

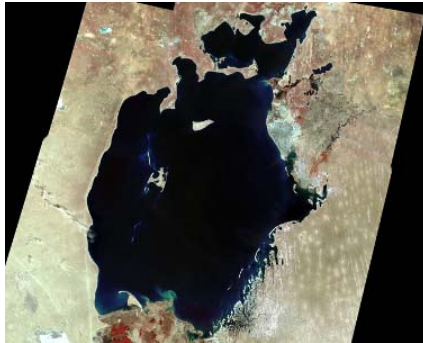


## **Annual progress and update of concrete initiatives**

### **Central Asian IWRM Resource Center**

Vadim Sokolov  
Regional Coordinator  
GWP CACENA

The 7<sup>th</sup> Governing Council Meeting of the Asia Pacific Water Forum



Aral Sea in 1973



Aral Sea in August 2005



Aral Sea in August 2009

# Aral Sea Basin Profile

| Indicator                               | Unit                   | 1960  | 1970  | 1980  | 1990  | 2000  | 2008  | Forecast (2020) |             |
|---|------------------------|-------|-------|-------|-------|-------|-------|-----------------|-------------|
|   |                        |       |       |       |       |       |       | Optimistic      | Pessimistic |
| Population                              | Million                | 14.6  | 20.3  | 26.8  | 33.6  | 41.8  | 47.5  | 54              | 70          |
| Irrigated area (netto)                  | 1 000 ha               | 4510  | 5150  | 6920  | 7600  | 7896  | 8100  | 9330            | 9300        |
| Irrigated area per capita               | hectare                | 0.31  | 0.27  | 0.26  | 0.23  | 0.19  | 0.17  | 0.16            | 0.12        |
| Total water diversion                   | km <sup>3</sup> /year  | 60.61 | 94.56 | 121   | 116   | 105   | 98    | 105             | 117         |
| Including for irrigation                | km <sup>3</sup> /year  | 56.15 | 86.84 | 107   | 106   | 94.66 | 89    | 86.8            | 96.7        |
| Specific diversion per hectare          | m <sup>3</sup> /ha     | 12450 | 16860 | 15430 | 14000 | 11850 | 10990 | 9300            | 10400       |
| Specific diversion per capita           | m <sup>3</sup> /capita | 4270  | 4730  | 4500  | 3460  | 2530  | 2065  | 1935            | 1670        |
| GNP                                     | Bln.US\$               | 16.1  | 32.4  | 48.1  | 74.0  | 27.5  | 40.0  | 109             | 77          |
| Contribution of agricultural production | Bln.US\$               | 5.8   | 8.9   | 18.3  | 22.0  | 9.0   | 15.5  | 31              | 20          |

