

# Support to Water Sector Development in Central Asia: The ADB Approach

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# 1. Integrated Approach to Water Resource Management

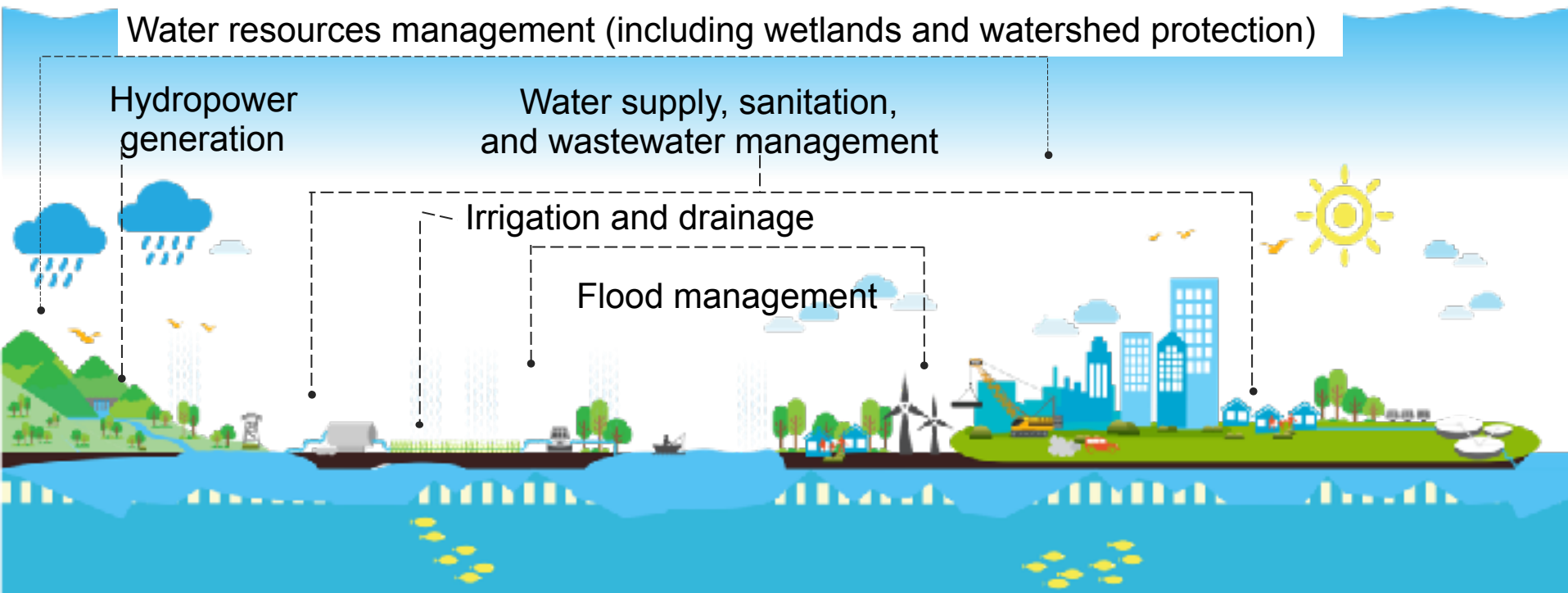
Water resources management (including wetlands and watershed protection)

Hydropower generation

Water supply, sanitation, and wastewater management

Irrigation and drainage

Flood management



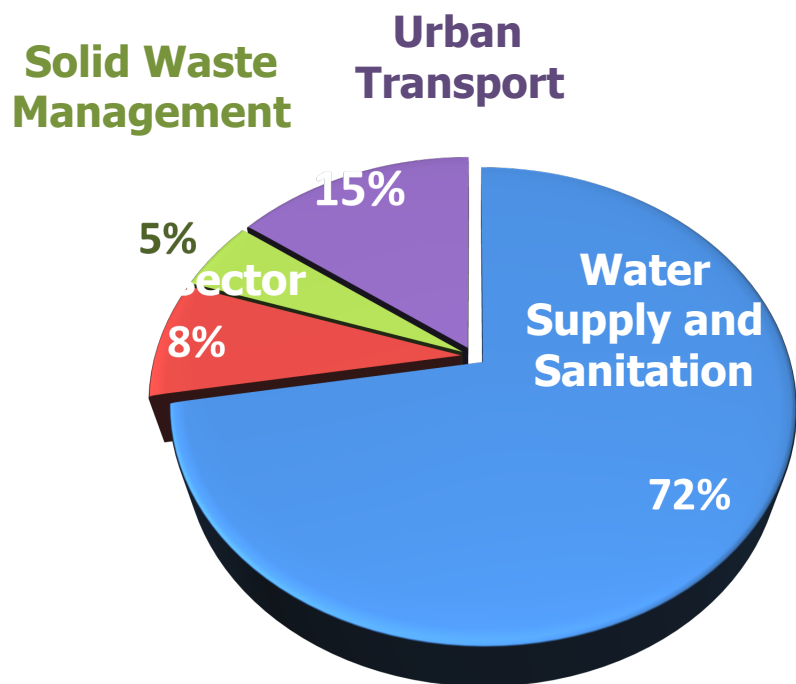
- Process to develop and manage water resources to support socio-economic development in a sustainable and equitable way
- Following a participatory approach, involving stakeholders
- Create an enabling environment (laws, institutions, capacities, etc.)

