

WATER USE AND THE ARAL SEA

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Master level course is a cooperation between Karakalpak State University and the Swedish Aral Sea Society

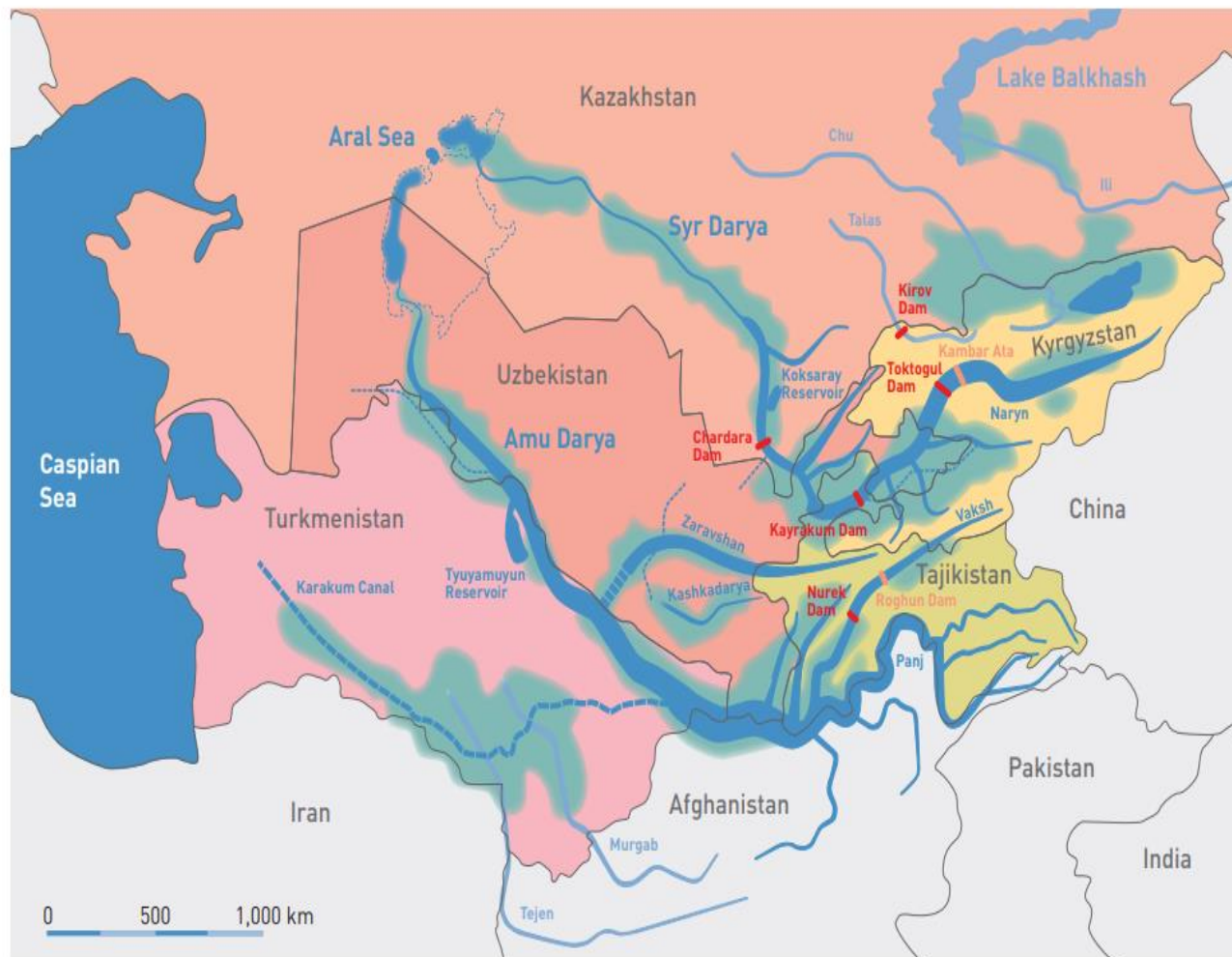
Aral Sea Basin

Shared rivers Amu Darya and Syr Darya

All or most of the water used, mainly for irrigation

On-going work in the Amu Darya delta, Northern Aral Sea where water is supplied by Syr Darya, the dry bottom is being planted

Map 2: Water resource use in the Aral Sea Basin



- Irrigated lands
- Rivers (breadth reflects average annual flow)
- Aral Sea shoreline 1960
- Major dams
- Major dams
- Proposed dams

