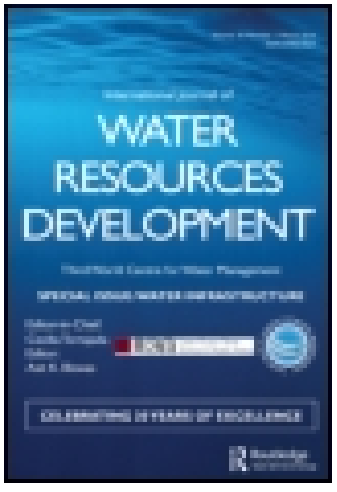

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Sonoko Ito[a], Sameh El Khatib[b] & Mikiyasu Nakayama[a]
[a] Graduate School of Frontier Sciences, The University of Tokyo, Kashiwa, Japan
[b] Engineering Systems & Management, Masdar University, Masdar City, United Arab Emirates
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Sonoko Ito[a], Sameh El Khatib[b] and Mikiyasu Nakayama[a]

[a]Graduate School of Frontier Sciences, The University of Tokyo, Kashiwa, Japan; [b]Engineering Systems & Management, Masdar University, Masdar City, United Arab Emirates

ABSTRACT
Following the dissolution of the Soviet Union, Central Asian countries struggled to reach an agreement on the use of their shared fresh water resources. The conflict between Tajikistan and Uzbekistan regarding construction of the Rogun Hydropower Plant in the Amu Darya Basin seems deadlocked at present, despite copious efforts made by donor agencies. Therefore, this paper examines each country's position using the numbers featured in the media.

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Central Asia; conflict resolution; hydropower; Tajikistan; transboundary river; Uzbekistan

Introduction: overview of the issues in Central Asia

Following the dissolution of the Soviet Union, the rivers of Central Asia became transboundary rivers, and the Central Asian republics struggled to reach an agreement on the use of the water contained within. Moreover, conflict over an international cross-border electricity trade project has arisen between the countries sharing the Amu Darya Basin. This has recently become one of the most contentious issues in Central Asia, and easing the confrontation between two of these republics is necessary for the stability and development of the region. This study therefore focuses on the conflict between Tajikistan (the upstream country) and Uzbekistan (the downstream country) concerning a dam construction project initiated by Tajikistan in the Amu Darya River basin.

Water and energy issues: the legacy of the Soviet Union

Central Asian countries, namely Kazakhstan, the Kyrgyz Republic, Uzbekistan, Tajikistan and Turkmenistan (i.e., those that became independent from the former Soviet Union in 1991), have received attention from the international community due to their abundant natural resources. However, these resources are unevenly distributed throughout the region. For instance, while Kazakhstan, Uzbekistan and Turkmenistan (which are downstream on the transboundary rivers) are rich in oil and natural gas, the Kyrgyz Republic and Tajikistan (which are upstream) have abundant water resources. During Soviet times, all natural resources and infrastructure were the common property of the Soviet Union and were thus managed regionally under centralized orders from Moscow.

CONTACT Mikiyasu Nakayama nakayama@k.u-tokyo.ac.jp

In 1954 the Soviet government began promoting the Virgin Lands Campaign, which aimed to expand cultivated cotton areas into Central Asia. As a result of this policy, construction began on large hydroelectric power plants and reservoirs, mainly in upstream countries. In addition, the Soviet government developed an irrigation scheme whereby upstream countries released water from their reservoirs during the summer when the downstream countries required water for intensive irrigation as well as for generating electricity for their own population. The downstream countries, in turn, supplied the electricity generated by their thermal power plants as well as natural gas to the upstream countries during the peak winter season (Granit et al., 2012).

In the 1970s the Soviet government established the Central Asia Power System (CAPS), which involved south Kazakhstan, the Kyrgyz Republic, Tajikistan, Turkmenistan and Uzbekistan. This was developed with consideration of the unique regional characteristics, such as the uneven distribution of natural resources, resulting in peak summer demand for irrigation water in regions that had abundant fossil fuels, and peak winter demand for electricity in regions that had abundant water resources. This unified power system effectively supplied electricity to the entire region, supplying the water-rich regions with electricity in the winter as compensation for the water used for irrigation in the summer (JICA, 2009).

Following the dissolution of the Soviet Union the Central Asian countries continued to share electricity and natural resources, but now they also had to consider their individual interests. As a consequence, both the CAPS and irrigation systems gradually collapsed. Electricity trade in CAPS fell dramatically throughout the 1990s, from 25,413 GWh in 1990 to 5580 GWh in 2000 (World Bank, 2004).

The collapse of CAPS consequently forced upstream countries to use their hydroelectric power plants almost exclusively to generate electricity for their own sake, in particular to meet power demands throughout the winter. Thus, a major function of the reservoirs – to support irrigation of downstream countries in summer – tended to be disregarded. This led to confrontation with downstream countries.

