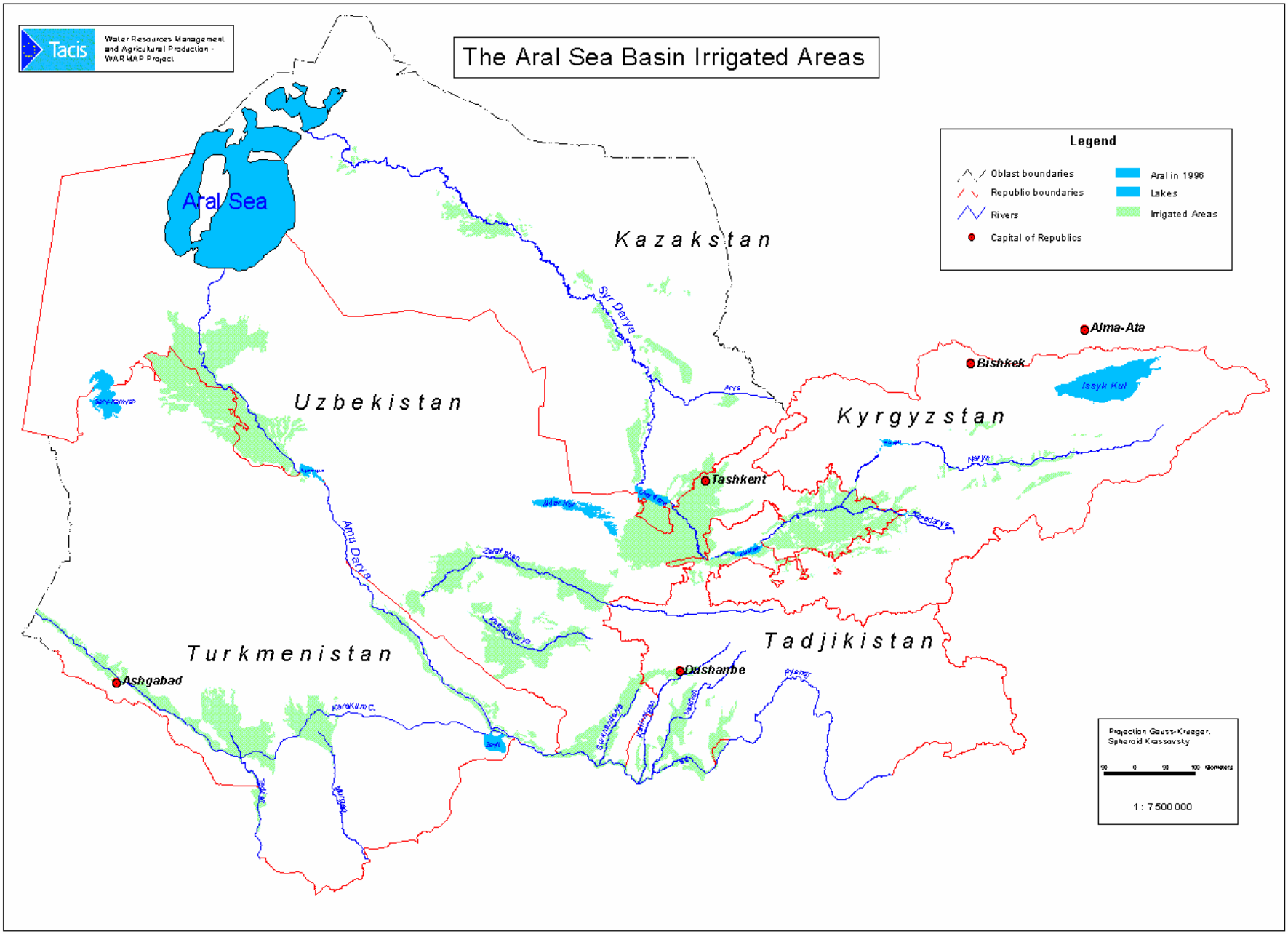
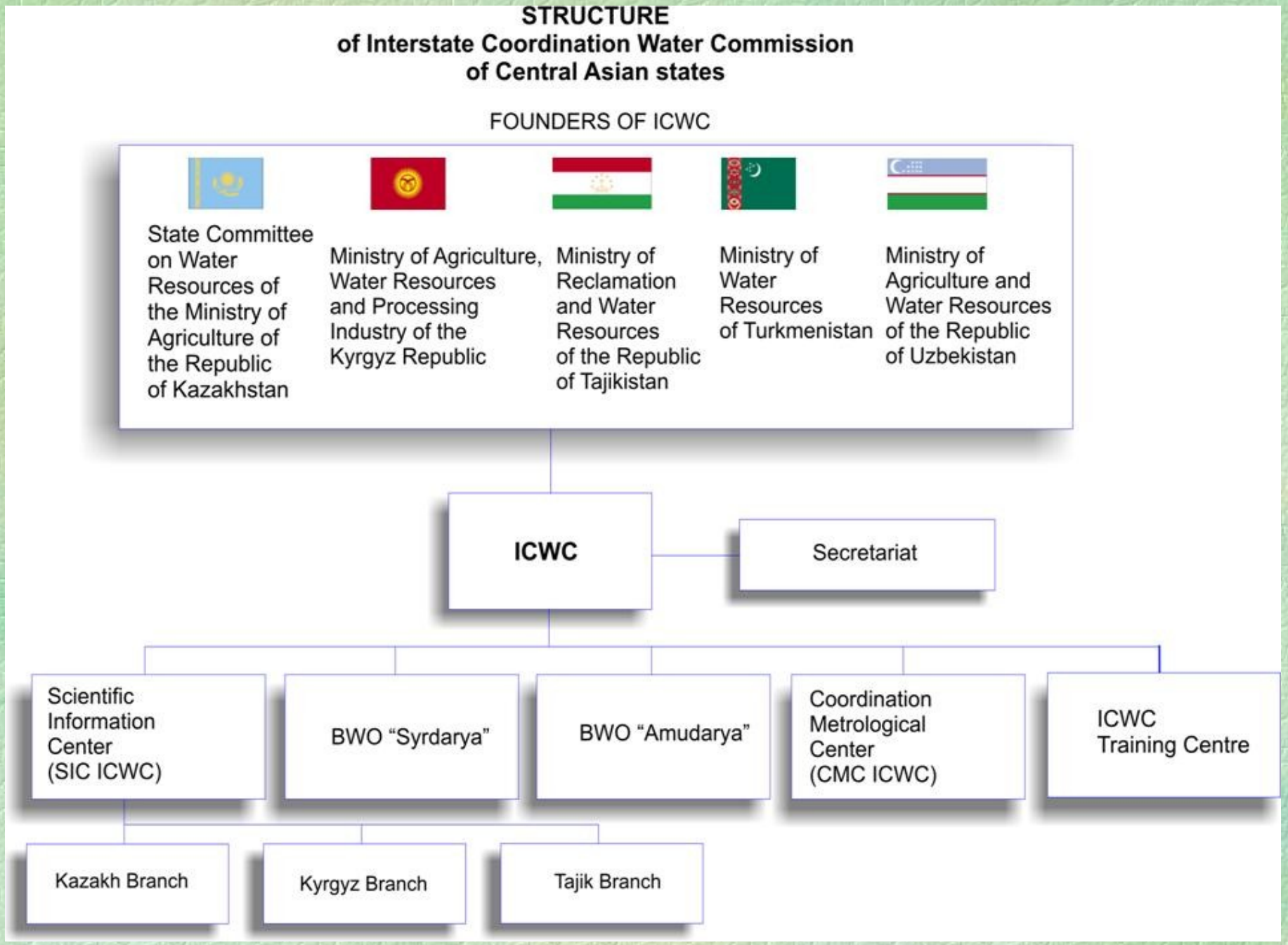
Interstate collaboration in the Aral Sea basin – success and problems