# **Introduction**

## **Legal Arrangements**

**1992 Agreement and ICWC establishment**

**Kyzyl Orda Summit, 1993 = ICAS + IFAS**

**Nukus Declaration, 1994 = ASBP-1**

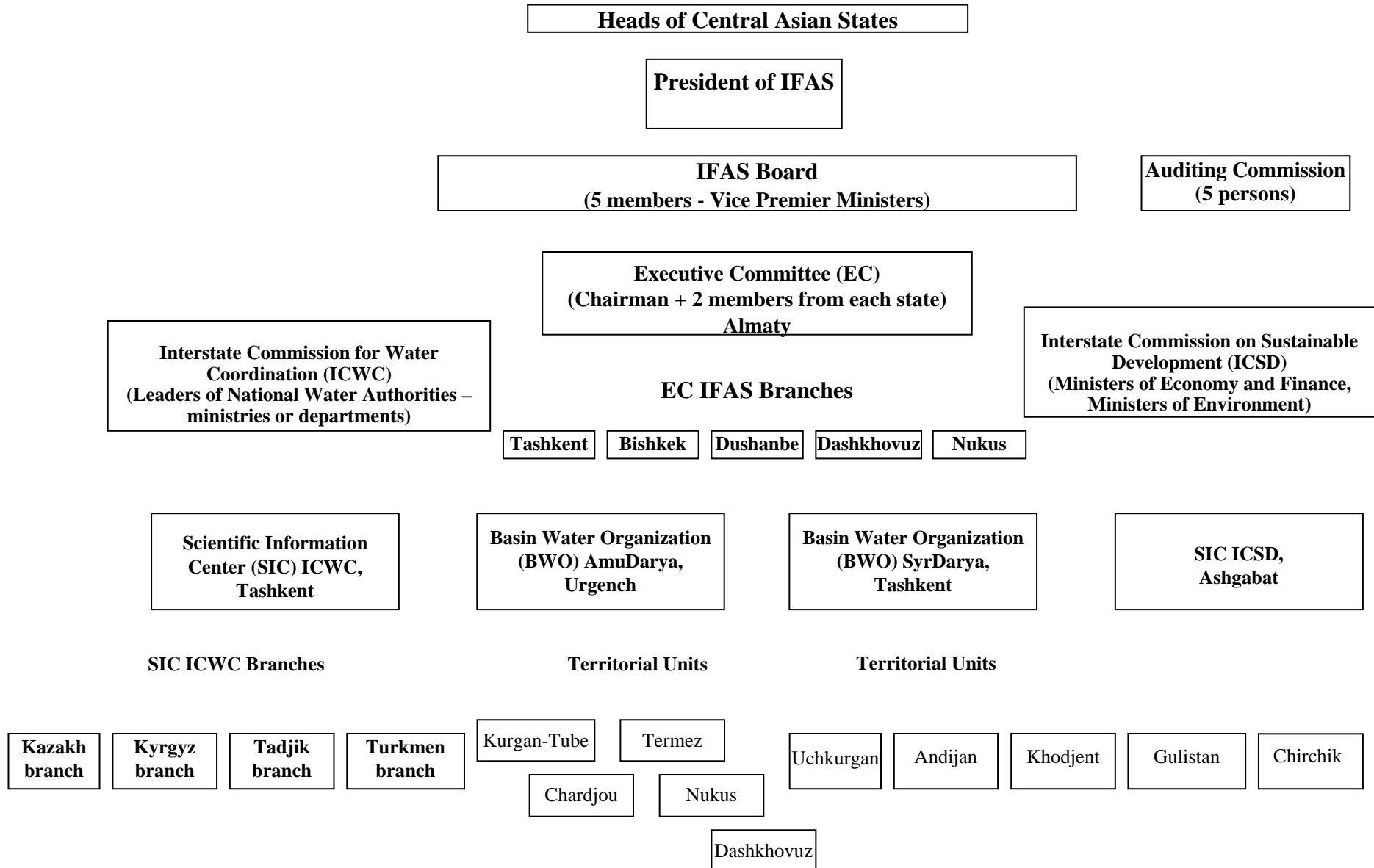
**Syrdarya Agreement 1998**

**Ashgabad Summit, 1999 = Status of IFAS**

**Dushanbe Summit, 2002 = ASBP-2**

**Almaty Summit, 2009 = start preparations for ASBP-3**

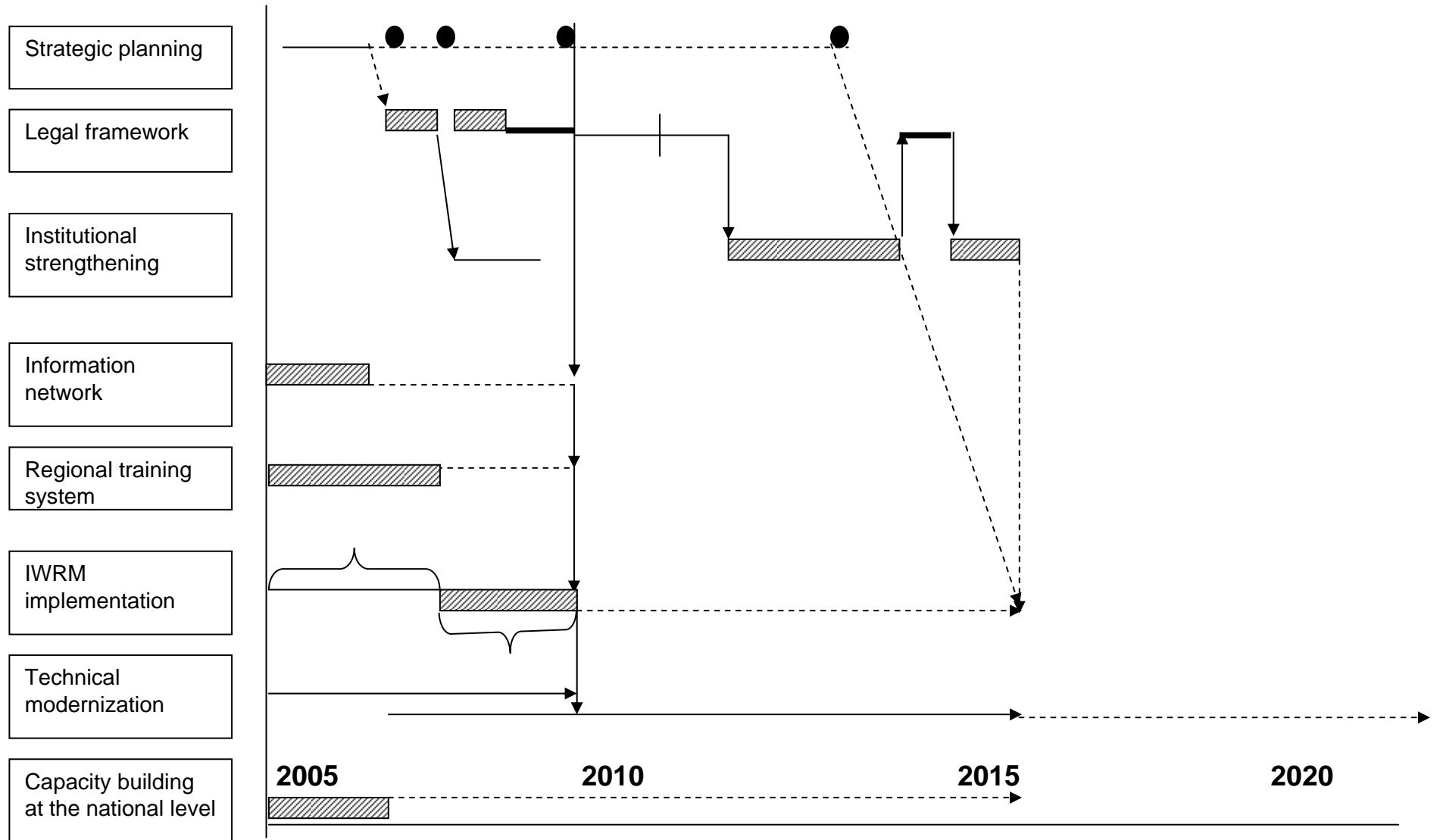
# Institutional Arrangements for the Aral Sea basin



