

## The Geopolitics of Hydropower in Central Asia: the Syr Darya 中央アジアにおける水力発電の地政学—シルダリア

Eelke P. Kraak

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#### Summary

The government of Kyrgyzstan has embarked on an ambitious hydropower development programme on the transboundary Syr Darya River, which has provoked strong opposition from downstream Uzbekistan. The programme is driven by the alignment of actual energy concerns with interests of the national hydraulic elites and the global politics of project finance, which provides a logic for dams that may exacerbate existing geopolitical tensions across the region.

#### Keywords

*Critical geopolitics; hydro-politics; transboundary rivers; dams; hydropower; Central Asia; Syr Darya River; Kyrgyzstan; water wars*

On the thirtieth of August 2010, then-president of the Kyrgyz Republic Roza Otunbayeva travelled to a sparsely inhabited stretch of the Naryn River to inaugurate the Kambarata-II dam and hydropower plant (<http://www.reuters.com/article/2010/08/30/kyrgyzstan-hydro-idUSLDE67T0LK20100830>), amid much pomp and circumstance. It marked the completion of a project whose construction had begun during Soviet rule in the mid-1980s, but that had halted after independence in 1991

because of lack of funds. With an installed capacity of 200 MW, the Kambarata-II is the first in a series of 6-8 dams on the Naryn River that Kyrgyzstan's national power utility plans to construct over the next decade.



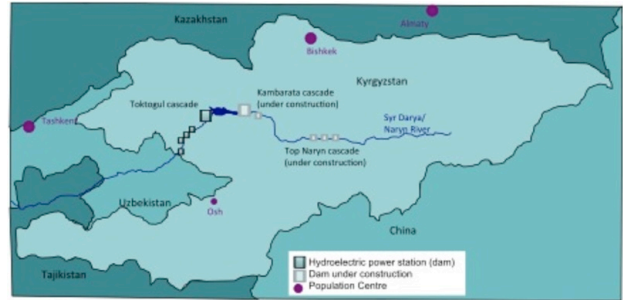
A little farther upstream the Kambarata-I is planned, with an installed capacity ten times that of its recently completed smaller sibling. The plans for the Kambarata-I also date from the Soviet period. When completed it will be the largest dam of the entire Naryn-Syr Darya River system (hereafter Syr Darya), in terms of height as well as power generating capacity. The electricity generated by these two hydropower dams ought to address the severe energy shortages that have been haunting Kyrgyzstan during the last decade, notably in the winter period. The winter of 2009-2010 saw forced power outages of over 12 hours per day in parts of the country (here (<http://www.fride.org/publication/571/energy-emergency-in-kyrgyzstan:-causes-and-implications>)).

But academics, diplomats, and national energy experts have raised serious questions about the value of these dams. At the moment, the Kambarata-II is operating at only a third of its capacity

(<http://kloop.info/2010/09/01/kambar-ata-ii-opens-its-first-unit/>), because two out of three turbines can only be installed when the larger dam upstream is completed to regulate the river flow. Meanwhile, financing the latter has proved problematic given prohibitive costs and doubtful balance between costs and benefits.

Moreover, another dam on the river would be very controversial. The waters of the Syr Darya River are heavily contested by the different riparian states. President Islam Karimov of downstream Uzbekistan, has spoken out against hydraulic developments in the upstream states of Kyrgyzstan and neighbouring Tajikistan, fearing that more dams may compromise its water supply. Tension over the operation of dams has arisen in the past, leading to much sabre-rattling, economic sanctions and the closure of borders.

The entire dam-building project of the Kyrgyz government has raised numerous questions. What is the logic that drives the desire for these dams? Who would pay the excessive costs of the new dam, given the rather low economic viability? But the most critical question remains: what will the new dams mean for the geopolitics of the Syr Darya River, and in particular the tension between Uzbekistan and Kyrgyzstan? Before one can address these questions, it is important to examine the tumultuous history of water management in Central Asia.