Thessaloniki, Greece

15-18 October 2008


Tacis
Water Resources Management and Agricultural Production - WARMAP Project
The Aral Sea Basin Irrigated Areas
Legend
Oblast boundaries
Republic boundaries
Rivers
Capital of Republics
Aral in 1996
Lakes
Irrigated Areas
Aral Sea
Kazakstan
Uzbekistan
Kyrgyzstan
Turkmenistan
Tadjikistan
Syr Darya
Amu Darya
Alma-Ata
Bishkek
Issyk Kul
Tashkent
Ashgabad
Dushanbe
Karakum C.
Projection Gauss-Krueger, Spheroid Krassovsky
1 : 7 500 000

STRUCTURE
of Interstate Coordination Water Commission of Central Asian states



Scientific Information Center of Interstate Coordination Water Commission is engaged in **problems of water resources management** in the Aral Sea basin.

Scientific Information Center developed the **complex of management optimization models** of the Aral Sea basin (Syrdarya and **Amudarya**) which is known in region and is applied by us at the **decision of practical tasks**

Organization created in 1992, has the status international, organizes a scientific and information exchange between the states of the basin, and develops the recommendations for rational water resources management


Kazakhstan


Kirgizstan


Tadjikistan


Turkmenistan


Uzbekistan

What had achieved?

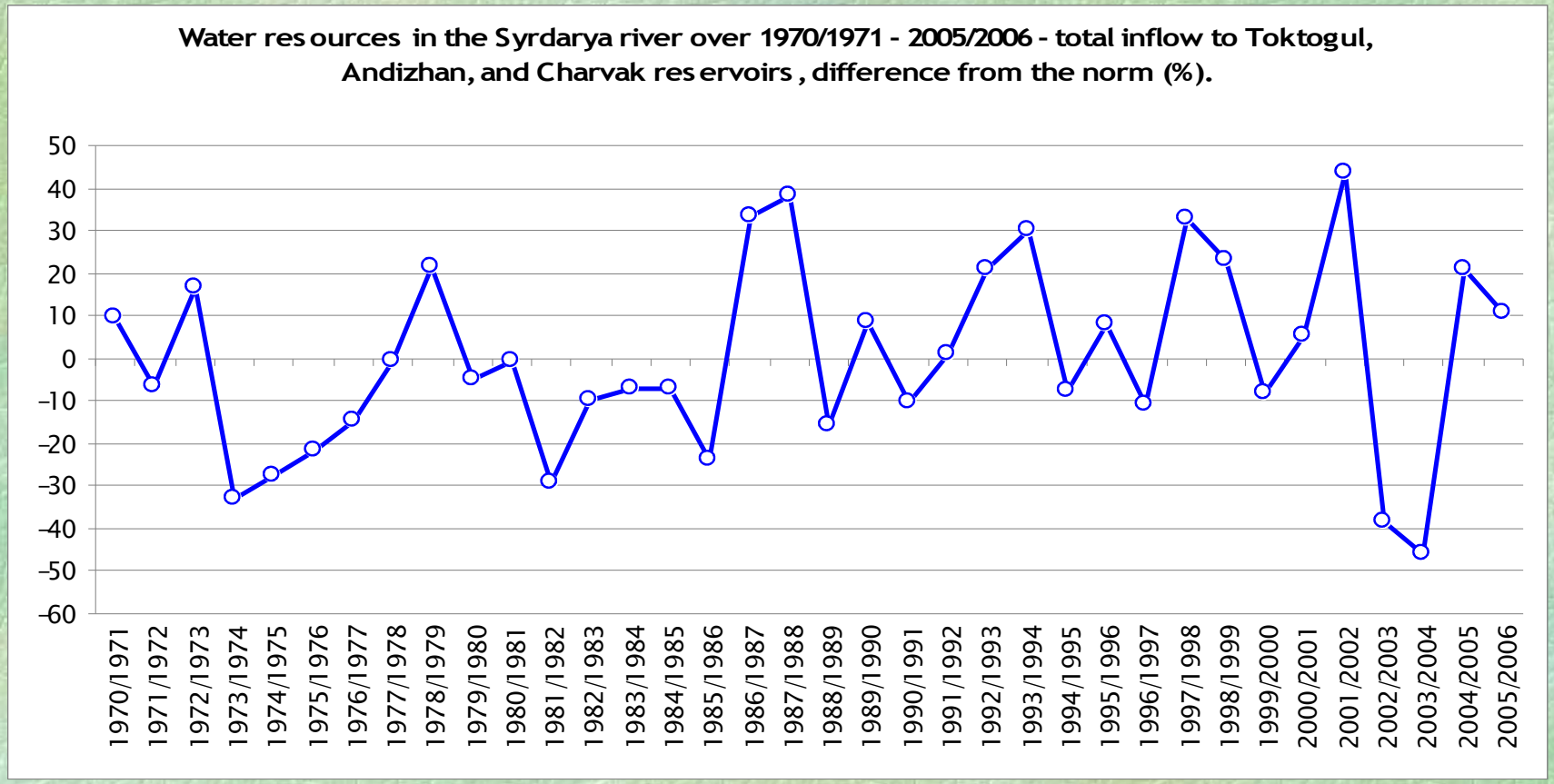
- implemented system of annual planning, monitoring and operation of rivers' flow in close communication between regional and national waters' bodies;
- water allocation and delivery to the national water heads helped to avoid conflict between states even in conditions of 3 water scarce and 4 flood years;
- information system is open for stakeholders of all states and outsider on the website www.cawater-info.net;
- training system with Head quarter and their branches was organized and has been functioning successfully;
- average water delivery to irrigated lands was reduced from 14,0 thousand m3/ha in 1990 to 11500 m3/ha in 2007.