# Challenges for Water Security

- **Population growth, especially in urban areas**
- **Conflicts around water resources**
- **Non-coordinated planning**
- **Unsustainable water resources management**
- **Change in cropping patterns**
- **Low world market prices for agricultural products**
- **Increased Hydro capacity usage**
- **Lack of ecosystem approach and IWRM application**
- **Overexploitation and pollution of water ecosystems**
- **Climate change**
- **Absence of coordinated financial mechanism at the regional level**

# IWRM Progress in the Aral Sea Basin



# IWRM Solutions for Water Security

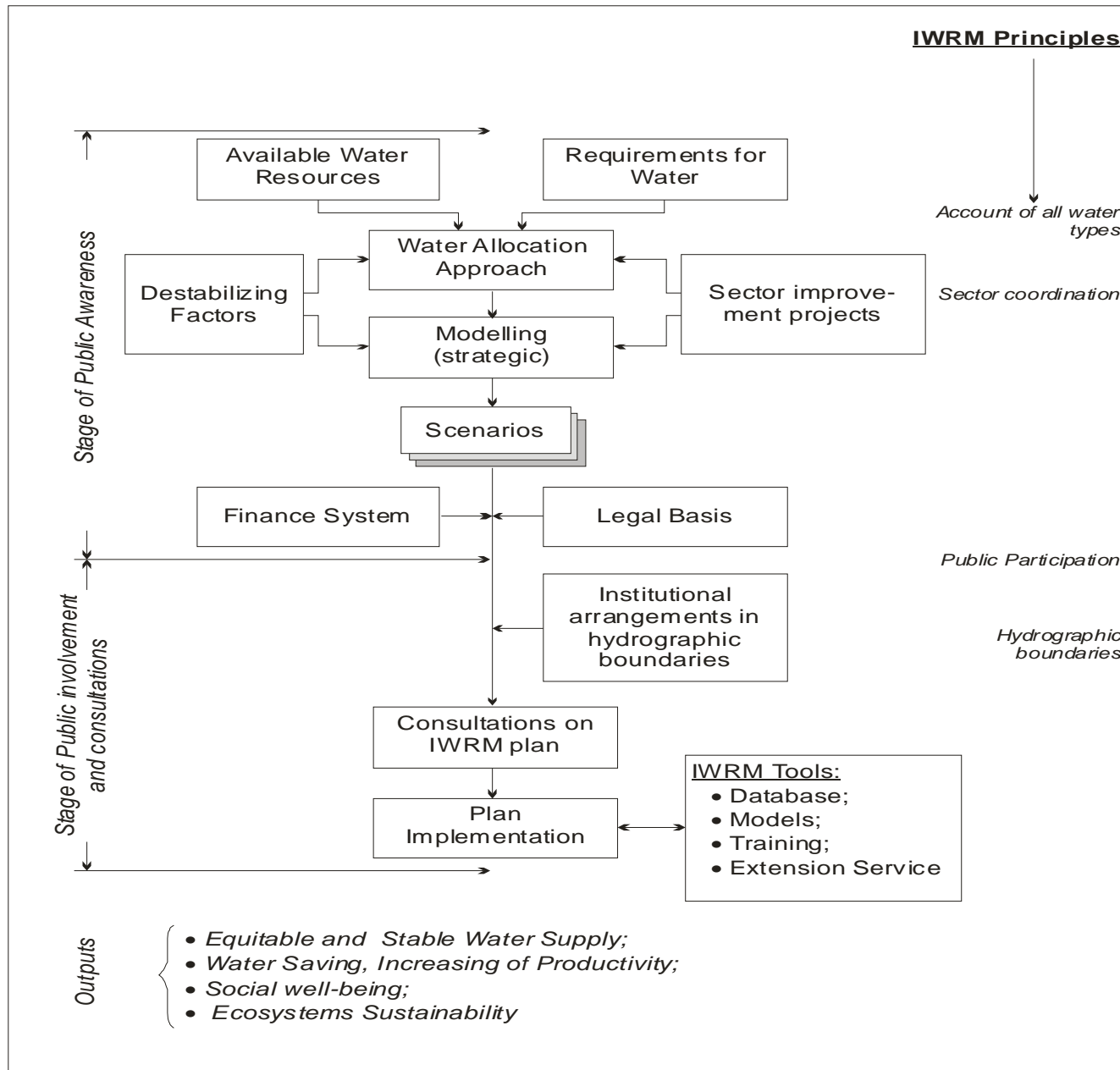
## De-fragmentation of IWRM

| Component                 | Tasks  | Indicators   |
|---------------------------|--|--|
| Available Water Resources | Monitoring<br>Development<br>Protection      | Renewability:<br>Level/Volume/Quality/Variability        |
| Infrastructure            | Maintenance & Operations                     | Cost / Efficiency/ Life time                             |
| Demands                   | Assessment<br>Demand Management              | Level / Volume / Quality / Time / Address                |
| Allocation                | Inclusiveness<br>Negotiations<br>Regulations | Criteria of Equitable and Reasonable Share/Quota         |
| Delivery                  | Good Service                                 | Equitability/Stability<br>Minimum of unproductive losses |
| Use / Utilization         | Production / Water Saving                    | Productivity<br>(more crop per drop)                     |
| Product / MDGs            | Sustainable Development                      | Index of Non-Sustainable Use                             |