Based on: Zoi Environment 2011

Basin-wide issues

- Water over-use for irrigation
- Water-energy conflict
- Dam safety (Sardobe)
- Water quality

**But there is (almost) no discussion
on the protection of water-based
ecosystems in the region!**

Countries sharing the basin

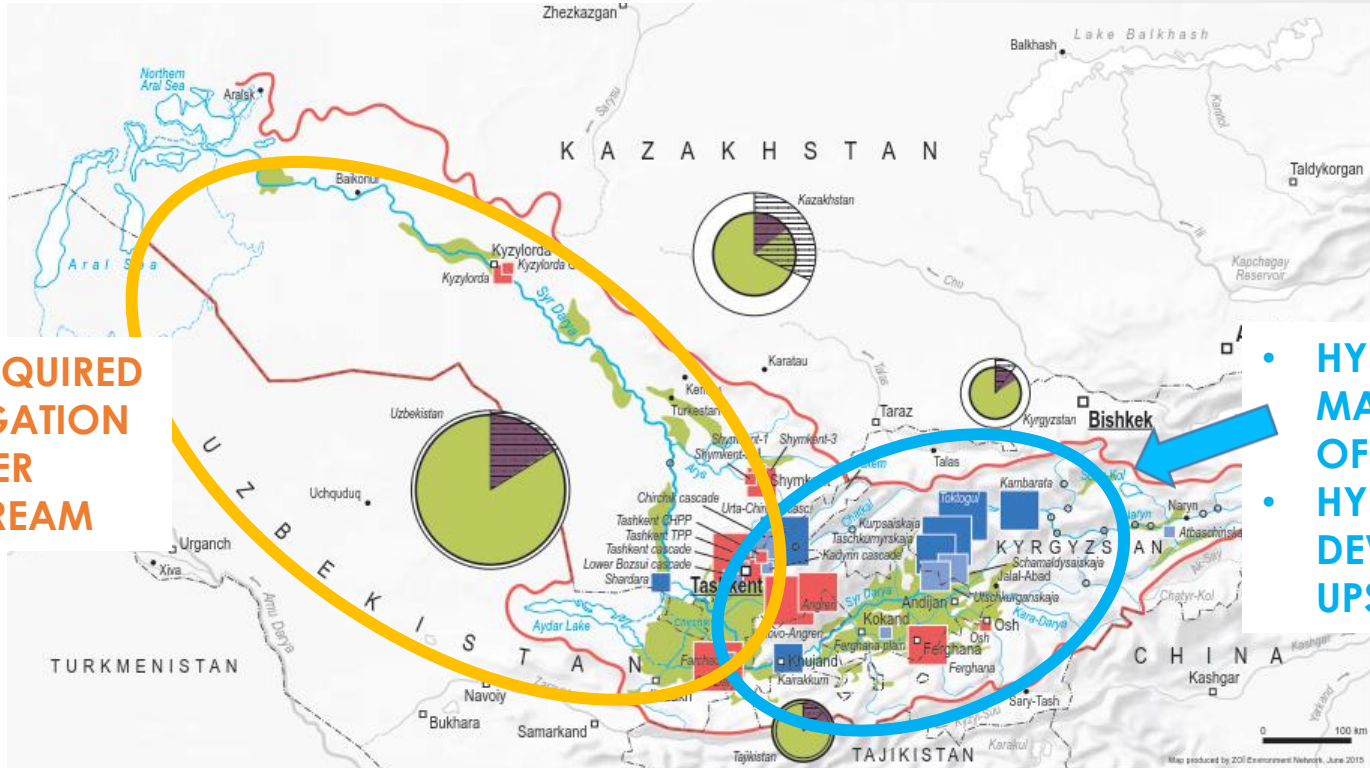
- Afghanistan – uses 20 cbkm
- Kazakhstan – uses 14 cbkm
- Kyrgyzstan – uses 7 cbkm, hydropower important
- Tajikistan – uses 10 cbkm, hydropower important
- Turkmenistan – uses 26 cbkm
- Uzbekistan – uses 50 cbkm

TABLE 11
Areas under irrigation

Country	Year	Full control irrigation area	Spate irrigation area	Total area equipped for irrigation	Area equipped as % of cultivated area	Area equipped as % of region	Area equipped for irrigation actually irrigated	Area actually irrigated as % of area equipped
		ha	ha	ha	%	%	ha	%
Afghanistan	2002	3 208 480		3 208 480	42	24	1 896 000	59
Kazakhstan	2010	1 199 600	866 300	2 065 900	9	16	1 264 970	61
Kyrgyzstan	2005	1 021 400		1 021 400	75	8	1 021 400	100
Tajikistan	2009	742 051		742 051	85	6	674 416	91
Turkmenistan*	2006	1 990 800		1 990 800	102	15	1 990 800	100
Uzbekistan	2005	4 198 000		4 198 000	89	32	3 700 000	88
Central Asia		12 360 331	866 300	13 226 631	33	100	10 547 586	80

* Total area equipped for irrigation is larger than the cultivated area, since the irrigation area includes irrigated permanent pasture while permanent pasture is not included in cultivated area.