Conflict over the Rogun Hydropower Plant (HPP)

As Tajikistan was heavily dependent on CAPS, it faced serious energy shortages after the collapse of the power system. In order to resolve these energy shortages and also to promote economic development by expanding electricity exports, the government of Tajikistan restarted construction of the Rogun HPP, which had been halted during Soviet times.

Construction of the Rogun HPP is intended for the Vakhsh River, which is a tributary of the transboundary river Amu Darya and shared by both Tajikistan (upstream) and Uzbekistan (downstream). If built as planned, the Rogun HPP will be 335 m tall – making it the highest dam in the world – with a generating capacity of 3600 MW. However, downstream Uzbekistan strongly opposes construction of the dam because it would change the runoff pattern of the transboundary river and subsequently impact its irrigated agriculture.

Construction of the Rogun HPP began during Soviet times in the 1980s. However, following several major events – including the collapse of the Soviet Union and the civil war in Tajikistan from 1992 to 1997 – construction of the Rogun HPP was halted. Once the civil war ended, the government of Tajikistan revived the plan. However, Tajikistan's poor economy cannot finance the dam given the high cost of construction (around US$3.5 billion). Thus, the government of Tajikistan sought international support.

Although neighbouring countries such as Russia and Iran were interested in financing the project, Tajikistan has been struggling to gain funding. International organizations may find it difficult to support the construction of a dam unless the downstream countries, especially Uzbekistan, agree with the plan. With the purpose of obtaining the support of downstream countries, the government of Tajikistan asked the World Bank (WB) for assistance (Laldjebaev, 2010). However, Uzbekistan is currently adopting a stance that any hydroelectric facilities planned for construction upstream should undergo international and independent expert examination and downstream countries should be in full agreement.

Attempted cross-border electricity trade project

The conflict between Tajikistan and Uzbekistan over the Rogun HPP has also been influenced by a planned cross-border electricity trade project between Central Asia and South Asia, which is referred to as the Central Asia South Asia Electricity Transmission and Trade Project (CASA-1000). It was reported that the Kyrgyz Republic, Tajikistan, Afghanistan and Pakistan have all reached an agreement to create the Central Asia–South Asia Regional Electricity Market (CASAREM) with the support of international financial institutions such as the Asian Development Bank (ADB), the European Bank of Reconstruction and Development (EBRD), the International Financial Corporation (IFC), the Islamic Development Bank (IsDB), and the WB (Kravtsov, 2009). CASA-1000 was proposed as a part of this project, which would export a summer surplus of electricity from Tajikistan and the Kyrgyz Republic to Pakistan and Afghanistan in the range of 1000–1300 MW.

However, this project has been controversial because the government of Tajikistan has indicated a strong desire to construct the Rogun HPP as the main power source of the project, even though the feasibility study conducted for the CASA-1000 project suggested that it would be economically viable to rely only on existing power generation potential in the exporting countries (SNC-Lavalin, 2011). The study does point out that the Tajik surplus is expected to drop from its current 3750 GWh/year to about 500 GWh/year in 2035 (SNC-Lavalin, 2011). Thus, according to media reports, the president of Tajikistan assumes that CASA-1000 is only economically viable with construction of the Rogun HPP (Mashrab, 2012).

On the other hand, Uzbekistan opposes CASA-1000 on the grounds that the government of Tajikistan would bring forth the construction of Rogun HPP as a solution to the expected decrease in the amount of surplus electricity in future (Anon., personal communication in Kabul, 21 December 2013). Furthermore, Uzbekistan would oppose any cross-border electricity trade project that will be linked with construction of the Rogun HPP (Anon., personal communication in Manila, 21 August 2013).

Objectives

Turmoil among riparian countries over water use has long been a challenge to overcome in Central Asia. The dispute between upstream and downstream countries over the construction of hydroelectric power plants can ultimately turn simple turmoil into a major conflict. Although there are disputes over several other hydroelectric power plants on the Amu Darya and in the Syr Darya Basin, conflict between Tajikistan and Uzbekistan over the Rogun HPP is the most controversial of the region – and this conflict stands in the way of CASA-1000.

The level of confrontation between these two countries over the construction of a hydroelectric power plant must be mitigated in order to avoid aggravating regional security and also to promote the cross-border electricity trade project in the region. Thus, this study aims

to analyse the particular conflict between Tajikistan and Uzbekistan regarding construction of the Rogun HPP.

Methodology

This study took the following steps.

- To examine the conflict situation between Tajikistan and Uzbekistan regarding construction of the Rogun HPP and to clarify the issues behind the conflict.
- To identify the priorities of each country using literature review and interviews.
- To suggest possible measures to be taken by the two actors for the purpose of breaking the deadlocked negotiation.

