carried out and degree of implementation of IWRM raised to 40%

Regarding other indicators it should eb noted that proportion of securely treated waste waters exceed 50%(SDG 6.3.1) and weight of water bodies with good quality increased during last 12 years from 42 to 67%

Currently water abstraction is about 57% of total values of the flow.

Vision to the future

- A strategic roadmap for 2016-2020 and a development concept “Azerbaijan 2020: the vision of the future” mention a sustainable use of natural resources, including water, comprehensive reforms in the area of the access of the country’s population to water supply and sanitation services.

- The National Water Policy Dialogue (NWPD) was established in 2010 as an inter-ministerial platform to support water sector reforms. The NWPD aims to develop a strategy based on the Integrated Water Resources Management in Azerbaijan (IWRM),

- To ensure efficient use of water resources in the country and improve water resource management and coordination of activities in this area, a Commission was established by the Order of the President of the Republic of Azerbaijan "On measures to ensure the efficient use of water resources" dated 15 April 2020.

- The Order of the President of the Republic of Azerbaijan dated 27 July 2020 approved the "Action plan on ensuring the efficient use of water resources."

Draft Action Plan on the implementation of the National Strategy for the efficient use of Water Resources

- Legislation improvement in the field of Water Resources Management
- Management of water resources by adapting basin principle to territorial structure
- Legislation improvement in the field of water use
- Optimization of powers of bodies related to integrated management of Water Resources
- Establishment of a coordinating entity at the national level
- Implementation of water-related Sustainable Development Goals in line with the”2030 Sustainable Development Agenda“
- Management of river basins
- Monitoring and planning of water resources
- Water demand management

INTEGRATION

- Water as environmental resource
- Strategic planning (Ministry of Ecology, other organizations, etc)

- Water through infrastructural needs
- Water as part of regional /socio-economic development programmes

Need for linking these processes towards a comprehensive strategy

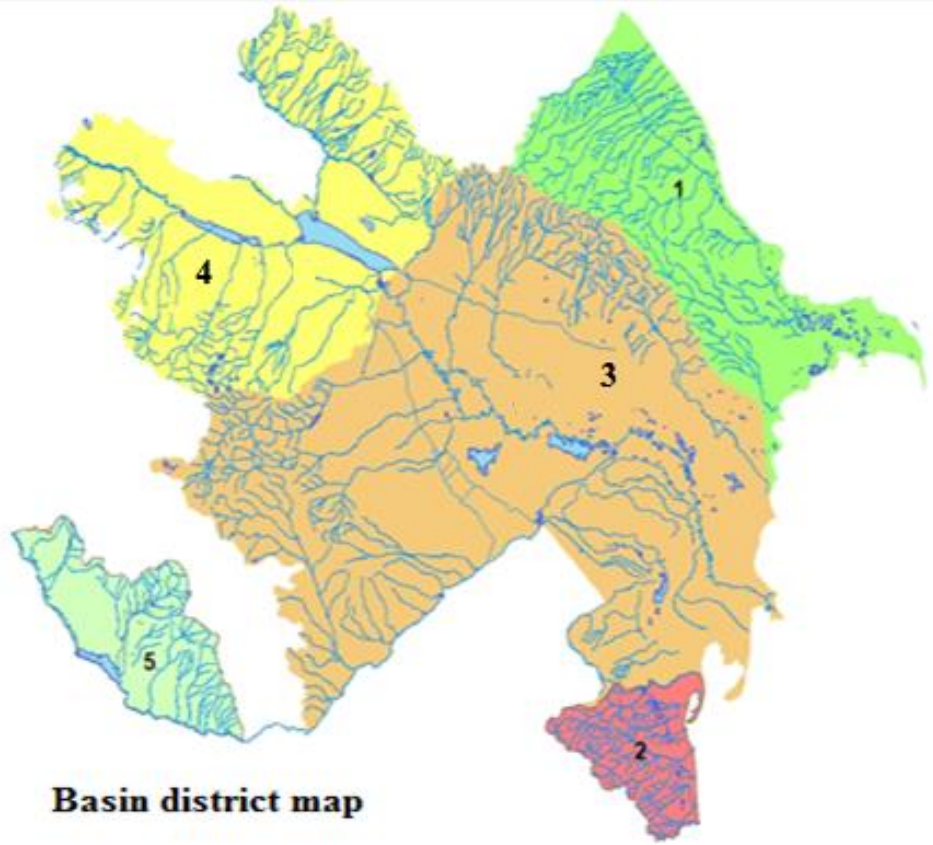
VISION

- To ensure a:
  - comprehensive approach to management of water resources
  - contributing to sustainable development of territories
  - socio-economic development and green growth
  - respecting water as an environmental resource.....

“Water for Territorial Development”

EUWI+ project proposed delineation of BD in Azerbaijan

№ п/п	Area, sq.km	Basin Districts	International river basins	Sub basin(Basin)
1.	13375	Northern-Eastern Slope Greater Caucasus	Samur(Russia)	
2.	3515	Lankaran	Astara(Iran)	Caspian Sea
3	44865	Lower Kur –Araz	Araz(Iran,Armenia)	Kura(Caspian Sea)
4.	19345	Kura upper Mingechavir Water Reservoir	Kur(Georgia) Khrami(Georgia) Qabirr(Georgia) Jogazchay(Armenia) Agstafachay(Armenia) Akhinjachay(Armenia0, Tovuzchay(Armenia	Mingechavir Reservoir
5	5500	Araz-Nakhchivan-	Araz(Turkey, Iran, Armenia) Arpachay(Armenia)	Araz



Basin district map

Needs for regional cooperation:

In the field of establishment of the regional platform for the exchange of information on Early Warning Systems:

- Operational exchange of information on the occurrence of dangerous hydrometeorological events in the border areas,
- Exchange of the Radar Meteorological Data

In the field of hydrology

-Cooperation in the field of conducting joint snow measurement activities in the basins of transboundary rivers, preparation of joint flow forecast of transboundary rivers
-Organization of joint expeditions to permanent glaciers, joint processing and exchange of information;
-Regular exchange of information and forecasts about the state of the water resources of transboundary rivers
-Operational exchange of information about expected flooding on transboundary rivers

Thank you for your attention!