

# The CENTRALASIA The The CENTRALASIA

CENTRAL ASIA: POST-COVID RECOVERY THROUGH BETTER CONNECTIVITY



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#### THE WEFE NEXUS APPROACH

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## CHALLENGES

- WEFE nexus is critical to rural livelihoods, food and nutrition security & economies, and systems are strongly interconnected
- 2. Extreme pressure due to **climate change** and other changes
- 3. National & regional institutions struggle, particularly in transboundary basins
- 4. Investors are uncertain where & how best to retain forests and biodiversity, and support sustainable irrigation, clean energy and agro-processing needs
- 5. Women, girls, and vulnerable groups face the greatest adverse consequences

### NEXUS Gains – Realizing Gains Across Water, Energy, Food and Ecosystem (WEFE)

Understand and manage trade-offs and build synergies



- . Systems approach, truly integrated
- 2. Yes, IWRM, but nexus goes beyond
- 3. Many actors and stakeholders
- 4. Basin approach:
  - Quantification, accounting of WEFE
  - Upstream-downstream interdependencies
    - Transboundary
  - Scale dependencies of processes: Farm to landscape/watershed to basin scale
- 6. Polycentric and multi-level and governance
- 7. Gender, youth and inclusion
- 8. Importance of political economy

**Transforming** systems through strengthening nexus thinking and integrated management for inclusive, sustainable development and to build climate resilience



Thought Leadership Piece: https://on.cgiar.org/3yb8QPt

## Lack of WEFE Nexus approaches results in high energy and water use in agricultural production

- Central Asia is known with its large pump stations, where the water is lifted to large scale irrigation systems from both Amudarya and Syrdarya rivers.
- 2.2 million hectares land out of 4.3 million hectare under pump irrigation.
  70% of pump units outdated and have low efficiency. About 21% of generated energy of Uzbekistan is used for pump operations
- Sogd province of Tajikistan 70% of irrigated area under lift irrigation in Syrdarya basin and 16% of energy of Tajikistan.



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### Potential efficiency gains, Karshi stepp

	Сгор	Total pumped area, ha	Irrigation application, mm		Total water use, MCM			Electricity consumption, GWh			GHG emissions, Kton		
			Current	Improve d irrigatio n practice	Current	Improved irrigation practices	Total water saving, MCM	Current	Improved irrigation practices	energy saving, GWh	Current	Improved irrigation practices	CO <sub>2</sub> reduction, Kton of GHGs
	Wheat	102600	1011	587	1037	602	435	468	272	196	219	127	92
	Cotton	119681	765	648	916	776	140	413	350	63	194	164	30
	Total	222281	N/A	N/A	1953	1378	575	880	621	259	413	291	122





Potentially 25-30% savings in water, electricity, carbon emissions, while increase in yield is possible

Source: Djumaboev et al., 2020

## **Co-benefits of Nexus Approach**



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