The authors interviewed relevant experts from the national governments of the two countries as well as international aid organizations (e.g. ADB, WB, Japan International Cooperation Agency – JICA), with the understanding that the Chatham House Rule is applied, meaning that the names of the informants will remain confidential. The authors also used media sources to ascertain the position of the governments as well as the opinions of the experts in these nations.

Background of each actor

Tajikistan as a small country

Tajikistan is a landlocked country that shares borders with the Kyrgyz Republic, Uzbekistan, China and Afghanistan. Mountains cover 93% of the land area, half of which are more than 3000 masl. Due to its geographical location, Tajikistan is abundant in water resources, encompassing approximately 60% of Central Asia's water resources.

From an economic perspective, Tajikistan is the poorest country in Central Asia. However, it has abundant water resources, making hydroelectric power one of the major industries of the country, along with cotton, agricultural goods and aluminium. According to the JICA, the hydroelectric power-generating potential in Tajikistan is 117,700 GWh/year, which is equivalent to the power demand of all Central Asia (JICA, 2009). Therefore, developing the hydroelectric power potential within Tajikistan by constructing and modernizing hydroelectric power facilities has been its main policy toward achieving economic development. Tajikistan's current hydroelectric power-generating capacity is about 4900 MW, and 94% of the nation's electricity is provided by hydroelectric power (SNC-Lavalin, 2011).

Construction of the Rogun HPP began during the Soviet era, and most of the foundation work has been completed. There is growing concern about obsolescence of existing HPPs – therefore, completing the construction of the Rogun HPP as soon as possible is considered critical to the Tajik government's energy policy. Furthermore, Tajikistan argues that it needs the electricity generated by the Rogun HPP to revive its economy and to create jobs (Jacoby, 2013). Tajikistan views the Rogun HPP as a strategic tool for achieving economic development.

Uzbekistan as a powerful state

Uzbekistan is one of the largest countries in Central Asia from a geographical standpoint, and with a total population of 29.78 million it is the most populous country in the region. In addition, Uzbekistan has the region's second largest economy.

Uzbekistan's major exported commodities include natural gas, gold and cotton. Due to favourable trade terms for its key export commodities as well as the government's

macroeconomic management, Uzbekistan has enjoyed robust gross domestic product (GDP) growth for the past 10 years (World Bank, 2014a).

Agriculture is also the major contributor of the country's economy, as nearly 63% of the population lives in rural areas, and agriculture contributes 28% of the total national GDP (Uzbekistan, 2014). Uzbekistan is one of the world's largest exporters of cotton, which is supported by the region's large irrigation system. Thus, water resources are vital to Uzbekistan's economy.

Bohr (2004) insisted that after independence in 1991, Uzbekistan has consolidated its position as the regional hegemon, steadily replacing Moscow as the dominant power in Central Asia. Spechler and Spechler (2009) also recognize Uzbekistan as the most powerful state in Central Asia. The only one that borders all others, Uzbekistan considers itself the natural leader of the five post-Communist states.

Regional power and foreign policies of the two countries

Considering its large population, economics and regional role, it is obvious that Uzbekistan is a powerful country and is thus often viewed as a regional hegemon by others. Conversely, Tajikistan is a weak country compared with other Central Asian republics. Moreover, because Tajikistan's infrastructure is completely linked with Uzbekistan and Kyrgyzstan, disagreements with these states tend to exacerbate the economic situation in Tajikistan. As a result, Tajikistan tends to have friendly relationships with all other republics (Chatterjee et al., 2013).

On the other hand, there is a shared perception that Uzbekistan prefers to avoid close collaboration with its regional neighbours. Furthermore, Uzbekistan sometimes adopts a forceful approach when dealing with its neighbours, such as stopping gas supplies and blocking a rail link into Tajikistan. Such foreign policy has aroused a sense of distrust with neighbouring countries.

Azam and Makhmejanov (2010) explain that the turning point in the Uzbek regime's policy took place after a number of bombings in the Uzbek capital in 1999, which killed 15 people. Furthermore, they also point out that the Uzbek government switched its policy from regional integration to politico-economic isolationism in response to a growing Islamist threat.

The power discrepancy between Uzbekistan and Tajikistan, as well as the general stances of the countries mentioned above, may help to provide a clearer understanding of the issues surrounding the Rogun HPP.

Perspective of each country regarding the issues surrounding the Rogun HPP

Analytical framework and materials collected for analysis

The major viewpoints of Tajikistan and Uzbekistan concerning the Rogun HPP were extracted from major news sites from each country, clarified by the authors, and explained from both economic and political perspectives. The news sites were chosen based on referrals from the researchers working in Central Asia, international organizations, and citizens of both Uzbekistan and Tajikistan. In addition, the different contentions of each actor regarding the issues and the relationship between both countries are explained in order to clarify what is really taking place.

