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Irrigation and Water Engineering Group

Hydro-Hegemony in the Amu Darya basin

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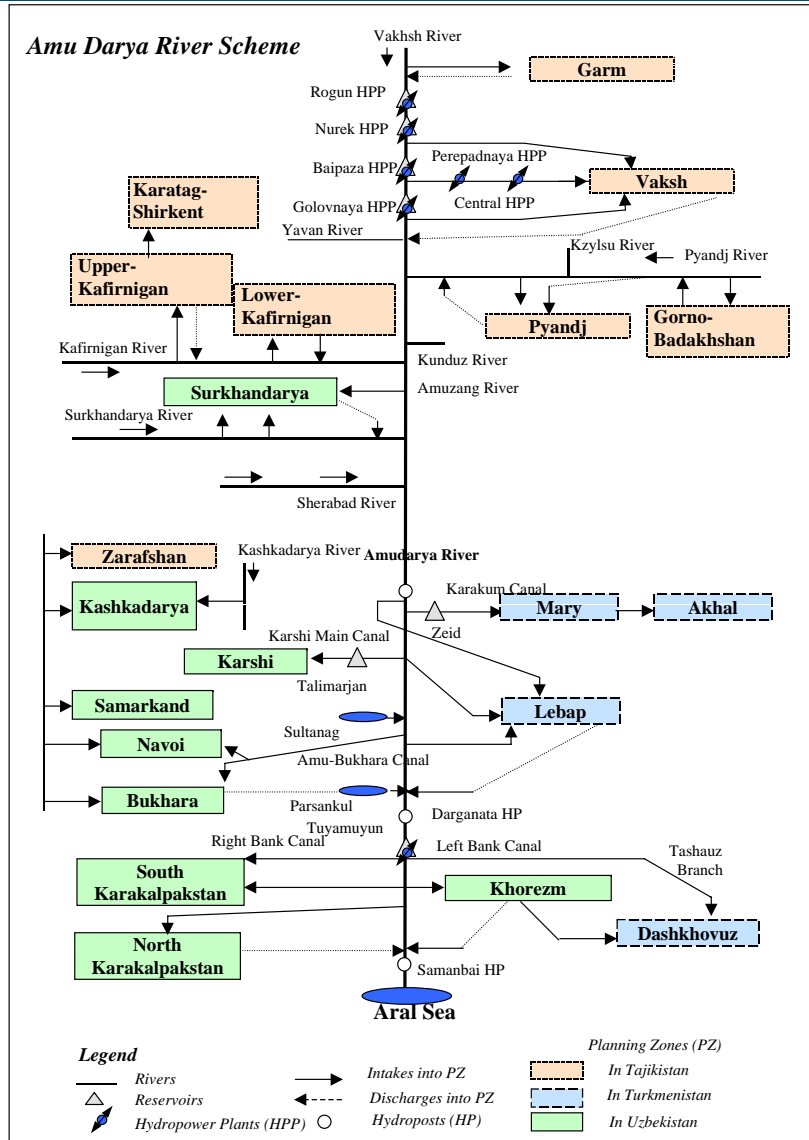
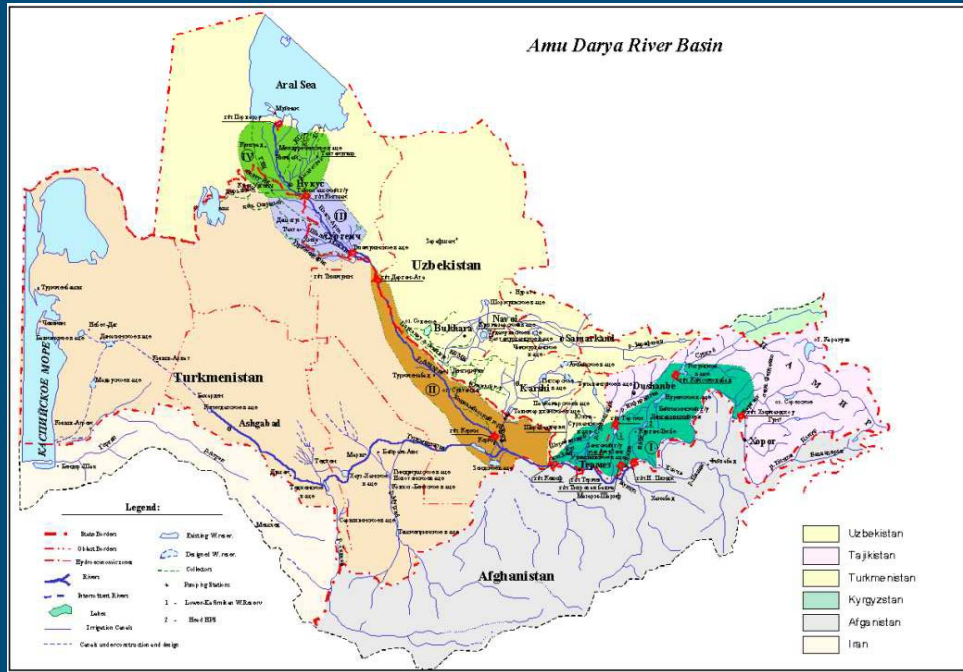