Present challenges

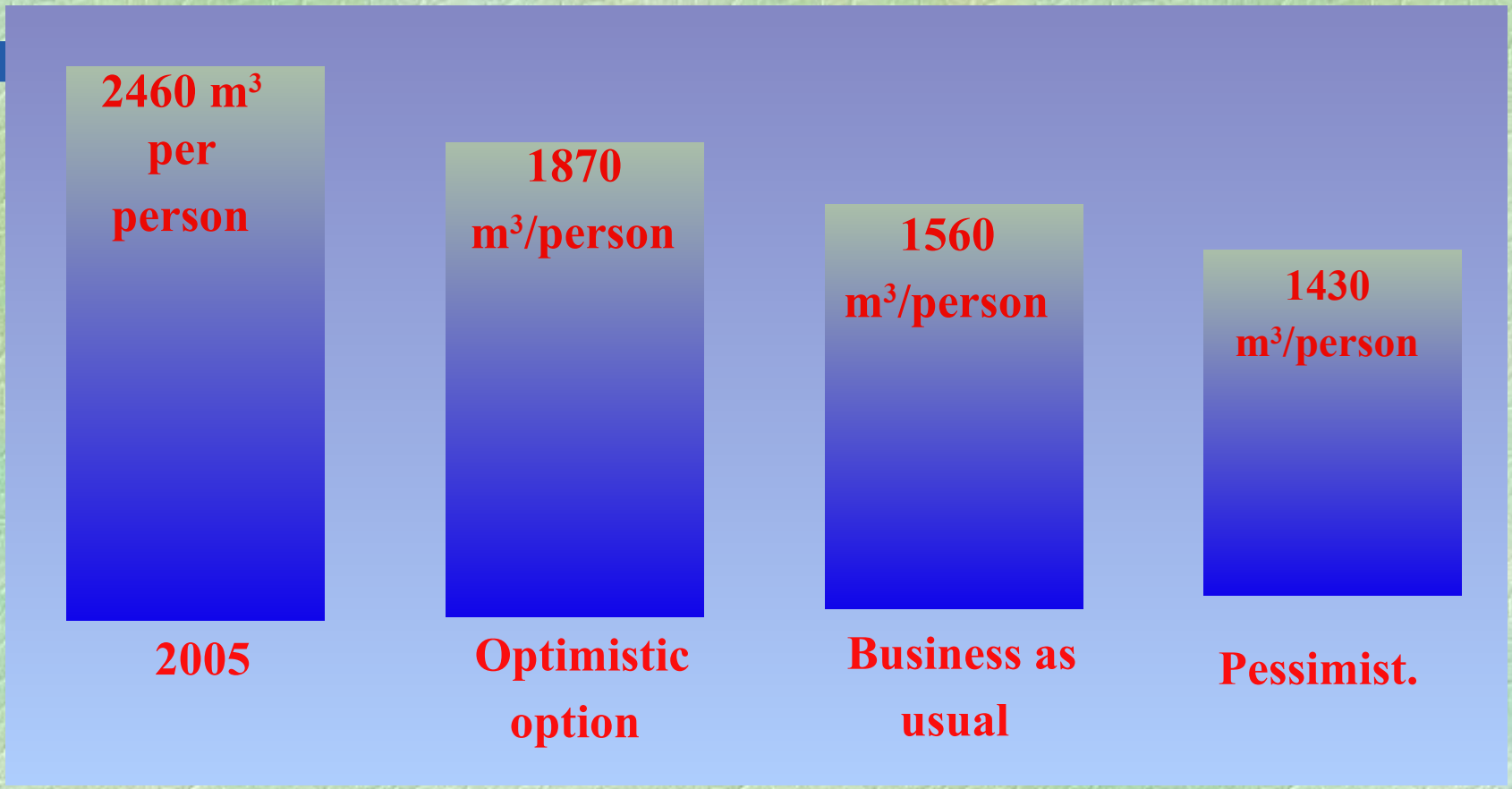
- population growth
- urban area growth
- increasing environmental demand
- irrigated area expansion
- climate change
- decline of agricultural production
- sudden reduction of government support and investments
- increase of operational needs
- weakened staff capacities