Viewpoint of Tajikistan: energy shortage

Economic perspective

Winter energy shortages remain a serious issue in Tajikistan. According to the WB, approximately 70% of the Tajik population suffers from extensive winter electricity shortages. Estimated at about 2700 GWh/year, about a quarter of the country's winter electricity demand imposes an economic loss estimated at over US$200 million per annum, or 3% of GDP (World Bank, 2012b). According to the media, the president of Tajikistan has especially emphasized the strategic importance for constructing the Rogun HPP when the county declared a humanitarian crisis due to winter energy shortages in 2008–09 (Marat, 2010). However, there are also other issues requiring solutions. Tajikistan's electricity shortages occur during the winter because the river's flow is low, causing insufficient hydroelectric power production. This low flow unfortunately coincides with peak electricity demand driven by heating needs (World Bank, 2012b). The latter issue must be resolved in order to mitigate the country's electricity shortage.

Political perspective

Building the Rogun HPP has become a matter of national pride for Tajikistan since the 2008–09 humanitarian crisis (Marat, 2010). Water is one of the few resources on which Tajikistan can rely, and Chmielewski (2013) points out that Tajiks see their water resources as a source of pride that further exploits the country's good fortune. Tajikistan is regarded as an autocratic state, even though its autocracy is not as strong as that of Uzbekistan. The president of Tajikistan, like those of other Central Asian countries, is keen to maintain and strengthen his political position. Confronted by growing public anger over chronic energy shortages, according to a media report the Tajik president has made development of the energy sector the main focus of his government (Sodiqov, 2011). Furthermore, political pressure from the population regarding the Rogun HPP project has recently been so strong that the failure of this project could undermine the president's popularity (Laruelle & Peyrouse, 2013). In this regard, the Rogun HPP may represent an important political strategy to prevent any threat to the strength of the president's political position.

Viewpoint of Tajikistan: dependence on neighbouring countries for energy

Economic perspective

Tajikistan has been heavily dependent on natural gas and electricity from its neighbouring countries through CAPS, especially Uzbekistan. Tajikistan also imported electricity from Turkmenistan via Uzbekistan. Thus, following Uzbekistan's withdrawal from the energy system, Tajikistan became completely isolated from the power system, which damaged the country's energy supply and economy. A report by the World Bank (2012b) stated that Tajikistan, the Kyrgyz Republic and Uzbekistan drew excessive power from the regional grid – far beyond what they were entitled to draw – during an unusually cold winter in 2008–09. Uzbekistan and Kazakhstan both claimed that Tajikistan had unilaterally taken electricity from them or not paid for it on time (Anon., personal communication in Manila, 21 August 2013). Following these events, Kazakhstan and then Uzbekistan declared their withdrawal from CAPS in 2009 due to the system's instability. The ADB pointed out that during Soviet times settlements for electricity exchange and energy supply were based on a centrally planned economy without consideration of the real cost (ADB, 2012). As a result, once the

former republics gained their independence, disputes arose over these costs, causing a reduction or interruption in the supply of coal and gas to the Kyrgyz Republic and Tajikistan. The gas supply from Uzbekistan to Tajikistan throughout the winter has been repeatedly interrupted in recent years, mostly due to non-payment (Jacoby, 2013). Tajikistan justifies its position regarding construction of the Rogun HPP by claiming that the increasing price of oil and gas is negatively affecting the country's economic and social situation, which obliges it to take supplementary action to promote its national strategic interests such as energy independence (Asia Plus, 2008). Efforts to rejuvenate trade are important for Tajikistan's energy stability and to enable all countries in Central Asia to reap the enormous potential benefits (World Bank, 2012b).

Political perspective

Although it is often said that CAPS is economically beneficial for all Central Asian countries, any interruption to the electricity supply would obviously aggravate relations among countries and foster a sense of mistrust. This is the case between Tajikistan and Uzbekistan. Olcotto (2010) pointed out that the energy cutbacks introduced in both the Kyrgyz Republic and Tajikistan during the cold winter of 2007–08 increased the general sense of ill-will toward Uzbeks. As a result, both countries attempted to reduce their dependency on Uzbek gas by producing more electricity in the winter. It was reported that Uzbekistan's fierce opposition to the Rogun HPP has ironically helped to turn it into a symbol of national pride for most Tajiks who now see Uzbekistan's objections as an additional motivation to complete the dam (Sodiqov, 2011). Tajikistan's attempt to develop its own hydroelectric power facilities, in an effort to end its dependence on Uzbekistan, has simply aroused greater opposition. This has given the Tajiks additional motivation to build the Rogun HPP, seemingly trapping the conflict in a vicious circle.