## Environmental and Geopolitical Turmoil

The Kambarata cascade is by no means the first hydraulic intervention in the Aral Sea basin of which the Syr Darya covers half the drainage area. Hundreds of dams have been constructed since the 1930s as well as a plethora of reservoirs, irrigation canals, and other water management structures. These developments were part of the Soviet *hydraulic mission* (<http://www.chinadialogue.net/article/show/single/en/4790>), a modernisation plan that made the conquest of nature an ideological imperative. By taming the wild Syr Darya and Amu Darya Rivers, it was thought, agricultural output could be greatly increased.

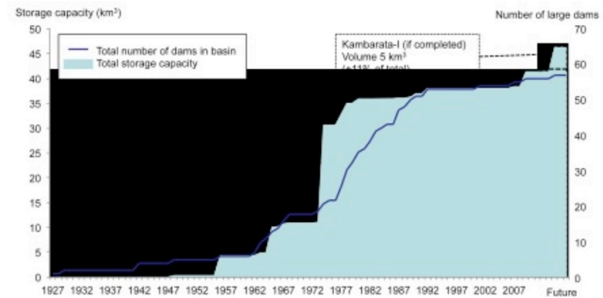
Central Asia was the cotton belt of the Russian and Soviet empires and abundant state resources were directed to sustain and expand the large-scale irrigation networks that made production possible. The Hunger Steppe in contemporary Uzbekistan was transformed from an uninhabited plain into a cotton factory of 300,000 hectares; the Kara Kum canal in Turkmen territory diverted almost 13 km<sup>3</sup> per year from the Amu Darya to irrigate the desert; and the largest of the lot, Khrushchev's Virgin Lands Campaign dramatically increased grain production in the Kazakh Socialist Republic in just a few years.

But the costs have been high. The Aral Sea (<http://www.ciesin.org/docs/006-238/006-238.html>), terminal lake of the Syr Darya and Amu Darya Rivers has shrunk to less than 10 per cent of its 1960 volume. The consequences are

dire: dessication, polluting dust storms and declining life expectancies in the area immediately surrounding the lake. The setbacks for the Uzbek and Kazakh economies have never been precisely measured, but they appear to have been enormous. By taming the rivers and controlling nature, ruling elites in Moscow and Tashkent created one of the worst man-made environmental disasters in history.

After independence of the Central Asian states in 1991, a wider geopolitical problem was added to the environmental mess. Rather than being a domestic river in an integrated economic system, the Syr Darya became an international river flowing through four states with widely diverging economic and political interests: Kyrgyzstan, Tajikistan, Uzbekistan, and Kazakhstan. Initially there was hope that these new states would cooperate to address the region's environmental and political problems. But little has been done to alleviate the water problems of Central Asia during the last 20 years. Instead, tensions over water rights seem to have risen, notably between downstream Uzbekistan and upstream Kyrgyzstan.<sup>1</sup>

The operation of the Kyrgyz Toktogul dam and reservoir - the largest in the river system until Kambarata-I is completed - has been the central problem. It has multiple functions: it is both the main supplier of water for irrigation in Uzbekistan and the source of more than 90 per cent of Kyrgyzstan's electricity. The problem is that Kyrgyzstan wants to discharge water from the reservoir in winter to generate power when demand for electricity is highest, whereas Uzbekistan wants the water to be discharged in summer, when it is needed for irrigation.



Disputes over the timing of water discharge have brought the two countries to the brink of conflict. Polemical works such as Kaplan's 2001 *The Coming Anarchy* or Homer-Dixon's 1999 *Environment, Scarcity and Violence*, have warned of violent conflict over scarce water resources,<sup>2</sup> but their works have been sharply criticized by social scientists studying transborder river politics. The idea of *water wars* has remained influential in policy circles nonetheless. A 2011 report ([http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CCkQFjAA&url=http%3A%2F%2Fwww.foreign.senate.gov%2Fpublications%2Fdownload%2Fsprt-112-10-avoiding-water-wars-water-scarcity-and-centrals-asias-growing-importance-for-stability-in-afghanistan-and-pakistan&ei=FXt0T\\_2cIIXm0QGusND\\_Ag&usq=AFQjCNEGwqguH3HZtOa-U3K8zfcMuW-SAA&sig2=2HI8FurPBor13UJtkgiaYA](http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CCkQFjAA&url=http%3A%2F%2Fwww.foreign.senate.gov%2Fpublications%2Fdownload%2Fsprt-112-10-avoiding-water-wars-water-scarcity-and-centrals-asias-growing-importance-for-stability-in-afghanistan-and-pakistan&ei=FXt0T_2cIIXm0QGusND_Ag&usq=AFQjCNEGwqguH3HZtOa-U3K8zfcMuW-SAA&sig2=2HI8FurPBor13UJtkgiaYA)) by the US Senate Committee on Foreign Affairs observed that "we cannot expect [Central Asia] to continue to avoid water wars in perpetuity." Theoretically, a new dam upstream could ease the tension.

