# INTRICATE SPECIFICS OF REGIONAL WATER SECURITY IN CENTRAL ASIA

***Ulugbeck A. Khasanov, PhD***

(http://www.abebooks.co.uk/South-Central-Asia-Quest-Peace-Cooperation/10296498046/bd)

## *Introduction*

The threats of a new era in international relations have come to replace the old threats and contradictions of the bipolar system. These threats have stated themselves louder than ever earlier in the present condition of greater interdependence of states, affecting their security systems. The main features of these changes are associated with the exit of the USSR from the world arena as a superpower and disintegration of its colossal sphere of influence as well as emergence of new states, pursuing their national interests. In this backdrop, the unending war in Afghanistan is a grave matter as much to the security of Central Asian countries as to India too. The US-led anti-terrorist coalition campaign which was launched in October 2001 and which was later turned into NATO-ISAF program is scheduled to end after 2014, leaving the region in uncertainty. This has generated plausible apprehensions about security and stability in Central and South Asian regions.

Following the weakening of Russian influence, new Central Asian states are faced with the necessity of prioritizing between internal consolidation, on the one hand, and regional economic and political integration, on the other. These choices, although do not contradict each other, they do not coincide yet either. No matter how things stand, the situation prompts the need for these states to face the issue of national security, which did not exist for them earlier.[1] The focus of this paper is

primarily on various security issues facing Central Asia as a region in general.

### *Conflictive Situation*

Obviously, the internal and external stability and security of Central Asia is essentially contingent upon the success of the ongoing political and socio-economic reforms. Given the peculiarity of the Central Asian region, its geopolitical situation may become one of the fuses of instability in the whole world. Approximate population of Central Asia exceeds one hundred million people, belonging to different ethnic and religious groups. Although due to serious efforts of US-led military forces it was possible to weaken the influence of Taliban movement in many provinces of Afghanistan, except the vast territories in the northwest of Pakistan, lying between Afghanistan to the west and north, and the provinces of Khyber to the east and Baluchistan to the south and Northern Waziristan. The source of terrorism and conflicts in the region, however, will still require a lot of time and efforts for the elimination of their deep-rooted causes.

The confrontation to threats today bears a comprehensive character, not so much military in nature, although it is not excluded, but rather political, diplomatic and social. The last two kinds are especially broadly applicable and effective for ensuring internal security and stability. Due to their economic development and the needs arising on its basis they strive to look for exits to sea ports, making themselves dependent in one way or another on the goodwill of the neighboring states. Even in the most favorable of scenarios, development of relations with the neighboring states will still depend on the stability of the political

situation, not so much in their own country, but rather in the adjacent states and also on many other such circumstances through which relations between states are usually linked.

At the same time the regional economy strongly depends on nature, strong climatic variations, which are characterized by dryness, lack of atmospheric precipitation, low relative humidity and great solar activity. All these conditions have special importance in the development of artificial irrigation and irrigation network. In turn, the specifics of irrigation system require formation of economic relations in the countryside and rational use of water resources. During the last decade, for instance, Uzbekistan became one of the leading producers of cotton in the world due to the adoption of various irrigation techniques. Cotton and its products possess a large export potential, and therefore are of special significance for countries like Uzbekistan and its national interest. The other four Central Asian countries produce almost two million tons of cotton-fiber which is equal to annual volume of Uzbek crop.[2]

### *Water, Energy and Politics*

All this adds to the acuteness of the issue of Uzbekistan's water resources, which is now a major national concern. The largest rivers of Uzbekistan and of the entire region on the whole are Amu Darya and Syr Darya. Upstream of both these rivers and their tributaries have their origin outside Uzbekistan. They flow across its territory only within the limits of its middle and lower reaches. Besides, a large part of the water resources of these rivers is used for the irrigation of lands in all Central Asian states. One should take into account the fact that the water of the Amu Darya and Syr Darya Rivers, and also of the water bodies along

their flow are used not only for the development of new lands and irrigation in the republic and countries of the region, but also for harnessing hydroelectric power. Thus it warrants inter-country agreements with the neighboring nations. The Aral Sea (Lake) is of great importance to the region from the viewpoint of rivers falling into it. Since both the rivers have dried up at their mouths they no longer fall into the Aral. As a result, over the past forty years, the Aral Sea level has dropped by 38 meters, and the coastline has receded by more than a hundred kilometers.