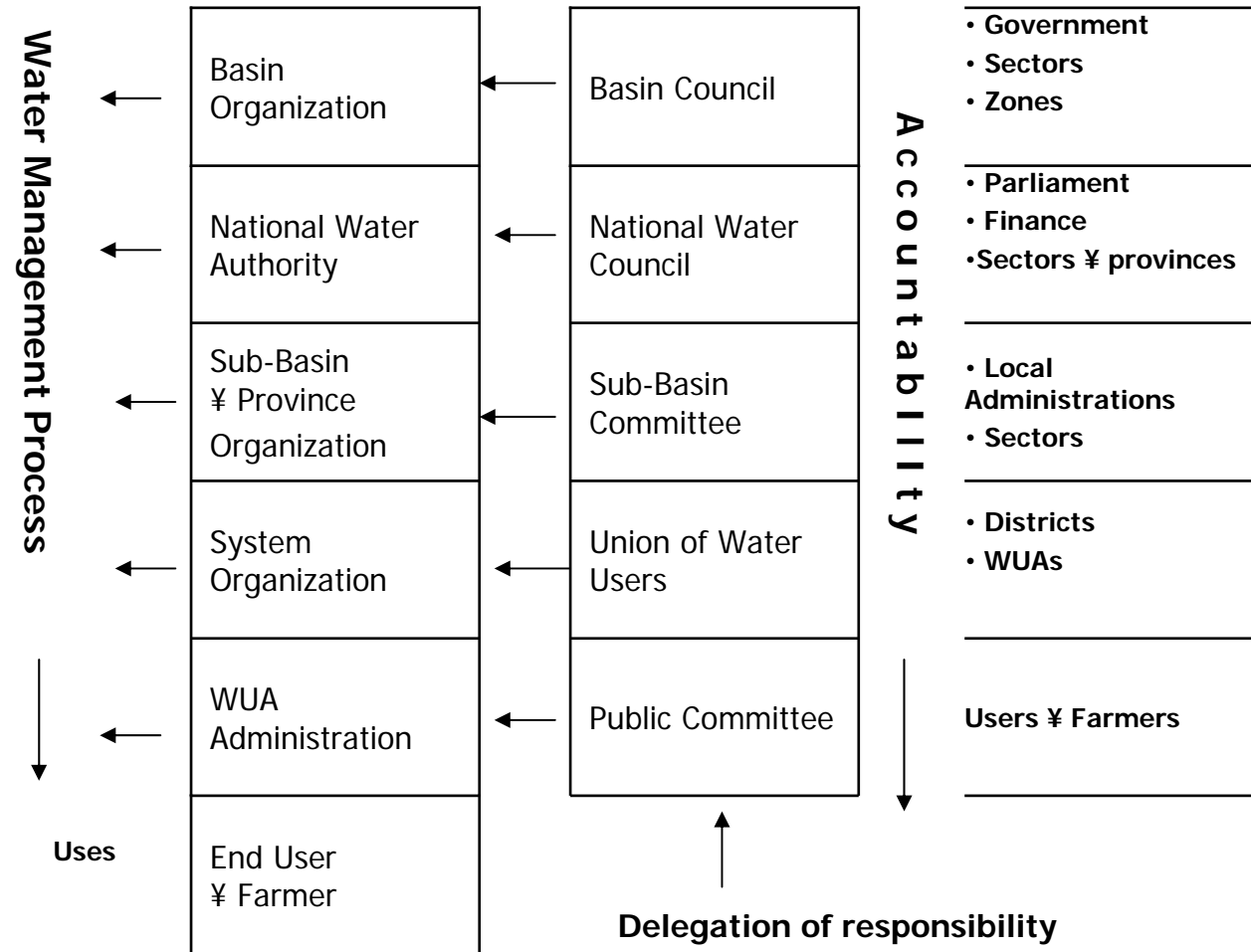
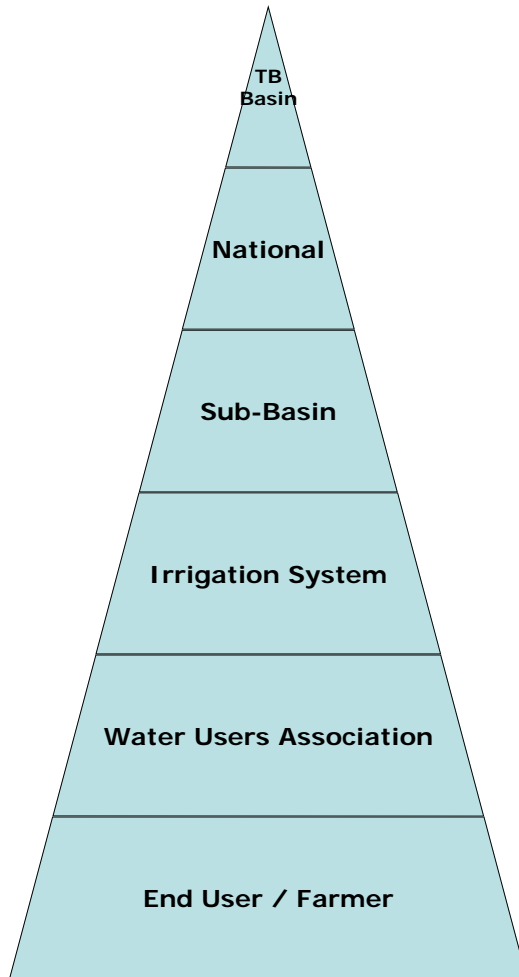
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# Steps for Basin IWRM Planning



# Institutional Arrangements and Public Participation



# Legislative Framework for IWRM

**Effective water resources policy should be based on strong legislative framework, including:**

**Definition of roles and responsibilities of the Government, water governance institutions, stakeholders, users;**

**Definition of social, economic and ecological value of water and aquatic ecosystems;**

**Definition of strong position concerning institutional reforms, privatization, roles of local administrations and stakeholder participation;**