Key Principles:  
Green Growth; Inclusive Development; Competitiveness

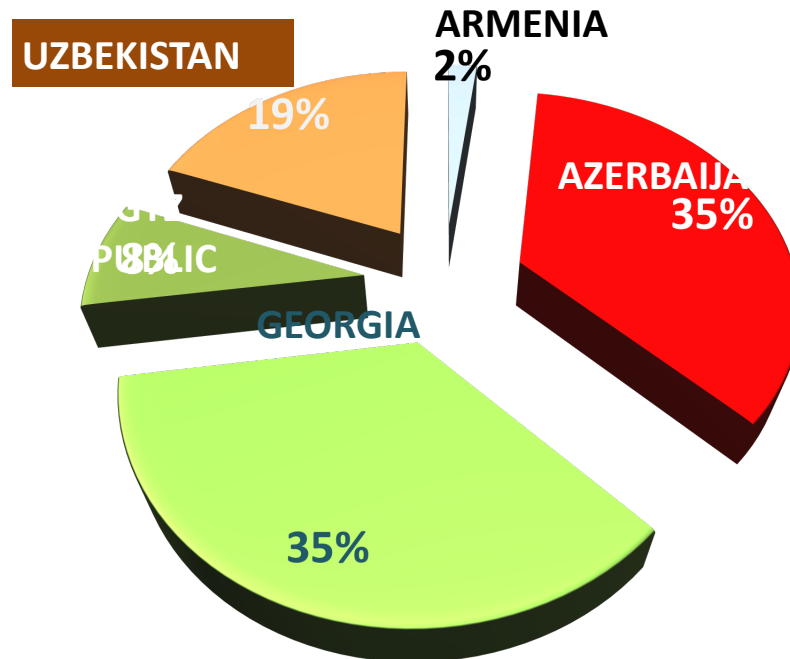


## 2. ADB Urban/Water Sector Portfolio in Central Asia

### Portfolio by SECTOR



### Portfolio by COUNTRY



Note: Projects are indicative, pending ADB Management and Board approval, and approval timelines are subject to change.

# 3. Strengthening Water Management Systems in Georgia

Multitranche financing facility (MFF) - 6 projects - Total **\$500 million**

- Approved on 30 March 2011. Closes on 30 September 2019.

## Impact, Outcomes, and Outputs

Improved health of approximately 335,000 residents through improved water supply and sanitation services in secondary towns.

## Infrastructure Investments

- Water Supply and Sanitation services in Anaklia, Kutaisi, Mestia, Poti, and Ureki (additional towns: Abasha and Bakuriani) – 3 projects (total \$218 million)
- Water Supply and Sanitation services in Zugdidi and Poti (additional towns: Jvari and Gudauri) - 1 Project (\$108 million)
- Sewerage and sanitation system in Zugdidi and Mestia – 1 Project (\$75 million)
- Water Supply and Sanitation services in Marneuli, Bolnisi, and Chiatura – 1 Project (\$99 million)



# 4. Making Water Supply Operations Sustainable in Armenia

- Water Sector Reforms – Legal and Institutional Issues
- Tariff Policy
- Water Metering and Non-revenue Water
- Energy Efficiency
- Management Contract

## Progress of Key Performance Indicators of Armenian Water and Sewerage Company

Main Performance Indicators	Unit	2004 Base Year	2016
Water Supply Duration	Hours/day	4-6	18.7
Water Quality	%	94.0	98.6
Collection Efficiency	%	48.0	90.8
Energy Consumption	Million kWh	64.4	32.0



**ENERGY EFFICIENT PUMPS**



# 5. Improving Water Resource Management in Kazakhstan

## 1. System Rehabilitation and Modernization

- A. Water intake facilities, Transmission and distribution networks
- B. Wastewater pumping stations and network
- C. Universal metering

## 2. Sustainable Operations and Maintenance Efficiency

- A. Water sector reforms – institutional, regulatory and legal frameworks
- B. Non-revenue Water management
- C. Energy Efficiency
- D. Asset Management
- E. Tariffs and sustainability – resource management, cost recovery

## 3. Performance Benchmarking and Monitoring

- A. Key Performance Indicators and monitoring system
- B. Environmental Standards, Water Safety Plan
- C. Smart meters, Cloud computing, GIS, Satellite imagery



# 6. Challenges and Opportunities in Kazakhstan

## CHALLENGES

- No national level agency
- WSS current status
  - aging networks and facilities,
  - high losses
- Outdated management practices
- Shortage of qualified personnel
- Quality and reliability of service
- Low and unsustainable tariffs
- Need to improve financial management practices