Climate impact

Increase in scale and frequency of extreme phenomena

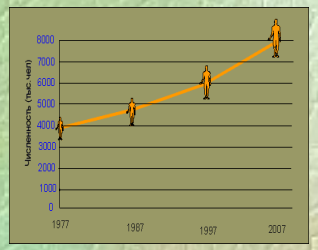


What can we expect in 2030?



Optimistic scenario

The population growth have tend to decreasing and will be 0.98% per year up to 2020.



High level of regional integration

Irrigation rate –9,4 th. m3/ha

Growth rate of gross national product:

6-8% 2000-2010

8-10% 2010-2015

~6% 2015-2020

Domestic water use – 0.08 th. m3/ person/year (220 l/day)

What should be done

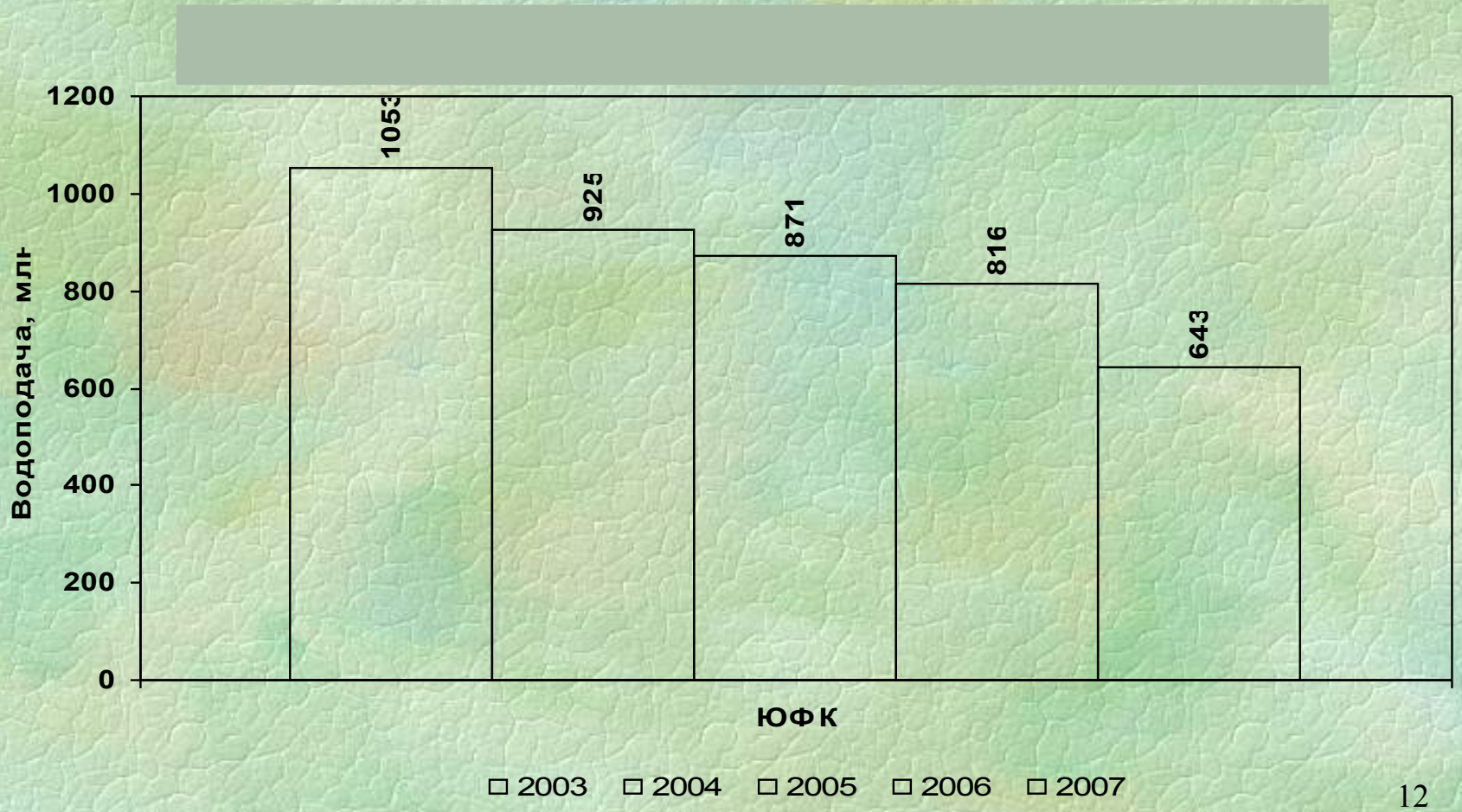
- **regulation of population grow;**
- **adaptation to climate change;**
- **increase degree of this regulation;**
- **achievement of high degree of collaborative (not only coordinative and communicative) relations between riparian countries and different branches of economy; avoiding conflict between "upper watershed", interested in hydropower and low and middle reaches, interested in ecology and irrigation;**
- **implementation of IWRM;**
- **creation of strong legal and juridical framework of interrelation and collaboration;**
- **implementation of financial tools for sharing cost and benefit in the transboundary waters.**

IWRM is a system of management that should include integration of:

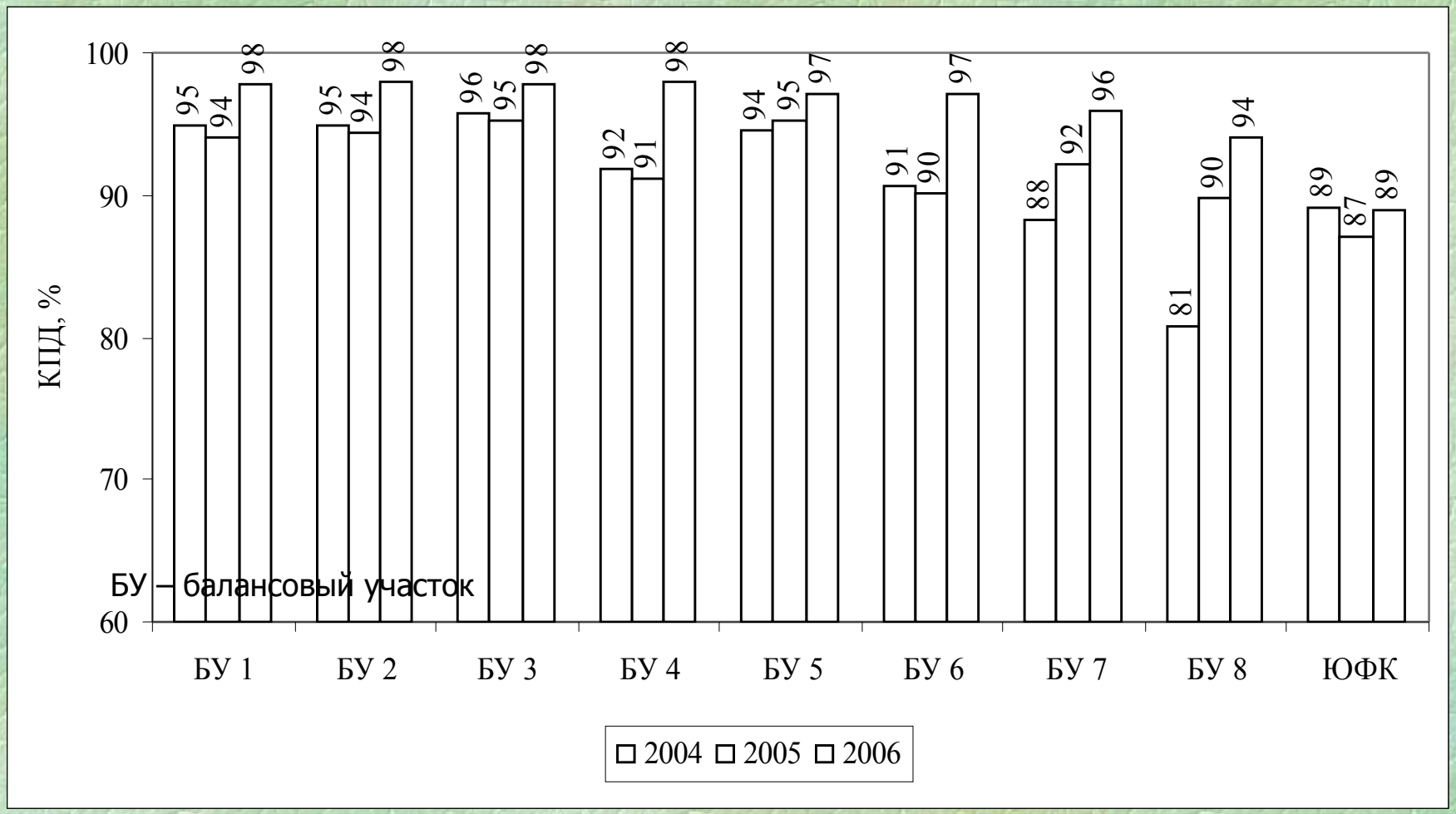
- all types of water,
- all levels of water hierarchy [basin – system – canal – WUAs – farmers or water consumers] from "bottom to top" by requirements and inputs and from "top to down" by limitations and rules;
- all branches of water systems on the horizontal level [hydropower – water supply – irrigation – fishery – nature];
- civil society and water management organizations;
- nature and society.

All types of integration need to be oriented towards the achievement of potential productivity of water in each water use.