The problem of safety of these large hydropower constructions on the flow of the trans-border rivers becomes extremely important as many key components are connected with it. The river as a natural body is itself a water stream as well as an air stream. It is a dynamic, natural process that knows no political boundaries of the states. One such river is Amu Darya.

Amu Darya, in its formation zone in the Republic of Tajikistan, possesses huge potential of hydropower resources whose combined value exceeds 520 billion kWh (a unit of energy equal to 1000 watt hours) in a year. Since 1930, development of hydropower resources in Tajikistan had begun. In the initial stage (1931-1937), small dams of low height, the Cascade of Varzob Hydroelectric Power Stations (HPS) 1,2,3 were built and put into operation. In the second phase (1956-1966), the Cascade of Vakhsh HPS on the river Vakhsh was constructed. In the third phase, partially intervening into the second stage,(1961-1985) the Nurek Power Plant was built to enhance efficiency of water use. The Baypazi hydro knot, constructed in 1960 was rebuilt during 1979-1989, generating

power within the limits of Baypazi HPS. Thus, today flow of the river Vakhsh is completely used for generation of electricity. The established capacity of this station is estimated to be 4635 megawatt, which is equal to one million (106) watts with annual development of 23.9 billion kw. Today Tajikistan, located along the lower reaches of Amu Darya, is building Sangtudy HPS 1 and 2, and has renewed building of Rogun HPS on the river Vakhsh.

Thus, serious challenges on this very vital issue come from mismanagement of trans-border water resources of Amu Darya and Syr Darya rivers. The threat to the nations of lower flow of these rivers, such as Uzbekistan, Turkmenistan and Kazakhstan is represented by gigantic hydropower projects well known as Kambarata-1 Kambarata-2 on Syr Darya river basin in Kyrgyzstan and Rogun and Sangtudy in Tajikistan. Both countries occupy actively seismic and highland territories. First two projects are engineered and financed by Russia; next two are developed under the aegis of Russia and Iran and its financial institutions. It will definitely have a negative impact on the economies of the entire region, heavily dependent on these rivers. Decrease in water distribution from the current level may jeopardize agriculture and food production in three thickly populated countries of the region.

***Rogun and Dashti-Dzhum***

The Rogun Hydro Power Station, which has been designed to generate 3600 megawatt of electricity, is also the world's highest dam standing tall at 335 meters and should become one of the largest HPS. Construction of Rogun Hydroelectric Power Station, Sangtudy HPS 1 and 2 are being done on the existing water basin of the river Vakhsh 10,5

cubic kilometer (the volume of a cube of side length one kilometer) Building of Rogun HPS will lead to greater water regulating ability on the flow of river Vakhsh to 25 cubic kilometers, which is 1.25 times more than mean annual value of water drained by the river. Russia has agreed to heavily invest in this project against opposition coming from low riparian states.[3]

Large hydropower of the Pyanj HPS includes the Dashti-Dzhum with a basin capacity of 17,6 cubic kilometers of water. Estimates by the World Commission on Dams suggest that hydrological cycles of functioning river systems have fundamental effects on water ecosystems. In other words, infringement on the dynamic balance of even a current of the river of Amu Darya will lead to serious changes in the stability of all river systems on the territory of Uzbekistan. Because of sharp change of a longitudinal bias of the river and decrease in in-house depth, water inflow to the aquatic fences of Uzbekistan will cease. Such problems can be noticed in Amu-Zang in the Surkhan-Darya area, Kashkadariya long distance water channel (KMK) in the Kashkadarya area[4] and Amu-Bukhara in Bukhara and Navoi areas.

Since 2005, Afghanistan and Tajikistan have jointly carried out teamwork on realization of civil-engineering designs of hydropower constructions on the river Pyanj. Iranian specialists had conducted research on potential development of water resources of the river of Amu Darya, which derives its source from Pyanj. Since 2007 information related to the work is coded by the Tajik side, but the parameters of hydropower constructions are neither disclosed nor published in press.