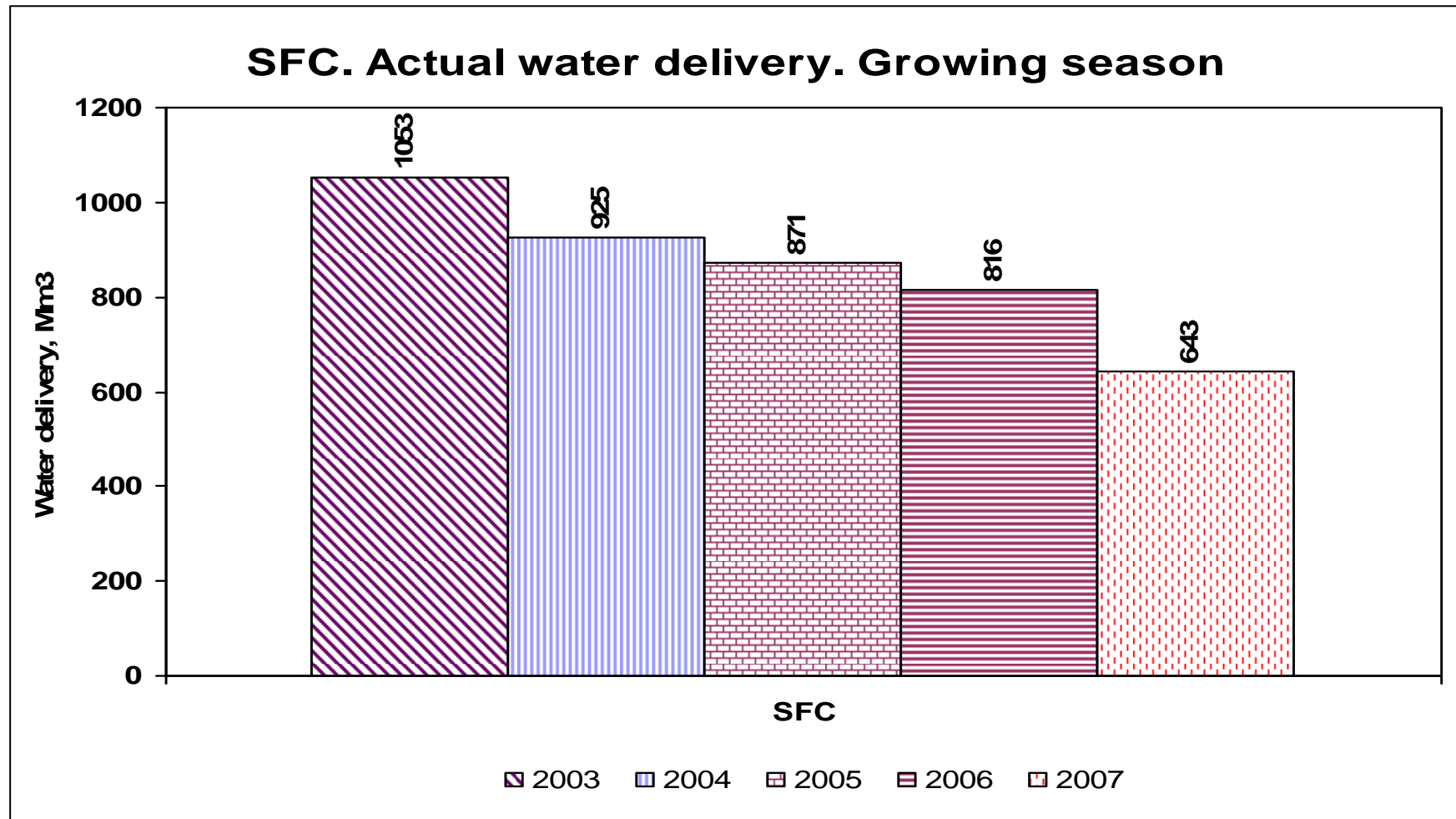
**Definition of water rights, WUA roles, rules of game among sectors;**

**Definition of interrelations between sectors – agriculture, energy, environment and others, and links with general socio-economic development.**

# **Tools implemented into practice in Fergana Valley:**

1. Management-information system
2. System of water distribution and assessment indicators
3. Improvement of water accounting system
4. Improvement of pumping water operations
5. Refinement of water consumption rates
6. Measures for land reclamation
7. Know-how on water and land productivity improvement
8. Financial and economic tools

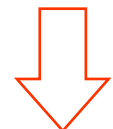
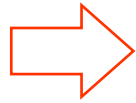
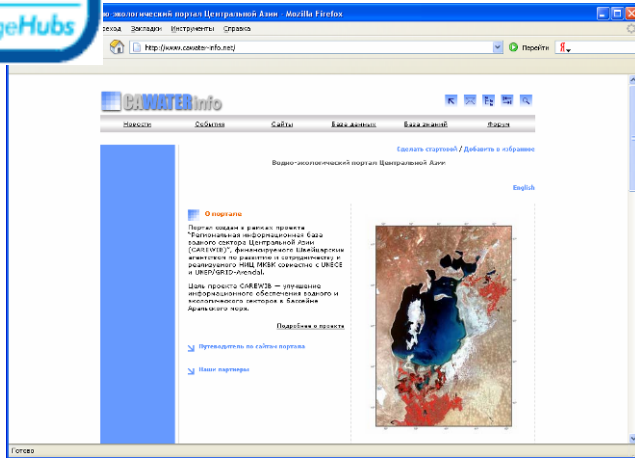
# Implementation of IWRM in Fergana Valley allows to reduce water intakes





