CI and EWS and Water Resources Management

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Asian Development Bank
&
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UZB: Resilient Amu Darya and Syr Darya River Basin Investment Program

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Proposed Resilient Amu Darya River Basin Sector Development Program

Rationale

- **Uzbekistan faces increasing climate change risks:** higher temperatures, frequent droughts, reduced water availability, and intensified floods/mudflows in the subbasins of Amu Darya.
- **Limited water resources:** Rising water demand from agriculture, urban, and industrial users creates a supply-demand gap.
- **Policy Challenges:** The Government of Uzbekistan has undertaken significant actions in implementing policy reforms related to (i) efficient use of land and water resources, (ii) modernization of water resources management facilities

Project Objectives

- Resilient water resource management to ensure sustainability.
- Enhance agricultural productivity and rural livelihoods through efficient irrigation.
- Improve disaster risk management in the sub river basin of Amu Darya.

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Investment Component

Comprehensive upstream climate risk assessment in Amu Darya river basin

(i) upstream climate risk assessment, (ii) multisector stakeholder workshops, (iii) prioritize climate adaptation investments, (iv) integrate into proposed investment.

Identified investment components ⇒ Integrated Water Resource Management Approach for Ayakchi and Obizarang sub river basins

(a) Multipurpose reservoir for irrigation water supply, flood mitigation, hydropower generation (if applicable)

(b) Improved watershed management, including nature-based solutions for flood-risk, sediment, and biodiversity management;

(c) Productive and modernized irrigation command areas using innovative and digitalized technologies to boost water efficiency and climate-smart agriculture; and

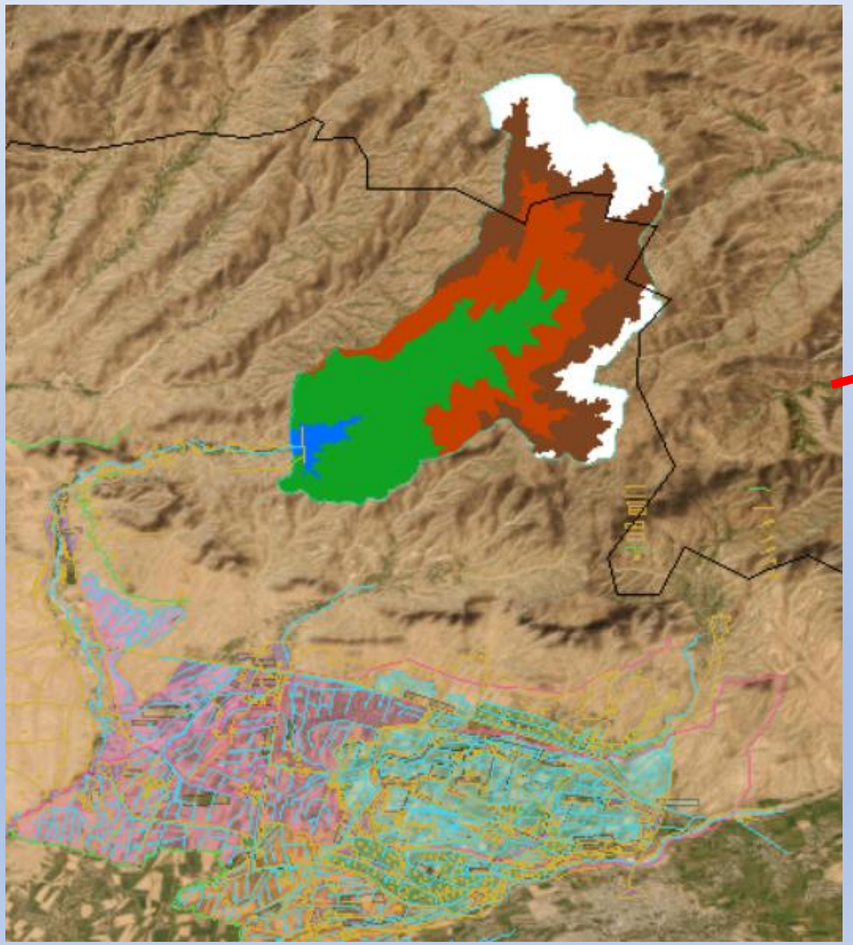
(d) Institutional strengthening and capacity building of water management agencies and water users, with focus on asset management and women's empowerment

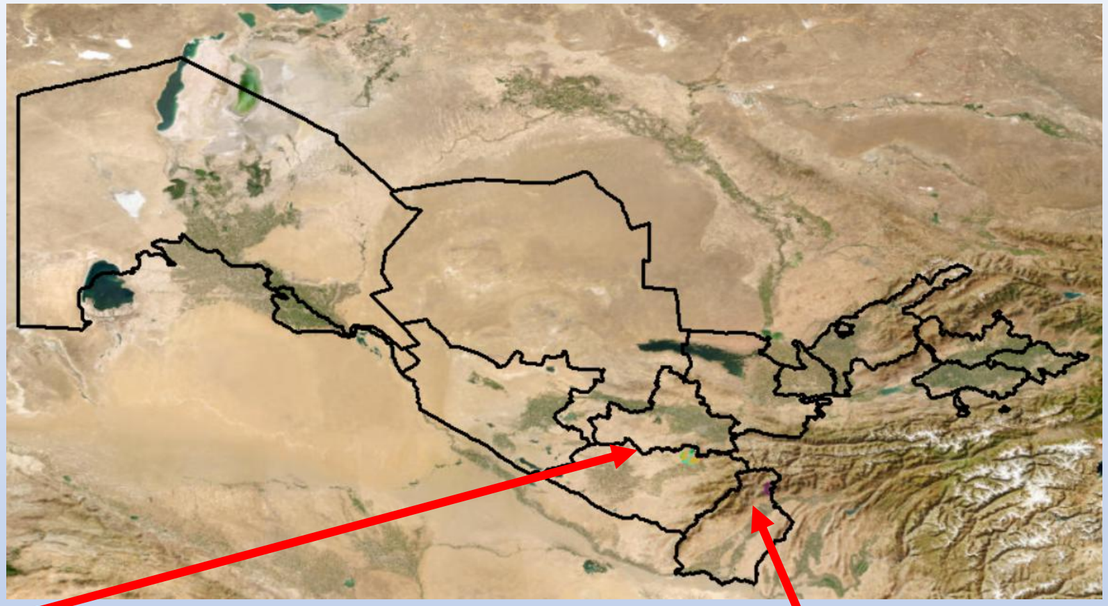
Investment Component (EA:MWR)