Storyboard

- Geographical Background
- Soviet Hydro-Hegemony
- Hydro Hegemony after independence
 - Water allocation
 - Provision Structures in the basin
- Expanding theoretical framework
- Conclusion



Geography: The Amu Darya Basin





Amu Darya

- Length 2540 km
- Catchment 309 000 km²
- Annual flow 73.6 km³, variation between 47 and 108 km³
- Originates Vakhdjir Pass, Afghanistan
- Riparian states: Afghanistan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan



Soviet Hydro-Hegemony

- Russia: focus on cotton production in CA
- Soviet Union no change in agricultural focus
- Khrushchev: virgin land policy in 1953
- Hydraulic mission (pump stations, canals, upstream reservoir)



Soviet: 'hydraulic mission'

- Infrastructure:
 - Dam build in Tajikistan (storage 10.5 km³)
 - Pump stations build in Turkmenistan to pump water to Uzbekistan (350 m³ /sec, 170m; 270 m³ /sec, 57m)

- Increase of irrigated land
 - 1965: 4.5 million ha
 - 1991: 7 million ha





Soviet Hydro-Hegemony

- Central control in Moscow
- Two-fold subordination sectorial (irrigated agriculture) and national
- “The water management infrastructure was designed for a unifying purpose and placed where it made sense geologically”
- Strategy: “divide and rule”
- But: upstream dam, only function of energy production



Soviet: water agreement

- Setting limits: March 12, 1987 (Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan)
- “it appears that the available annual flow of 61.5 km^3 assumed diversion by Afghanistan at that time of 2.1 km^3 .”
- In 1977 Afghan delegation went to Tashkent, to claim equal share of the Amu darya (ICG report states 50% of agreed upon in 1946), but no agreements exist
- no agreement on the amount Afghanistan is contributing, estimates vary from 10 to 20 km^3



Different data sets: Amu Darya

Amu Darya basin				
	annual river flow	set limits ^{11, 12}	official data (1993 - 1999)	unofficial data (1991 - 2001) ¹³
Afghanistan and Iran ¹⁴	21.6			
Kyrgyzstan	1.6	0.4	0.2	n.a.
Tajikistan	49.6	9.5	7.3	7.0
Turkmenistan	1.5	22	21.5	20.6
Uzbekistan	5.1	29.6	21.6	42.8
Aral Sea			6.1	n.a.
Total			56.7	70.4



Future plans on agriculture:

- Turkmenistan already increased irrigated area by 420,000 ha, but wants to increase further by 450,000 ha
- Uzbekistan 634,400 ha suitable for new irrigation (not all in basin)
- Tajikistan increased by 200,000 ha; wanted to increase further by 500,000 ha by 2005 (not all in basin),
- Neither official nor unofficial data shows that Tajikistan and Turkmenistan increased water share
- Afghanistan currently 385,000 ha, potential of total 443,000 or 1,580,000 ha, 6 km³ or 16,5 km³



Discourses

- Discourse: potential increase in Uzbekistan and Turkmenistan, if expansion is based on water savings in other regions, then it is internal matter
- Uzbekistan blame: Turkmenistan is thought to use as much as 30 km³
- BVO official data: Uzbekistan has decreased its consumption below allocated limits.



Discourses

- BVO unofficial data: Uzbekistan was since independence above allocated limits.
- Uzbekistan discourse: Is it fair that Uzbekistan and Turkmenistan have an equal share below Kerki? (14 million versus 4 million inhabitants)
- WB: Afghanistan will not affect water allocation in the basin, if so only in next 20 years (but what about charging for water? (Glantz 2002)



Provision structures in the basin: pumps

- Article VII, 1998 Agreement: requires the republic in which the facility lies to finance and conduct O&M of those facilities
- Tuyamuyun reservoir, Bukhara & Kashkardarya pump-stations located in Turkmenistan. Uzbekistan pays rent & is responsible for O&M.
- In 2000 Turkmenistan introduces stricter border controls. O&M work was affected.