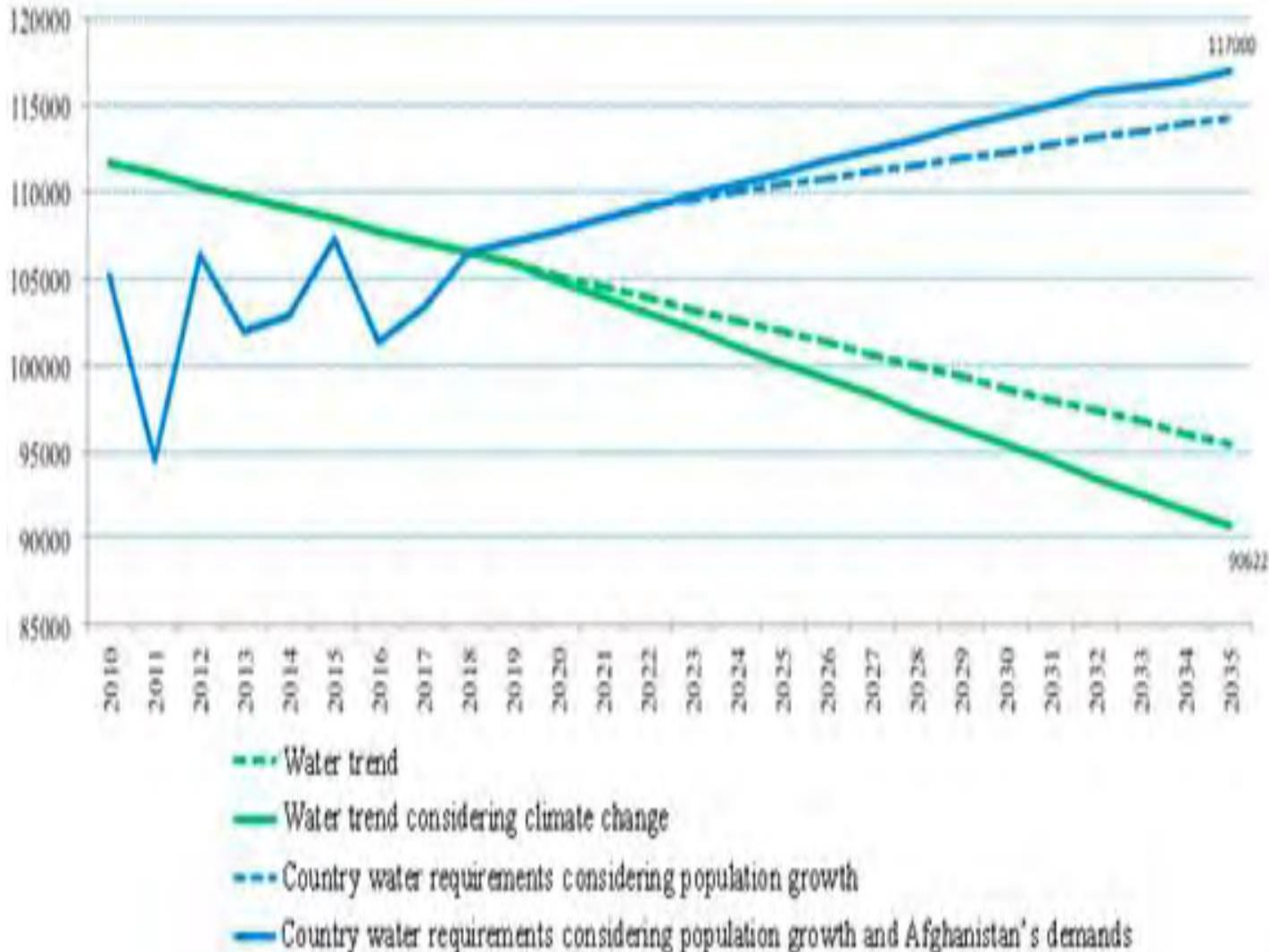
THE SYR DARYA RIVER BASIN



WATER REQUIRED FOR IRRIGATION IN SUMMER DOWNSTREAM

- **HYDROPOWER MAIN SOURCE OF ELECTRICITY**
- **HYDROPOWER DEVELOPMENT UPSTREAM**

Figure 9.2. Comparison of water demand and water availability in ASB, Mm³





Page view

Read aloud

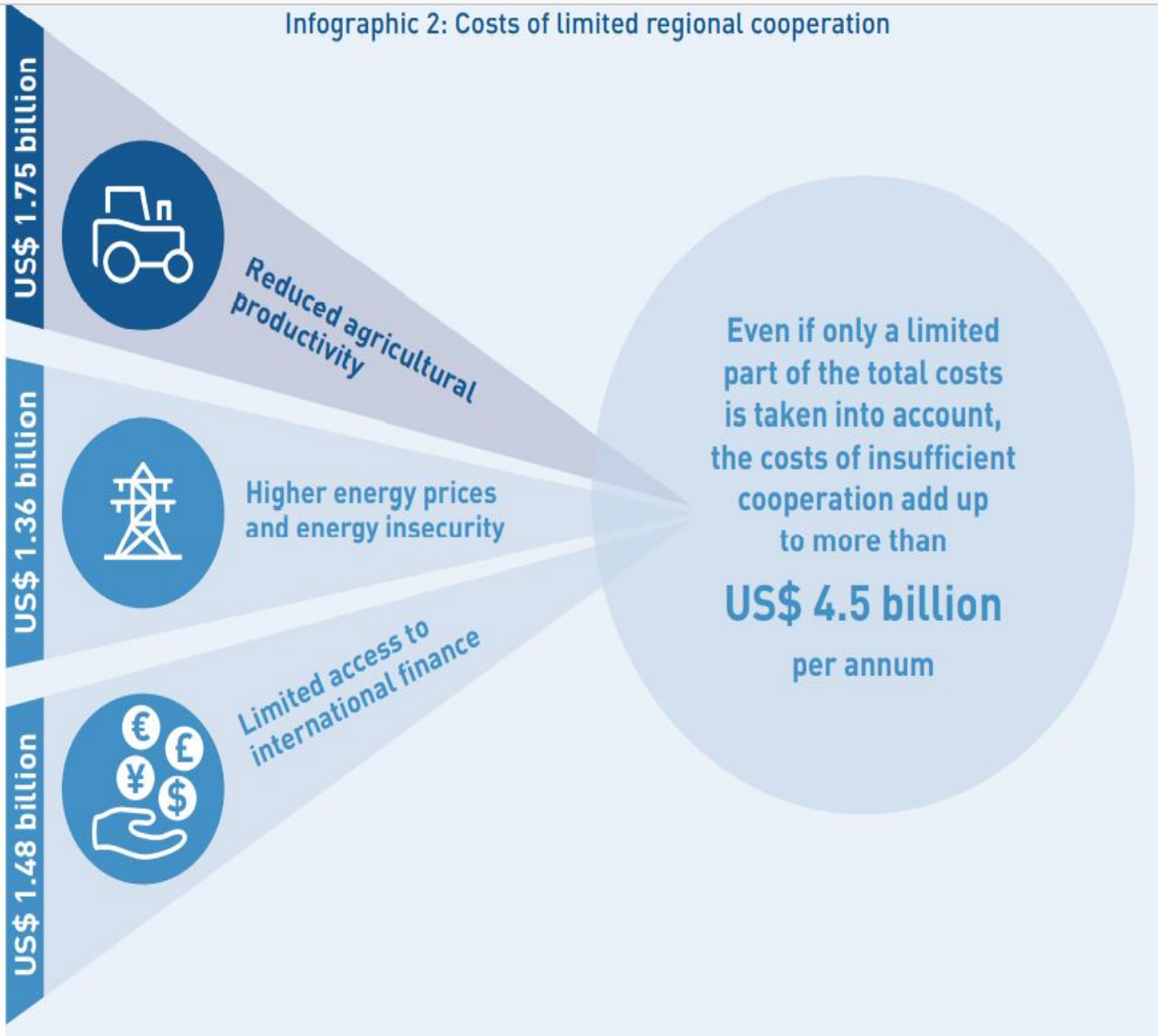
Draw

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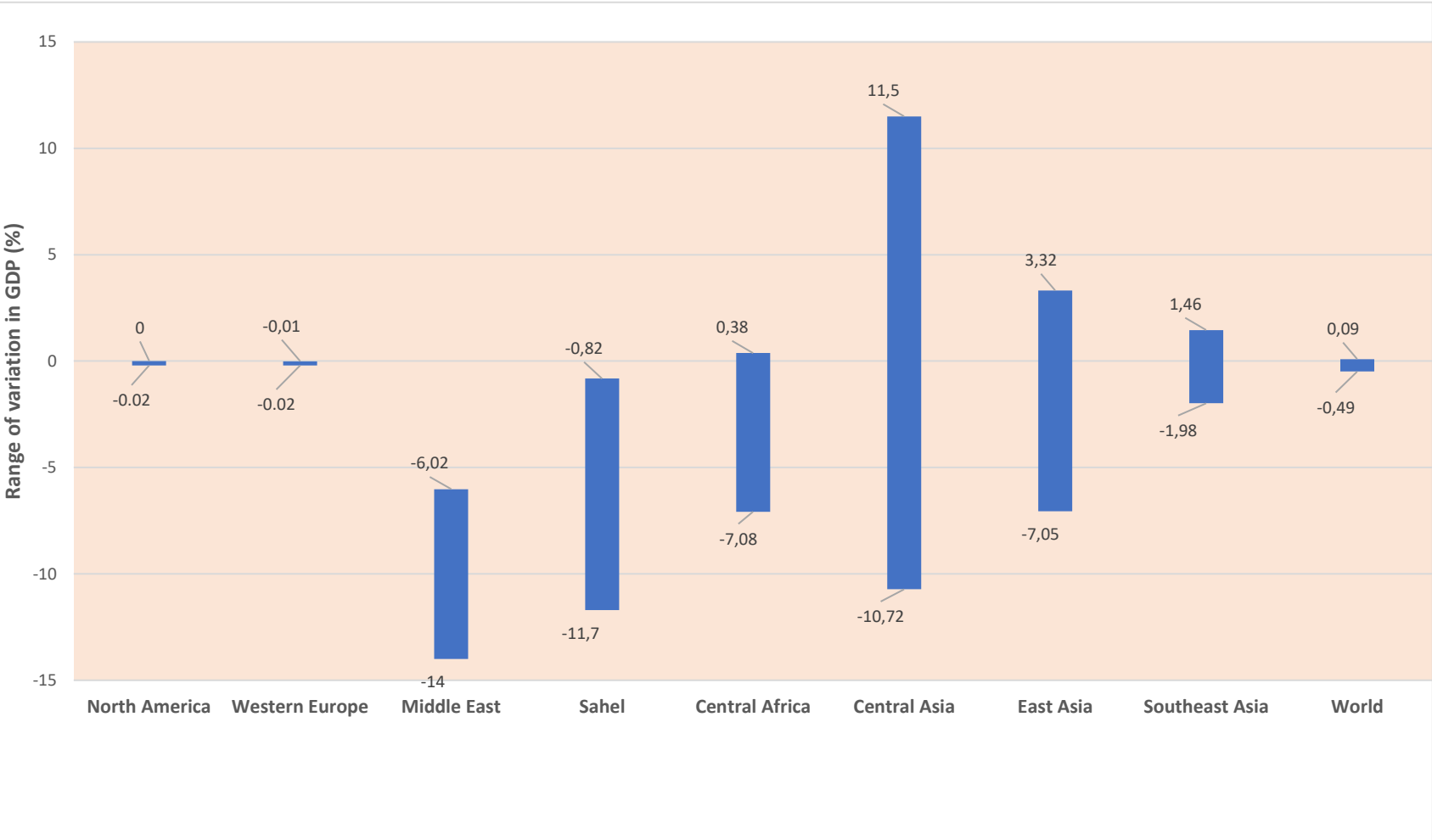
Erase



Infographic 2: Costs of limited regional cooperation



Climate-related impacts on GDP in 2050 (ranges of impacts determined by policies)



Source: High and Dry: Climate Change, Water and the Economy, World Bank Group 2016

«Об утверждении Стратегии управления водными ресурсами и развития сектора ирригации в Республике Узбекистан на 2021–2023 годы».

- увеличение доли каналов с бетонным покрытием
- уменьшение орошаемых площадей с низким уровнем водообеспечения
- доведение внедрения водосберегающих технологий орошения с 308 тыс. до 1,1 млн га, в том числе технологий капельного орошения – с 121 тыс. до 822 тыс. га;
- сокращение площади засоленных земель;
- перевод на автоматизированное управление на основе цифровых технологий 60 крупных объектов водного хозяйства;
- ведение мониторинга учета потребления электроэнергии и расхода воды;