### More dams, more power?

At first sight it seems that the new Kambarata dams just upstream of the Soviet-era Toktogul dam have the potential to satisfy both the Uzbeks and Kyrgyz. Former President Kurmanbek Bakiyev said during a regional summit

(<http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CCQQFjAA>

&url=http%3A%2F%2Fwww.un.int%2Fwcm%2Fwebdav%2Fsite%2Fkyrgyzstan%2Fshared%2Fdocuments%2FStatement%20by%20H.E.%20Mr.%20Kurmanbek%20Bakiev%20President%20of%20the%20Kyrgyz%20Republic.doc&ei=lHt0T6uEBMnq0gGlzcn\_Ag&usg=AFQjCNGXq18hWX-C\_xed9\_nn3L9ZvwZnvQ&sig2=tmhVbgmhmWlna7zulKQMRw) in 2009: “implementation of [the Kambarata project] not only satisfies our republic’s energy needs but will also allow the Toktogul to operate in an irrigation regime which our regional partners are interested in.” According to economic analysis ([https://apjjf.org/admin/site\\_manage/details/site\\_resources.worldbank.org/.../Water\\_Energy\\_Nexus\\_final.pdf](https://apjjf.org/admin/site_manage/details/site_resources.worldbank.org/.../Water_Energy_Nexus_final.pdf)) conducted by the World Bank, a win-win solution is actually possible without the expensive construction of more dams: recognising the economic value of water allows for the optimisation of existing dam operations. Kyrgyzstan could discharge water for Uzbek irrigation in summer, in exchange for nominal payments to cover the costs of an alternative electricity supply in winter. Either way, the solution depends on political cooperation.

In fact, the Kambarata plans seem to have aggravated tensions between the riparian states. The regional cooperation process that aims to formulate a binding legal framework has been deadlocked over disagreement on basic principles. Uzbek officials accuse Kyrgyzstan of wanting to sell the water of an international river. Indeed, the rather unsubstantiated fear downstream is that Kyrgyzstan will not use the Kambarata dam to foster cooperation, but will attempt to extend its control over the river flow and blackmail the downstream states.

Independent experts have stated (<http://www.ca-reset.org/PageFiles/News/News.php>) that the new cascade is also unlikely to solve the energy crisis in Kyrgyzstan. The energy system itself is horribly inefficient. Some claim (<http://www.thefreelibrary.com/Every+second+>

kW+of+power+in+Kyrgyzstan+is+either+lost+or+stolen+for...-a0249974203) that half the produced electricity is either lost or stolen. Moreover, there are three key imbalances in the system. Kyrgyzstan relies for 90 per cent of its electricity on hydropower facilities, which in turn depend on benevolent rainfall. These dams are located in the southern part of the country, while the vast majority of the population and industry is situated in the north. Finally, the hydrology of the river allows the plants to generate most electricity when water levels are highest: which is in the summer following glacier and snow melt in the Tien Shan mountains.

One indeed wonders whether another expensive dam in the south of the country that produces more hydropower in summer will really address the energy shortages that the north faces during the winter. As one senior World Bank energy specialist put it in an interview: “*more hydro is nonsense, the Kambarata cascade is economically not feasible.*” This suggests that other rationales may be driving the project.