Indicative Cost estimates (These are to be updated after FS development by TA)

Total $150 million	Ayakchi (Kashkadarya)	Obizarang(Surkhandarya)
(a) Multipurpose reservoir for irrigation water supply, flood mitigation, hydropower generation (if applicable)	$45 million from ADB COL	$45 million from ADB COL
(b) Improved watershed management, including nature-based solutions for flood-risk, sediment, and biodiversity management;	$14 million from ADF Grant $6 million from ADB COL	
(c) Productive and modernized irrigation command areas using innovative and digitalized technologies to boost water efficiency and climate-smart agriculture; and	$20 million from OPEC fund	
(d) Institutional strengthening and capacity building of water management agencies and water users, with focus on asset management and women's empowerment	$5 million from ADB COL	
(e) Other Program administration cost (PIU,PIC, etc.), Contingency, etc.	$15 million from ADB COL	

Project Location-Ayakchi and Obizarang River Basins



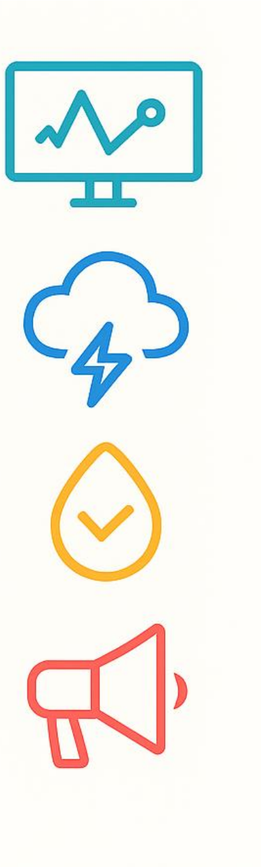


Context and Rationale for CIEWS

- Uzbekistan faces increasing water stress due to:
  - Climate change
  - Upstream water use
  - Outdated infrastructure
- Ayakchi and Obizarang sub-projects aim to:
  - Improve irrigation and flood control
  - Enhance resilience
- **Climate Information and Early Warning System (**CIEWS) supports adaptive water management and disaster preparedness

Objectives of CIEWS

- Monitor hydro-climatic variables
- Forecast extreme events (floods, droughts)
- Inform reservoir operations and irrigation scheduling
- Alert communities and institutions for timely respo

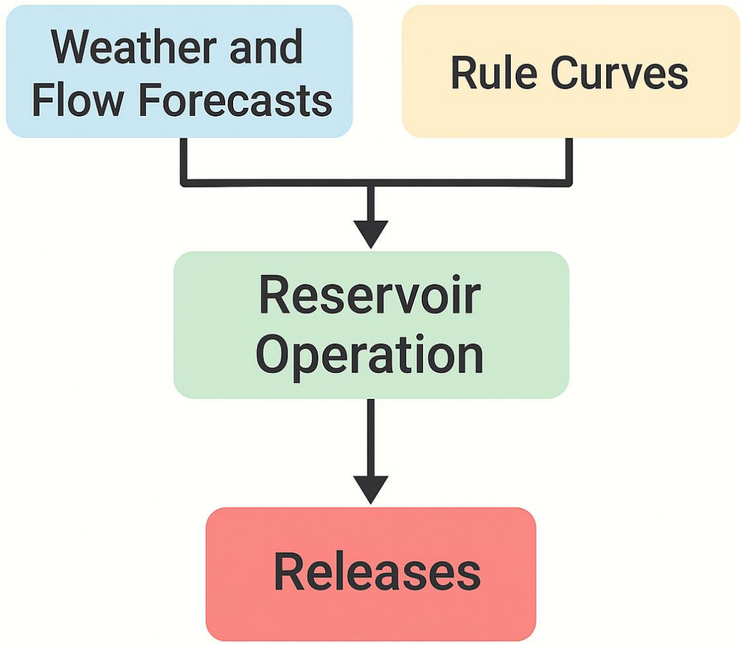


Key Components

- **Monitoring Network**: Weather stations, river gauges, snowpack sensors
- **Data Platform**: Real-time data integration and visualization
- **Forecasting Models**: HEC-HMS, RUSLE, CMIP6 climate projections
- **Dissemination Tools**: SMS, radio, mobile apps, community boards
- **Institutional Coordination**: MWR, BISA, Uzhydromet, Hokimiyats

Integration with Project Components

- **Reservoir Operations**: Dynamic rule curves
- **Watershed Management**: Targeted erosion control
- **Agricultural Planning**: Climate-smart cropping and irrigation
- **Dam Safety**: Dam break simulations and emergency plans



Institutional Strengthening

- Capacity building for:
  - Data analysis and model use
  - Emergency protocols
  - Gender-inclusive training
- Collaboration with:
  - Nature Solutions Finance Hub
  - Agro-universities

THANK YOU