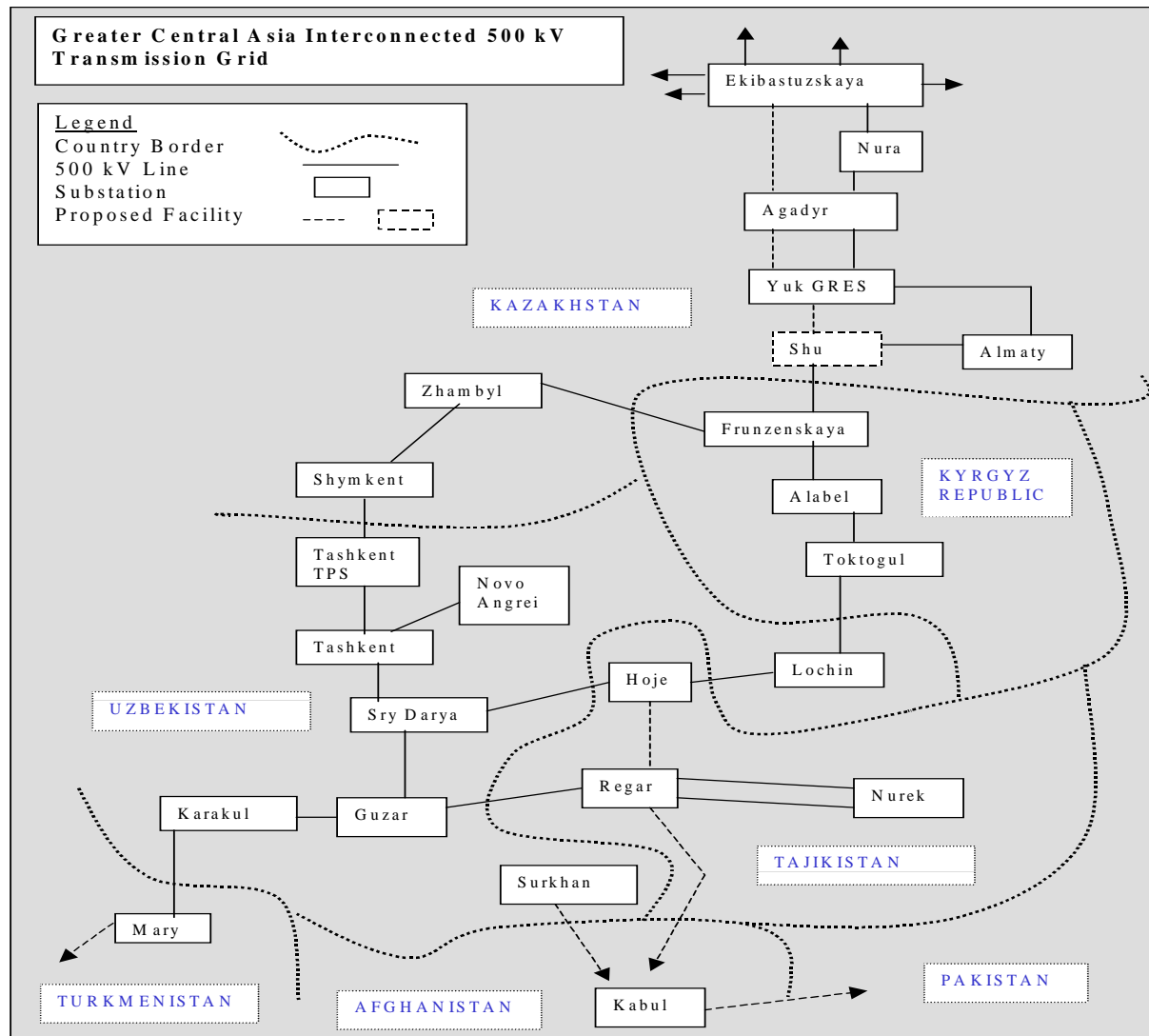


Provision structures in the basin: dam

- Nurek dam controls 40 % of flow of the Amu Darya
- Tajikistan responsible for O&M of dam.
- Barter hydropower & water in summer for gas and coal in winter from Uzbekistan
- Uzbekistan switches off gas supplies, controls pipes & charges transit taxes (to switch to Turkmen gas not possible)
- Uzbekistan controls electric energy grid as well



Electric Energy transmission grid





Provision plans: dam / grid

- Tajikistan plans to construct new dam. Would give 100% control over water flow of Vakhsh river/ Tajikistan.
- Tajikistan anticipates to cooperate with Kyrgyzstan to construct north-south transmission line (challenge to Uzbekistan's control over transmission-grid)



Provision discourses

- Discourse on pumps: not open
- WB declined project for rehabilitation of Kashkardarya pump station. No agreement, who should receive funds.
- Tajikistan: Aim to challenge discourse hegemony of Uzbekistan: sponsors conference, more active in projects
- Uzbekistan's fear: full control over water & maybe O&M cost sharing
- International financial organizations will not support plan because of Uzbekistan's objections



Expanding the theoretical framework

- Discourses underpin hegemonic aspiration
 - Official line SICICWC: conflicts have been avoided:
 - Less dominant discourse in Uzbekistan: blame on Turkmenistan
 - Because of Turkmenistan's closure: the less dominant discourse produces a "truth"
 - Interpretation: strategy of Uzbekistan to present itself as victim as non-hegemonic

- Power over control structures
 - Infrastructure: only considered when it comes to the construction of new structures
 - Subtlety of control: other issues highlighted: administrative and technical, but in the end politically utilized
 - Utilization of dam, does not change allocation, but might change timing of delivery



Conclusion

- After Soviet hegemony, no equilibrium found
 - Resource capture, without negotiation
 - States utilize their leverage over water control and energy infrastructure in their own interest
 - Real disintegration is costly economical and political

- Strategy of resource capture
 - Main impact on 'weakest riparian' Aral Sea and downstream regions
 - Importance of strategy, protect interest against the "new comer"

- BVO might not be neutral
 - Data suggests no control over data & power to get data
 - Uzbekistan has a strong influence on the data
 - Can BVO regain trust, within the basin or internationally