Political theorist Timothy Mitchell in his 2002 book *Rule of Experts* argues that, “*large dams offered a way to build not just irrigation and power systems, but nation-states in themselves.*”<sup>3</sup> Indeed, a large-scale project like the Kambarata, if successful, can provide a sense of legitimacy to a regime that lacks authority. The symbolism of a large dam, including distraction from a troubled economy at home, and the power over regional foreign affairs it offers, could explain the attraction of the Kambarata-I.

Besides, a project that will cost more than \$2 billion is likely to have significant kickbacks for some Kyrgyz elites. Huge rents are expected and this is one of the reasons why development partners oppose the dam. The smaller Kambarata-II has reportedly been used as a corruption vehicle by the son of the president,

according to news reports ([http://centralasiaonline.com/en\\_GB/articles/cai/features/main/2010/05/18/feature-02](http://centralasiaonline.com/en_GB/articles/cai/features/main/2010/05/18/feature-02)), so this tendency is nothing new. Finally, historian David Worster argues in his book *Rivers of Empire* that large hydraulic works tend to lead to the concentration of political power.<sup>4</sup> Even if the dam is bad for the economy at large, hydraulic elites and decision-makers are likely to benefit.

Yet precisely because of the high symbolic value of the dam, it may move ahead. The dominant national discourse has rebranded Kyrgyzstan as a hydropower nirvana with huge amounts of untapped potential: the water tower of Central Asia. Personal and local rationales seem to have been discursively aligned with this broader water development discourse. But a discourse does not build a dam, unless someone pays, too.

### The Geopolitics of Hydro-Finance

Financial constraints halted construction in 1991 and finding sufficient funds remains a problem for the nascent Kyrgyz Republic. Especially for something as delicate as a dam on an international river, finance is subject to a broader geopolitics. Kyrgyzstan is a rather poor country with a GDP per capita of less than \$850 and its economy has largely been stagnant in recent decades: financing a dam from state coffers alone hardly seems an option. Because of the regional sensitivity of hydraulic works, development banks such as the World Bank and the Asian Development Bank are unlikely to step in either. In any event, their maximum lending to a low income economy like Kyrgyzstan is only \$50 million per year.

But February 2009 seemed to herald a breakthrough with Russia announcing that it would fund the dam through an extensive aid package. Kyrgyzstan was to receive a \$150 million grant, a \$300 million concessional loan, and a \$1.7 billion credit, enough to roughly cover the costs of the Kambarata-I as well as

President Bakiyev's re-election campaign. Russia also agreed to write off all of Kyrgyzstan's debt. Not surprisingly Moscow expected a quid pro quo for this generous offer.

According to a report (<http://www.crisisgroup.org/en/regions/asia/central-asia/kyrgyzstan/B102-kyrgyzstan-a-hollow-regime-collapses.aspx>) from the usually well-informed International Crisis Group, the implicit deal was that Kyrgyzstan would close the American air force base Manas, near the capital Bishkek. The Americans had rented the base to support the Iraq and Afghanistan wars and their presence in Russia's backyard has long been a thorn in Russian eyes.

In return for the credit, Russia also obtained a 50% stake in the Kambarata cascade. This is significant, because control over the dam would give Moscow virtual control over the entire waters of the Syr Darya River: not only the river in Kyrgyzstan, but also the downstream flow through Tajikistan, Uzbekistan, and Kazakhstan. This reminded many in Central Asia of the colonial past. Not surprisingly, the Uzbek leadership in Tashkent was not pleased with this arrangement. President Karimov stated (<http://www.eurasianet.org/departments/insight/b/articles/eav042909.shtml>) at a regional summit on water and energy in 2009: "*third countries which would very much like to take part in this discussion are also pursuing their own aims.*" Nonetheless, he could not fully voice his opposition, because Uzbekistan depends on Russia, too.

But as critical geopolitical theory suggests, the outcomes of international affairs are often tightly linked with national politics. By April 2009, Bakiyev had fallen out of favour with Moscow and the credit line was interrupted. This was widely believed to have been caused by the failure to close the American air base at Manas. The US had reopened negotiations on the base, offering to quadruple annual fees.

Although Bakiyev insisted that the closure was never part of the deal, Moscow remained adamant. When a popular uprising ousted Bakiyev a year later, many saw (<http://www.guardian.co.uk/commentisfree/2010/apr/08/kyrgyzstan-vladimir-putin-barack-obama>) the hand of the Kremlin behind it.