# Knowledge Networking and Partnerships

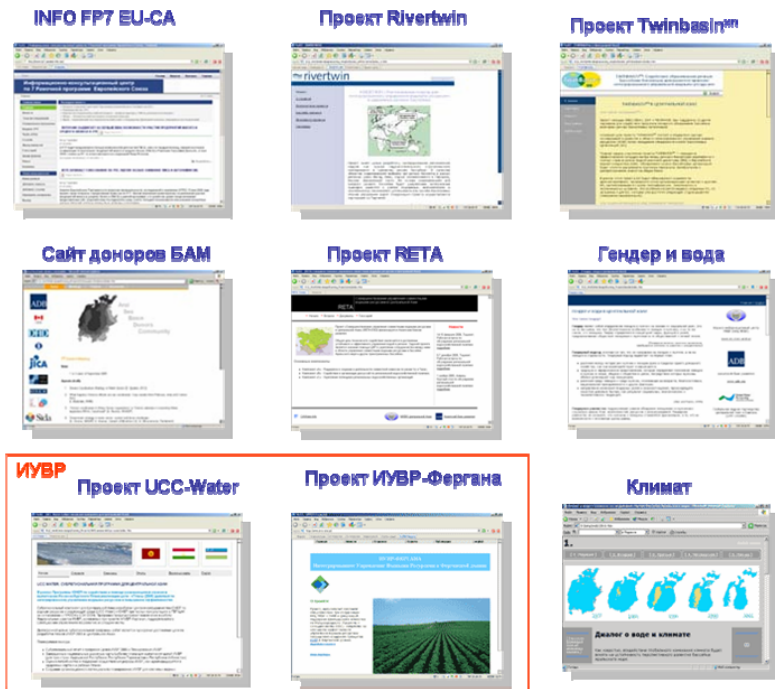
[www.cawater-info.net](http://www.cawater-info.net)



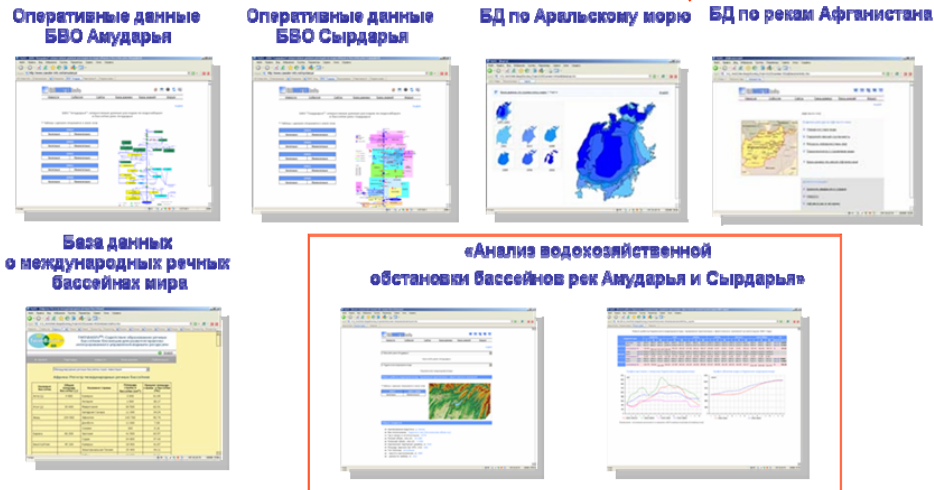
## Knowledge Base



## Projects



## Database and Analytical Tools






## Clients of the IWRM Knowledge Hub

- Research, design, and environmental institutions, including:
  - Scientific Information Center of the Interstate Sustainable Development Commission;
  - Regional Hydrological Center;
  - National Hydrometeorological Services of the Central Asian States.
- Water management organizations of the Central Asian Region.
- Institutions of higher education in CAR (majoring in hydro-engineering, agriculture, hydrology, and other areas).
- Ministries of Emergency Situations of CAR States.
- Agencies dealing with monitoring of CAR water resources management, quality and quantity (meteorological, hydrometrical, hydrogeology-reclamation services, institutions of State Committee for Nature Conservation, etc.).
- Agencies dealing with the operation of national and integrated power system of Central Asia.
- Non-governmental, private organizations.
- International institutions and donors.
- Mass media.


# Products and Services (1)

## Knowledge Base “Integrated Water Resources Management: Central Asian Experience”


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Schweizerische Eidgenossenschaft  
Confédération suisse  
Confederazione Svizzera  
Confederaziun svizra



International  
Water Management  
Institute



Global Water  
Partnership  
Central Asia and Caucasus

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### Knowledge base “IWRM: Central Asian experience”

The key IWRM principles accepted in the region:

- The main IWRM objectives - sustainable, stable, reasonable and equitable water supply for all uses and nature.
- Water and environmental governance performed within hydrographic boundaries in accordance with the basin morphology.
- Management accounts the all types of available waters (surface, underground, return) with consideration of the climatic conditions (precipitation and evaporation).
- Public participation not only in governance, but also in funding, maintenance, planning and development.
- Close coordination of water use in the horizontal direction among sectors and in the vertical – among levels of water management hierarchy.
- Information exchange, transparency, openness, accountability.
- Water saving and rational use, combat unproductive losses – the main priority for water users and water agencies.