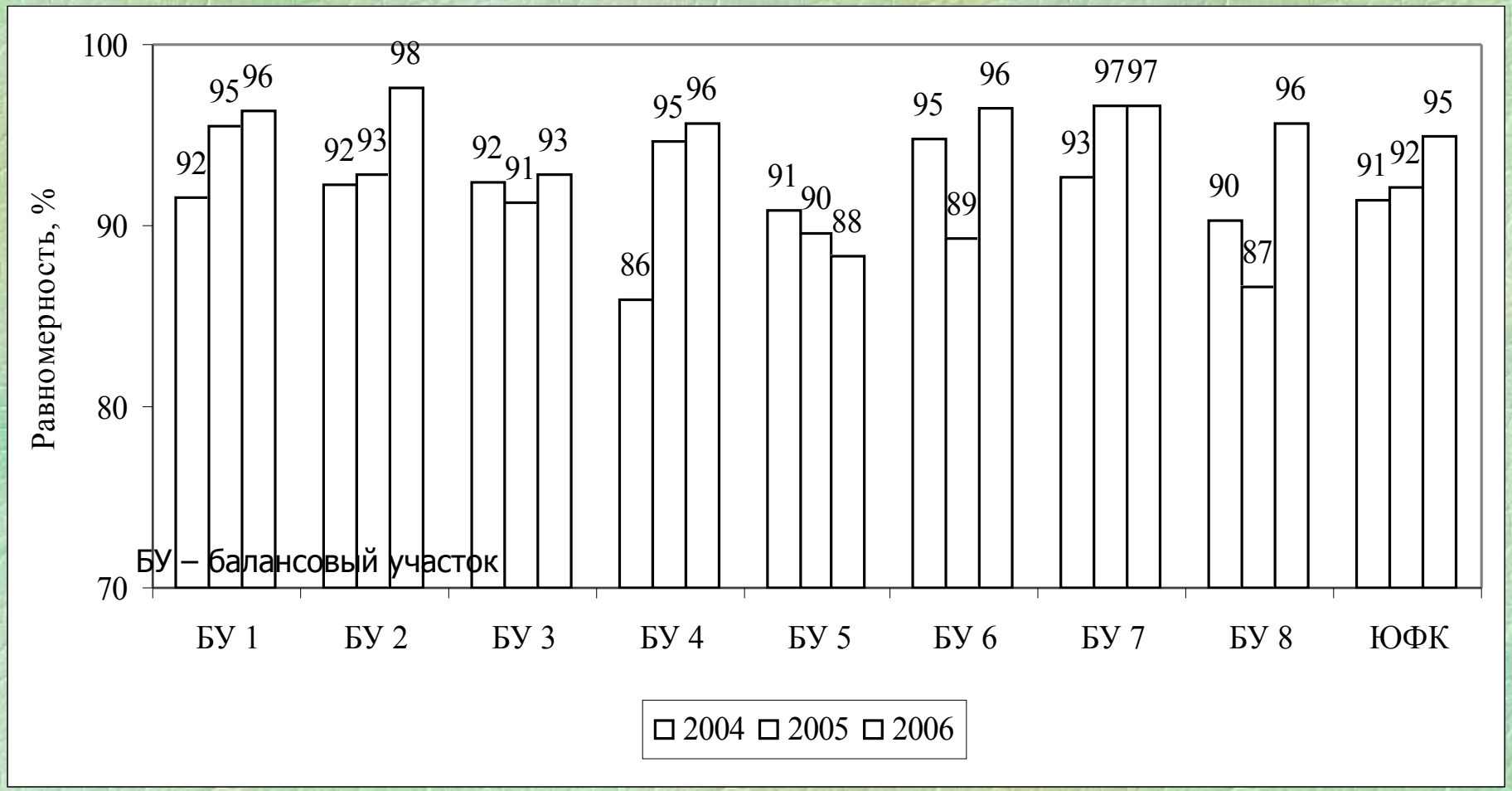
Adoption of IWRM in the Fergana Valley



The Southern Fergana Canal. Efficiency (%). Vegetation period



The Southern Fergana Canal. Uniformity. Vegetation period.



Aral Sea basin- innovation tasks- S&T

Scenarios of future development

Increase of used water resources	Increase of water productivity	Improvement system of water management	Environmental and social dimensions
•Clarification of water losses in rivers •Particular demineralization of CDV •Improvement of water forecast	**Implementation of IWRM Extension** service **Water measuring for water users** **Mutual use of surface and ground water**	**SCADA implementation** **Water energy nexus** **Legal tools** **Proceeding of operation** **Training**	**Ecological flow** **RS monitoring of rivers delta lands** **Aral Sea coast protection** **Aral Sea decision** **Climate change adapt**

With the support of CIDA, USAID and SDC, BWO "Syrdarya" together with SIC ICWC started implementing SCADA in 10 stations. This system allows for continuous registration of water discharge, level, and salinity, as well as for improvement of water distribution accuracy at the main off-takes from ± 10 % to ± 2 %. It is planned to cover the mid-stream up to Chardara by 2010 together with SDC.

Water productivity in Central Asia implies, first of all, land productivity under minimum water consumption;
the promotion of extension services for farmer training can also contribute to the reduction of soil cover degradation, at which the new direction of OSCE is aimed.

The future in hands of our children

We should learn to look forward!
Training of future water leaders!

Water end education

Our future is a return to traditions of the past, that includes extremely careful respect, saving, justice, maintaining the clean water, conventional water use traditions with mirabs, aryk-aksakals, water khoshars. Let's return to old postulates with a new level of our knowledge, experience and technical opportunities!