One of the first actions of the new government was to fly to Moscow to discuss, among other things, the Kambarata credit. It remains to be seen whether the dam will actually materialise. The general manager of the power utility that runs the project told in me in an interview in 2011 that they have been looking for alternative ways to finance it: capital investments from Russia, Kazakhstan, and Kyrgyzstan; a loan from the Eurasian Development Bank; but preferably cheap credit from the Chinese Exim bank. The Chinese may be interested in building a transmission line from the power station to their energy-hungry province of Xinjiang, across the border. This would have altogether different implications for the water and energy politics of Central Asia. For now, the project is on hold. Meanwhile, despite Moscow's displeasure, the US retains the key Manas air base.

The geopolitics of financing the Kambarata illustrates how the interest of countries like the US, Russia and China can be brought into line with those of the Kyrgyz energy elites to rationalise projects that would be deemed irrational by conventional standards. The logic behind big dams is often outside the realm of simple economic cost-benefit analysis and the greater good of the population, but may be shaped by the interaction between a wider geopolitics and the business interests of local elites.

### **The Dam and the Making of a Water War**

The consequences of this contradiction could be significant indeed. The *vox populi* in Uzbekistan and Kyrgyzstan are reproducing some hard-nosed

(<http://www.eurasianet.org/node/62974>) securitisation discourses of the global community. Echoes of the warning of imminent *water wars* circulate in popular media and internet forums. In contrast, diplomats of both countries have treaded cautiously, meeting on multiple occasions to discuss water and energy. Although no formal agreement has been accepted, abundant rainfall years cause no problem and ad hoc solutions have been found thus far in water-scarce years. There seems to be a clear distinction between *popular geopolitics* and *formal geopolitics*.

Indeed, reality is not as grim as the popular geopolitical imagery suggests, but this spatial representation is the immediate product of elite constructions of the river and a fundamental conflict of interests in which Kyrgyzstan's hopes for big dam construction serving the national interest are directly opposed to Uzbekistan's construction of the river as a common good flowing from god. To Uzbekistan, the waters of the Syr Darya are nothing less than a *historical right* and even the suggestion of marketising the supply is outrageous. Both dominant discourses serve the goals of domestic elites, but produce contradictions on a regional scale. It is a matter of concern that the Kambarata dam as a space of conflict rather than one of cooperation can have regional consequences beyond the concentration of power among Kyrgyz hydraulic circles.

The dam programme in Kyrgyzstan derives legitimacy not from cost-benefit analysis per se. In fact, no formal cost-benefit analysis has been conducted for the Kambarata-I dam. Actual concerns with the state of the country's energy sector are combined with a hegemonic water development discourse, the interests of elites, and a wider geopolitics of project finance in order to rationalise the project. The logic of the dam ultimately has more to do with the distribution of power and rents than with development.

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## Notes

<sup>1</sup> A good if dated overview of the conflict with perspectives from both sides can be found in Sievers, E. W. (2001). See also "Water, conflict and regional security in Central Asia." *New York University Environmental Law Journal*, 10, 356 and Kemelova, D., & Zhalkubaev, G. (2003). "Water, Conflict, and Regional Security in Central Asia Revisited." *New York University Environmental Law Journal*, 11, 479-502.

<sup>2</sup> Kaplan, R. D. (2001). *The Coming Anarchy: Shattering the dreams of the post Cold War* (p. 224). New York: Vintage Press and Homer-Dixon, T. F. (1999). *Environment, scarcity and violence*. Princeton, NJ: Princeton University Press.

<sup>3</sup> Mitchell, T. (2002). *Rule of experts: Egypt, techno-politics, modernity*. Berkeley: University of California Press, p. 44.

<sup>4</sup> Worster, D. (1985). *Rivers of empire: water, aridity and the growth of the American West*. Oxford: Oxford University Press.

<sup>5</sup> See, for example, Toal, G. (1996). *Critical geopolitics: the politics of writing global space*. Minneapolis: University of Minnesota Press.

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