Viewpoint of Tajikistan: obsolescence of existing HPPs

Economic perspective

The fact of the ageing hydropower plants in Tajikistan appears to be one of the reasons Tajikistan is motivated to finish construction of the Rogun HPP as quickly as possible. Many of the large Central Asian electricity installations were built in the 1960s and 1970s and have become obsolete, although no real replacement or refurbishment programmes have begun (Laruelle & Peyrouse, 2013). Unfortunately, Tajikistan's poor economy does not permit modernization or reconstruction of its hydroelectric power plants. The government of Tajikistan has thus concentrated on building new dams. In addition, it is understood that the Nurek reservoir has been experiencing sedimentation that is affecting its live storage. Tajikistan says that every day the construction of the Rogun HPP is delayed it may seriously affect the functioning of other hydroelectric power plants in the Vakhsh River cascade (Yuldoshev, 2011).

Political perspective

Concern over the obsolescence of existing HPPs was not expressed in a political sense. However, as noted in other issues, hydroelectric power plants in Tajikistan are recognized as politically strategic tools. In this regard, the obsolescence of existing HPPs would result in Tajikistan losing the means to improve its political position and thus achieve economic development.

Viewpoint of Tajikistan: climate change

Economic perspective

Tajikistan already suffers from land degradation, water scarcity and a high frequency of disasters at significant human and material cost. Thus, according to the World Bank (2012a), it is highly vulnerable to the adverse effects of global climate change. The WB's report further states that climate change may potentially deepen poverty by reducing agricultural yields, raising food prices, increasing both the spread of water-borne disease, and compounding frequency and severity of disasters. As a result of global warming and subsequent rising river levels, Tajikistan sees greater benefit in completing the Rogun HPP, claiming that the dam could literally save lives by reducing the number of fatally hazardous floods and mudslides (Swarup, 2009). Tajikistan claims, according to the media, that the Rogun HPP is important to ensure water security and to guarantee water for irrigation in all Central Asian countries during the dry years by taking into account the seasonal aspects and building reservoirs to regulate long-term river flow (*European Times*, 2014). Some experts insist that Uzbekistan should look more at the merits of dam construction in upstream countries for its impact on irrigation, as a greater amount of water will be supplied to downstream countries during the summer if upstream countries generate more electricity than they currently do (Anon., personal communication in Kabul, 17 November 2013). However, Uzbekistan seems to have a strong mistrust of upstream countries in terms of their water use, and fears that Tajikistan's attempt to restart construction of the Rogun HPP would be a potential threat for Uzbekistan's water security, especially because water may become less available to Uzbeks in the summer if Tajikistan operates the Rogun HPP only to enhance electricity generation in winter time.

Political perspective

Decreasing amounts of water due to climate change would threaten Tajikistan's water security and in turn endanger its national security. Tajikistan has frequently claimed in the media that its hydroelectric power is clean energy that can contribute to achieving sustainable development in Central Asia as well as South Asia (Stevenson, 2011). Although researchers and the government of Tajikistan both recognize the issue of climate change, economic development is of greater priority – as it is in other developing countries. For Tajikistan, obtaining international financial support for the Rogun HPP is crucial. In this regard, one could assume that the contribution of Tajikistan's clean energy to sustainable development may be one strategy for obtaining international emphasis and support for the Rogun HPP.

Viewpoint of Uzbekistan: limiting water supply

Economic perspective

Uzbekistan is the fifth largest producer and second largest exporter of cotton in the world (Laruelle & Peyrouse, 2013). Its biggest concern regarding the Rogun HPP is that Tajikistan would release water from the reservoir in the winter to meet its peak demand of electricity instead of releasing water in the summer when Uzbekistan needs it for irrigation. Uzbekistan fears this would damage its agriculture, especially its cotton industry. Research into the economic cost of a water shortage on Uzbekistan's agriculture has shown that the country's GDP may be reduced by 2.2%, costing the country more than US$609 million annually and putting 336,000 labourers out of work (Jalilov, 2010). Uzbekistan claims, according to the media,

that even with the most favourable conditions, the planned work on the Rogun HPP would worsen the living conditions of millions of people in downstream countries (Jahon, 2010).

Political perspective

It was reported that Uzbekistan seems concerned that if the Rogun HPP were built, Tajikistan would be able to control the flow of the Amu Darya and use water availability as a powerful form of leverage in a future dispute with Uzbekistan (Mashrab, 2012). While Tajikistan emphasizes responsibility toward its neighbours and affirms it will never restrict water resources (Stevenson, 2011), Uzbekistan believes that once the dam is constructed Tajikistan would use it in a manner that would impact Uzbekistan (Anon., personal communication in Manila, 20 August 2013). In addition, Uzbekistan is concerned about the time required to fill the reservoir. Uzbekistan is suspicious that Tajikistan would fill the Rogun reservoir over seven to eight years, while it is thought that a slower filling time of 12–18 years would prevent severe irrigation problems (Yaylymova, 2013). This mistrust stems from past experience in a conflict with the Kyrgyz Republic over the use of water in the Syr Darya River basin. Azam and Makhmejanov (2010) explain that the Kyrgyz Republic ignored its commitments and excessively released water in the winter, causing many problems for downstream countries where flooding destroyed a number of villages every year. Although some experts and Tajiks claim that Uzbekistan should see the merit for its irrigation – as Tajikistan will supply more water to downstream countries during the summer in order to generate more electricity (Anon., personal communication in Kabul, 17 November 2013) – Uzbekistan's position as a downstream country is to oppose construction of the dam in order to mitigate the risk of Tajikistan using the Rogun HPP as a political tool.