## OPPORTUNITIES

- Institutional reforms
- WSS modernization
  - infrastructure rehabilitation
  - non-revenue water management
- Modern management practices for utilities
- Efficiency in O&M
- Tariffs and sustainability
- Improving creditworthiness
- Private sector participation
- Finance





# 7. Tariff Policy and Financial Sustainability in Kazakhstan

## 1. Importance of tariff setting

- A. Right regulatory mechanisms and incentives for resource utilization and right pricing for water usage
- B. Universal metering and expansion of customer base
- C. Cover O&M or asset replacement costs
- D. Establishing a customer service orientation
- E. Improved corporate and financial management practices

## 2. Cost Recovery

- A. Tariff setting mechanism - affordable, partial and full recovery
- B. Ensuring financial sustainability

## 3. Private Sector Participation

- A. Monopoly vs. competition – incentives for private sector
- B. Improved credit-worthiness of utilities
- C. “New” draft law on natural monopoly



# 8. Knowledge Needs on Integrated Water Resources Management in Central Asia-I

- 1. Integrated Water Resource Management (IWMR) 25 Years Ago**
  - Wealth of resources dedicated to knowledge on water resource management during Soviet Union
  - Areas: (i) hydropower generation, (ii) flood management, (iii) drainage & irrigation, (iv) water supply & sanitation, (v) wastewater management
  - Good irrigation infrastructures were built in support of agriculture development and efficient water-related services were provided to urban and rural population Universal metering
- 2. Situation Today**
  - Water-related data and information scattered and highly fragmented knowledge institutions
  - Low quality of services provided
- 3. Need for improving IWRM systems**
  - Making progress on climate change mitigation efforts (COP21, SDGs)
  - Enhancing Kazakhstan's agriculture productivity
  - improving the quality of water-related services



# Knowledge Needs on Integrated Water Resources Management in Central Asia-II

## **AIM:**

- (i) Introduce sustainable water management systems and technologies;
- (ii) Consolidate information on surface water and groundwater;
- (iii) Promote adoption of water applications advanced technologies;
- (iv) Improve water resource planning and governance;
- (v) Plan water infra development and adaptation to climate change and DRM;
- (vi) Adopt regulations to deal with water scarcity and reduce inequalities

## **OBJECTIVE:**

Generate research, capacity building, and policy dialogue to inform water sector operations and help implement infrastructure projects in Central Asia (use efficient water resource monitoring and quality management; promote use of best practices for water resource allocation, groundwater protection, water quality assurance)

## **PARTNERSHIP:**

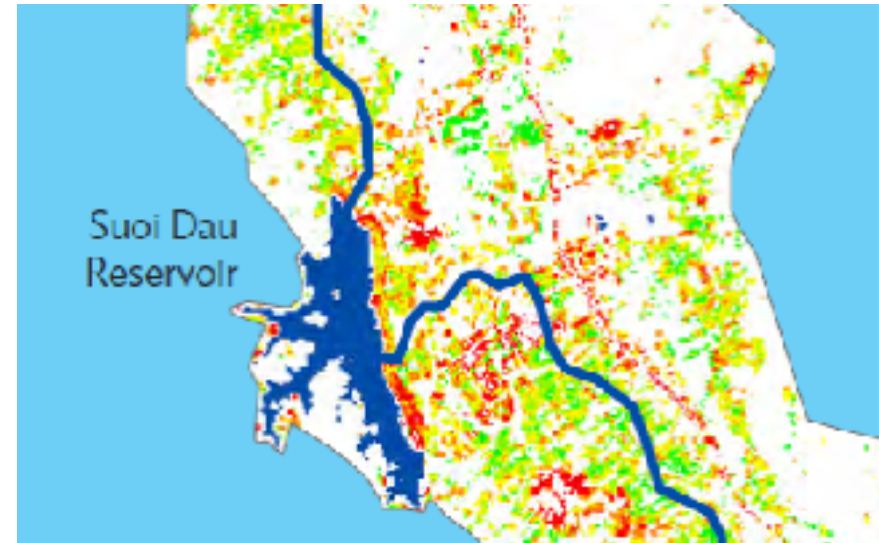
- (Confirmed) ADB, UNESCO, Government of Kazakhstan
- (Envisaged) EBRD, EU, FAO, IsDB, UNDP, WB, others



# 9. Applications of Satellite Remote Sensing Technology and Other Activities

## Activities:

- (i) stocktaking of data on surface water and groundwater and creation of 'one-stop shop' on water-related issues;
- (ii) satellite remote sensing technology to measure water for resource planning and management;
- (iii) comprehensive water accounting system on eight major river basins;
- (iv) capacity building programs;
- (v) policy dialogue for improving water resource management in Central Asia



## Launching Event:

First Central Asian Forum and Executive Training Program on  
“Strengthening Water Management Systems and Agriculture Productivity”  
08-10 September

Kazakhstan National Agrarian University, Almaty