Critical factors that made IWRM approach so successful for Central Asia:

- The key IWRM principles were clearly formulated and accepted by the key stakeholders
- De-fragmentation of the IWRM into proper components: IWRM = Water Resources Management Process + Governance System + Tools
- Governance system covered all vertical levels of hierarchy and created platform for horizontal (inter-sector) coordination
- The project prioritized legal aspects for practical implementation of the IWRM
- Social mobilization – the principal tool to enable environment for IWRM
- [Orientation to proper indicators](#)

[→ Rubricator](#)

Source:

- Project "Integrated Water Resources Management in Fergana Valley" (IWRM-Fergana)
- [IWRM-Central Asia](#)
- [GWP Caucasus & Central Asia](#)
- [GWP ToolBox](#)

Financial support:

- Swiss Agency for Development and Cooperation

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## Products and Services (2)

### Knowledge Base “Water and Land Resources Use in the Aral Sea Basin”



[Methodology](#)

#### Knowledge Base “Land and Water Resources Use in the Aral Sea Basin”

[По-русски](#)

At present, Central Asian countries have gathered a large quantity of information on practically all issues related to water sector and water use, in particular in irrigated agriculture. However, the use of these materials is complicated enough due to their fragmentariness, sparseness, complicated use and inadaptability to computer technology usage. At the same time, it should be kept in mind that experts and decision-makers, unlike researchers, have no opportunity to study results accumulated in science and practice in full and in detail, and they should present information in a user friendly way. The central idea of development of a knowledge base is to take expertise in land reclamation and water resources, with minimum supplements if possible, and translate it into more formal language of knowledge representation.

Knowledge Base “Land and Water Resources Use in the Aral Sea Basin” includes the following sections:

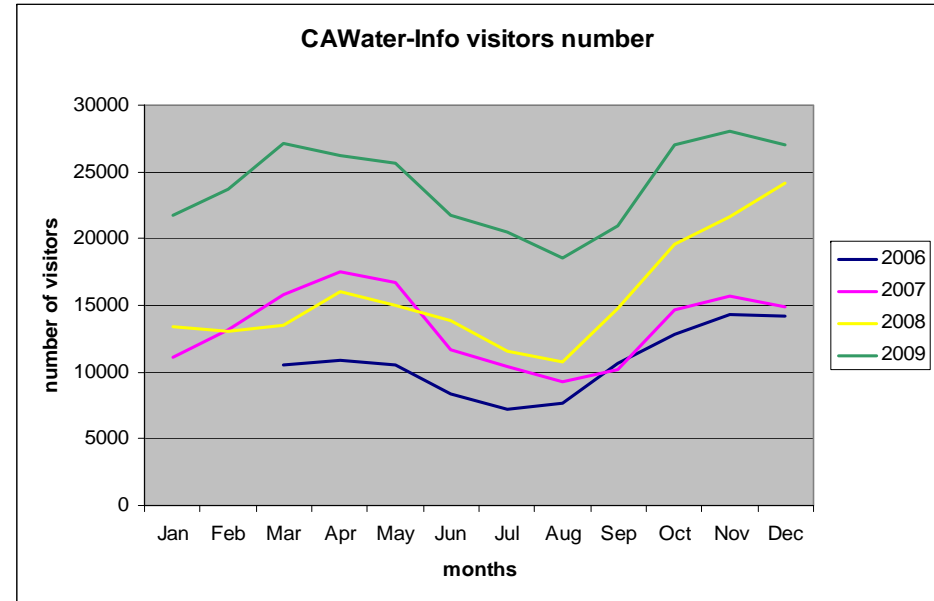
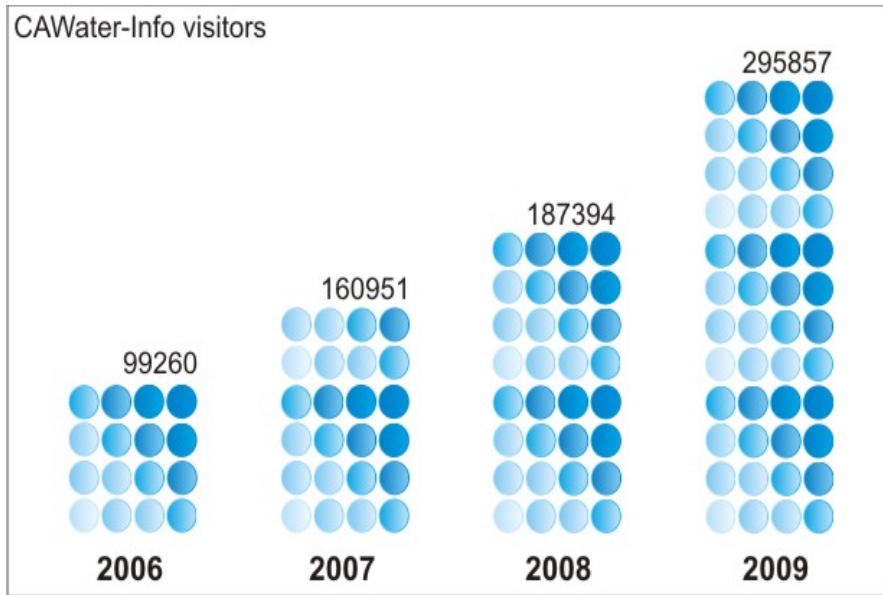
- [physical-geographical characteristics of the region;](#)
- [water resources;](#)
- [water resources use;](#)
- [desertification and monitoring;](#)
- organizational and legal issues of water resources management and financing.

These serve as supportive information structure of the knowledge base being developed:

- [thesaurus;](#)
- [bibliographic database.](#)

The development of a knowledge base using state-of-the-art information technologies makes it possible to maximally effectively use an accumulated information base on materials of completed research projects and scientific publications.