Viewpoint of Uzbekistan: issue of dam safety and dam height

Economic perspective

The Rogun HPP and other major hydropower plants are located on the Vakhsh River, an area with a high seismic risk. Uzbekistan has demonstrated concern regarding the safety of the dam in the event of a strong earthquake. Uzbek authorities emphasize that in the event of the dam's destruction, the wave would reach 6–7 m in height and an area of up to 1.5 million hectares would be flooded, including over 700 settlements in the territories of downstream countries as well as Tajikistan (Jahon, 2010). Both international experts and Uzbekistan have therefore suggested a series of smaller hydropower stations. Tajikistan, however, does not want to compromise on the height of the dam. When the Russian aluminium company RusAL, which had agreed to build the first stage of the Rogun HPP, suggested to the Tajiks in 2004 that the dam should be 50 m lower, the president of Tajikistan demanded that RusAL withdraw from the project (*The Economist*, 2013). This resulted in the termination of their agreement. Referring to the feasibility study of the construction company Lahmeyer International, Wegerich, Olsson, and Froebrich (2007) argued that the risks of the different stages of dam construction are as follows. At stage one of construction the Rogun HPP is supposed to provide an annual energy output of 5.6 TWh. To achieve this, the height should be 225 m with a total reservoir volume of 2.78 km^3, live storage of 1.92 km^3 and an installed capacity of 1000 MW. At stage two of construction the dam height is supposed to be raised to 285 m with a total reservoir volume of 6.78 km^3 and a live storage 3.98 km^3. Finally, at stage three of construction the dam height is supposed to be raised to 335 m with a total reservoir volume of 13.3 km^3 and a live storage 10.3 km^3. Neither stages one nor two could

be perceived as a threat because the live storage is still below 40% of the mean annual flow, and the Vakhsh River contributes only 25% of the total Amu Darya flow. Stage three could potentially be a threat to Uzbekistan or Turkmenistan and their agricultural production.

Political perspective

Some experts maintain that the effect of the water flow on the downstream countries is not a built-in function of dam height but is instead contingent upon the way the dam is operated. Releasing water from the dam does not affect downstream countries because the Rogun HPP is located upstream from the Nurek HPP. Thus, it is expected that water flow can be controlled by a combination of the Nurek HPP and the Rogun HPP (Anon., personal communication in Kabul, 25 October 2013). However, the issue of the dam's height can also be explained from a political perspective. Sodiqov (2012) pointed out that although the Rogun HPP does not require a height of 335 m in order to generate 13 billion kWh, building the dam based on the original Soviet blueprint will allow Tajikistan to control the flow of the Vakhsh River. In addition, the height of the dam may also be a matter of pride for Tajikistan – the country has also constructed the tallest flagpole and the longest flag in the world. In the same way, Tajikistan is currently building the largest teahouse in the world. For many Tajiks, at least publicly, all these world records are a source of collective pride (Eurasianet, 2013). Uzbekistan may perceive this, and in addition to giving Tajikistan the ability to control the flow of the river, the construction of a 335-m dam in an active seismic area may be seen as a form of political pressure from Tajikistan.

Viewpoint of Uzbekistan: increased competition for electricity exports

Economic perspective

Uzbekistan is concerned with competition over energy prices. It has exported electricity to Afghanistan since 2009 and remains a major electricity exporter to the country. However, since Tajikistan initiated an agreement to sell electricity to Afghanistan, Uzbekistan has shown concern over the increasing competition as Tajikistan's winter rates are far lower (US$0.35/GWh) than those offered by Uzbekistan (US$0.75/GWh) (Laruelle & Peyrouse, 2013). In addition, the planned CASA-1000 cross-border electricity trade project described above would afford Tajikistan greater opportunities to expand its electricity trade. For Uzbekistan, exclusion from the CASAREM and CASA-1000 electricity markets as well as its disadvantage in terms price competition are both economic threats. Furthermore, according to the media, Uzbeks argue that Tajikistan would be able to increase its energy exports once they own the Rogun HPP, giving Uzbekistan even more incentive to lobby against the hydropower plant (Uznews.net, 2011). However, while Tajikistan has surplus power and the ability to export electricity only during summer, Uzbekistan can export electricity all year round. Even so, Uzbekistan is concerned that it would only retain an advantage over its competition in winter.