# Statistics on the portal visits in 2006-2009



## Where are our visitors from?





## Further Development Plans

Development of the IS at the regional and national levels:

- Covering the whole CAR by the IS (including areas of the CAR states that are beyond the Aral Sea Basin);
- Inclusion of Afghanistan's data into the IS (GIS layers and as far as possible periodic observation data) within the Aral Sea Basin;
- Creation of a water quality database;
- Widening the regional and national DBs with new information based on models and GIS requirements;
- Extension of information presentation by introducing the basin method (including basin water resources management plans);
- Spatial representation of database statistics by means of GIS interfaces;
- Extension of IS's thematic content (new information blocks on climate, health, drought, snow cover, and glaciers).
- Developing model analytical instruments inclusive of online data analysis



# Knowledge Networking and Partnerships

Training System – Basic Element of the Reforms in Water Sector



Awareness increased,  
professional skills  
improved,  
Mutual understanding  
among water managers  
and users achieved.



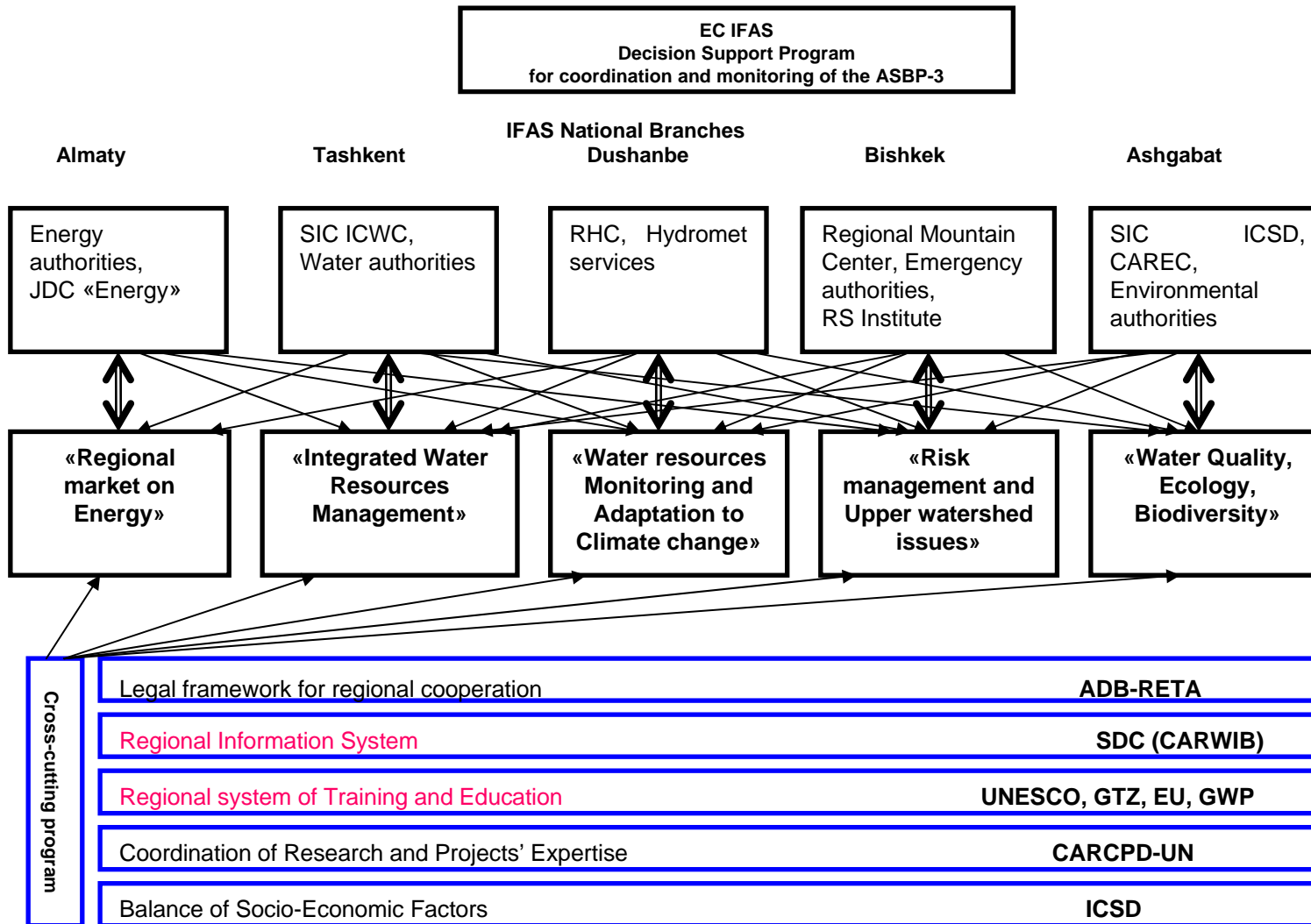


# Knowledge Networking and Partnerships

How GWP CACENA assists in times of trouble...

- Bringing stakeholders together - conferences, workshops, programmes, etc.
- Formulating key issues and presenting them to decision-makers, e.g. transboundary legislation and need for co-operation capacity building
- Implementing IWRM facilitation through a regional work programme
- Setting up CWPs to assist in IWRM national planning, working closely with bilateral and multilateral donors
- Raising political awareness and public awareness
- Publications and dissemination

# Further Development Plans



**THANK YOU !!!**

**Additional information:**

**[www.cawater-info.net](http://www.cawater-info.net)**

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