Political perspective

The political dimensions of this issue include a potential hindrance to efforts to expand the electricity market in the region. For instance, Uzbekistan demanded that Afghanistan not purchase electricity from Tajikistan, warning that if it did not meet this request Uzbekistan might stop exporting its electricity to Afghanistan altogether (Onga, 2013). According to Onga, Uzbekistan had threatened to cut Afghanistan's power supply due to its agreement with Tajikistan, as it wanted to be the only one holding leverage over Afghanistan. Uzbekistan

sometimes wields aggressive foreign policies with its neighbours, which may foster a sense of distrust on the part of Tajikistan and other neighbouring countries. However, losing leverage over neighbouring countries may also disrupt Uzbekistan's strong political position in the region.

Viewpoint of Uzbekistan: environmental issue of the Aral Sea

Economic perspective

The Aral Sea is often described as one of the worst examples of man-made environmental degradation in the 20th century. It was once the fourth largest lake in the world – however, it has now shrunk by more than 70% due to the diversion of water flow from the Amu Darya and Syr Darya rivers for massive irrigation efforts under the Soviet regime. Unless effective preventative measures are taken, the large Aral Sea is predicted to disappear completely in the near future. This disaster has had several detrimental effects including loss of the fishing industry, increase in salinity and contaminants, desertification of the river deltas and sea floor, impact of salinity and dust on inhabitants, and climate change. The shrinkage of the Aral Sea has been of considerable concern to Uzbekistan, and the minister of foreign affairs has highlighted this issue to the international community at the 68th session of the United Nations General Assembly in 2013 (Permanent Mission of the Republic of Uzbekistan to the United Nations, 2013). Uzbekistan claims that the Rogun HPP is a relic of the former Soviet Union, whose water-related policies in Central Asia have already led to the near complete disappearance of the Aral Sea (Rahaman, 2012), and suggests that it might further endanger the already fragile environmental balance in the region (Mashrab, 2012).

Political perspective

Some researchers are suspicious about Uzbek concerns over the Aral Sea. In fact, a quantity of natural gas has been discovered around the Aral Sea. An agreement to form a consortium of investors consisting of oil and gas companies from Uzbekistan, Russia, Malaysia, South Korea and China was established in 2005 and gas has been extracted from this area. Because Uzbekistan is keen to expand its natural gas exports from the area as well, restoration of the Aral Sea may be not the country's priority as it claims. Furthermore, Uzbekistan recently began targeting Tajikistan's aluminium smelter, TALCO, claiming that construction of the Rogun HPP would enable Tajikistan to increase its aluminium production capacity, resulting in more intense environmental pollution (Anon., 2 April 2010). However, the environmental movement of Uzbekistan against TALCO is seen by experts as a political strategy of the Uzbek government to hinder construction of the Rogun HPP. An Uzbek political analyst explains that protests cannot be carried out without the authorities receiving notice (Ibragimova & Saadi, 2010). Taking into consideration the facts discussed above, one could assume that environmental issues, including the Aral Sea, may be used as part of Uzbekistan's political strategy.

Discussion

Tajikistan and Uzbekistan positions concerning the Rogun HPP

A total of eight issues were extracted from the media – four from the viewpoint of Tajikistan and four from the viewpoint of Uzbekistan – and these issues were investigated from economic, political and environmental perspectives. These issues are as follows:

- The position of Tajikistan regarding the Rogun HPP:
- Alleviating energy shortage.

- Reducing the dependence on energy supply from neighbouring countries.
- Coping with the obsolescence of existing HPPs.
- Adaptation for climate change.
- Position of Uzbekistan to the Rogun HPP:
- Reduction of water in summer for irrigation.
- Concern over dam safety and dam height.
- Deterioration of the Aral Sea's environment.
- Increase in competition for electricity exports.

The positions of Tajikistan and Uzbekistan with respect to the Rogun HPP were examined using numbers featured in the media; Table 1 shows the number of times the issues related to the Rogun HPP were featured in the media.

Table 2 shows the number of times the issues with regard to Tajikistan's positions on the Rogun HPP were featured in the media. Government officials and researchers from Tajikistan often stated their positions from the context of economic development. In addition, as Tajikistan is the poorest country in Central Asia, cooperation with other countries was often emphasized in order to gain financial support. The economic perspective is thus assumed to be more critical for Tajikistan. Table 3 shows the number of times Uzbekistan's positions on the Rogun HPP were featured in the media. It is clearly visible from these tables that

Table 1. Number of analysed articles.

Media of country or region	News site	Number of collected articles
Tajikistan	Asia-Plus	56
Uzbekistan	Jahon	7
	Government-issued booklet	1
	Uznews.net	25
Russia	Fergana.ru	12
Other	*Asia Times*	18
	The Economist	2
	European Times	3
Total		124

Table 2. Number of times Tajikistan's positions with Rogun Hydropower Plant (HPP) are featured in the media.

Number of times	Position of Tajikistan to the Rogun HPP
14	Alleviating energy shortage
8	Reducing the dependence on energy supply from neighbouring countries
2	Coping with obsolescence of existing HPPs
1	Adaptation for climate change

Table 3. Number of times Uzbekistan's positions to Rogun Hydropower Plant (HPP) are featured in the media.

Number of times	Position of Uzbekistan to the Rogun HPP
16	Reduction of water in summer for irrigation
13	Concern over dam safety and dam height
9	Deterioration of the Aral Sea's environment
1	Increase of competition for electricity exports

while Tajikistan advocates the economic benefits of construction of Rogun HPP, Uzbekistan places its emphasis on the adverse economic and environmental impacts caused by the Rogun HPP.

The argument between Tajikistan and Uzbekistan regarding construction of Rogun HPP seems deadlocked, despite the efforts of donor agencies. For example, the World Bank (2014b) conducted comprehensive assessment studies for the proposed Rogun HPP and published 12 volumes of very detailed reports about the financial feasibility, technical viability and environmental sustainability of the Rogun HPP. However, Rustam Azimov, first deputy prime minister of Uzbekistan stated in the media that the conclusions of the WB's reports were absolutely unacceptable for Uzbekistan (UzDaily, 2014).

Political stance of the government as a constraint for Tajikistan

The positions of Tajikistan regarding – namely alleviating an energy shortage, reducing the dependence on energy supply from neighbouring countries, coping with the obsolescence of existing HPPs, and adaptation for climate change – are all suggested as objectives in favour of constructing the Rogun HPP. For Tajikistan, owning the Rogun HPP would significantly elevate its position in terms of political and economic power, particularly vis-à-vis Uzbekistan. Tajikistan's prime minister said that the future of the country's economy depends on construction of the Rogun HPP and that it is the answer to the country's social problems (Demytrie, 2010). He also mentioned that many Tajiks also believe that the Rogun HPP will solve all their problems (*The Economist*, 2013).

However, alleviating the energy shortage and reducing dependence on energy supply from neighbouring countries may be met with other alternatives, for example by construction of smaller hydropower stations. The obsolescence of existing HPPs may be dealt with by modernizing existing HPPs, not by building the Rogun HPP. Finally, adaptation for climate change may be achieved using various options – thus, constructing the Rogun HPP is by no means the only solution.

Irrational arguments by Uzbekistan about the impact of CASA-1000 on its agriculture

Although Uzbekistan is a relatively large country in Central Asia, it is defined as a medium-to-low-income country on a global scale. Thus, economic development is crucial for Uzbekistan. The potential reduction of water in summer would be of utmost concern, followed by dam safety and the environmental impact on the Aral Sea.

Uzbekistan maintains construction of the Rogun Dam would result in less discharge from the reservoir in summer, causing the irrigated farmland of Uzbekistan (located downstream) to suffer tremendously. This argument is valid only if the water is stored in the reservoir for discharge (i.e., to generate hydropower) in winter. However, the planned CASA-1000 involves trading electricity from Tajikistan (and Kyrgyzstan) with Afghanistan and Pakistan in the summer only, not in winter. Uzbekistan's very clear political aim is to prevent Tajikistan from building the Rogun HPP. Uzbekistan's government believes it must cast the mandate of CASA-1000 and the role of the Rogun HPP in vague terms in order to avoid suspicion in the minds of its people concerning the necessity of the construction.

To some extent, Uzbekistan has attempted to employ the same logic to express its objection to the Rogun HPP with foreign countries and aid agencies. However, it is not making a persuasive argument for either party.

Further thoughts: possible measures for solution

Involving Uzbekistan as a beneficiary of the project

Experts on both the region and the issue have suggested to the authors that one of the fundamental reasons behind Uzbekistan's very strong opposition to the project seems to stem from the fact that Uzbekistan is just outside the scope of the planned CASA-1000 project (Anon., personal communications in Tokyo, 23 July 2013; and in Manila, 20 August 2013 and 23 October 2014). Uzbekistan may therefore feel victimized by the project, with Tajikistan as the winner. This suggests that the CASA-1000 project has a fatal shortcoming in its design, as the project would benefit only two of the countries in Central Asia (namely Tajikistan and Kyrgyzstan) and place Uzbekistan and Turkmenistan by the wayside. This also implies that CASA-1000 may be a feasible project only in terms of economy but not in the context of regional politics. Donor agencies supporting CASA-1000 should have offered assistance to Uzbekistan to compensate for any possible impact by CASA-1000 and to secure Uzbekistan's concurrence in the implementation. Such efforts, however, have not materialized.

A natural solution is to involve Uzbekistan within the framework of the economic benefits of the electricity trade to Afghanistan and Pakistan. Thus, the proposed TUTAP (Turkmenistan, Uzbekistan, Tajikistan, Afghanistan and Pakistan) project envisages sending electricity both from Uzbekistan and Turkmenistan to Afghanistan and Pakistan (Liston, 2013).

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