During Tajik-Afghan Summit in Dushanbe in 2005, the decision on building of Dashti-Dzhum HPS had been reached. The Dashti-Dzhum HPS has a capacity of 4000 mw/t and can generate 15.6 billion kw/h of electricity. The height of the dam is 320 meters, 15 meters of which is below Rogun with water basin volume of 17,6 cubic kilometers. Preliminary cost of the project is pegged at $ 3 billion. Pakistan and the Aga Khan Foundation, in whose zone of influence a portion of the building of Dashti-Dzhum HPS falls, can be a probable investor in this program. Iran too has its share of interest in the realization of this project.

Till today the degree of safety of the Usoy Rockside dam on Sarez lake with a water volume of 17,5 cubic kilometers and difference of horizon of water between two reservoirs exceeding 2000 meters is not established. Should the stored water find its own course, safety would be seriously compromised because Dashti-Dzhum water storage basin cannot sustain far too long. Destruction of this dam in the Dashti-Dzhum water basin can cause a serious loss to the entire region. Risk of destruction of the Usoy dam on Sarez Lake is a serious concern to the safety of 320-metre stone filled dam of Sarez lake. In this connection, there is a necessity for carrying out meticulous and impartial, international study on the conditions of Sarez lake, and safety of constructions of all Dashti-Dzhum hydropower stations in order to ensure the safety of Uzbekistan from flooding.

***Yavan on Zarafshan***

The Zarafshan river originates in the territory of Tajikistan and proceeds to Uzbekistan. The maximum utilization of water from the river is in the

month of July (250-690 m3/c), and the least in March (28-60 m3/c). Such features of the Zarafshan became the basis of formation and development of one of the most ancient civilizations, having irrigated agriculture. The present complex scheme of use of the river Zarafshan developed by Tajikistan, provides a pressure head tunnel above the Obburdon[5] water storage basin, submitting Zarafshan river water (pool of the river Amu Darya) through the Turkestani ridge in Ura Tube valley located along the pool of Syr-Darya.

Distance from a large Dupuli water basin to the "May Day" (Pervomayskaya) dam provides water delivery to the irrigated areas of more than 590.000 hectares and supplies water to a population of more than 7 million. On this short site of the Zarafshan river, Tajikistan plans to build a cascade of 3 Pyanjikent HPS with daily regulation capacity. In this case functioning of the "May Day" dam will be dependent on an operating mode of Pyanjikent HPS.[6]

Till 2007 Tajikistan had entered into an agreement with China to build Yavan HPS on Zarafshan river. The location of the dam of Yavan HPS is about 200 km from Dushanbe and nearly 86kms from Uzbekistan border. China took a decision to quit the project with a view to saving its relations with other three Central Asian partners. However, Tajikistan later transferred all engineering materials of Yavan HPS to Iran and ensured its further participation in materializing the project to harness the water resources of the Zarafshan. There are no legal document so far between Tajikistan and the states of the lower reaches to regulate the management of Zarafshan water. Therefore for Tajikistan there are no

obstacles for realization of the plans to build hydropower station on this river.

Geographically, Tajikistan does not have vast areas to irrigate. It has only 130 thousand hectares of land, requiring only 286 million cubic meter (0,286 км$^3$) of water for its own needs. However, Tajikistan has irrevocably withdrawn more than 1,5 cubic kilometers of water from the resources of common and transborder river Amu Darya for watering Ura Tube valley in Tajikistan, leaving about 83,3 thousand hectares of fertile agricultural lands in neighboring countries to go high and dry. It is necessary to note that there is a serious deficiency of water in the region. Any additional interference in the situation can worsen difficulties over water supply in the adjacent countries, including aggravating social and ecological environ along the flow of river Zarafshan.

***Transborder Syr Darya.***

Syr Darya originates from the merger of two rivers: Naryn and Karadariya. However, functionally Naryn Syr Darya is a uniform river into which the river Karadariya flows in and a number of other mountainous rivers of the region also flow in.[7] The total area of the river basin of Naryn Syr Darya after exit makes 142 thousand square kilometers at so called Farkhad gate, close to Khodjent area of Tajikistan.

Building of Kambarata-1 and Kambarata-2 HPS will lead to increase in the volume of the reservoir on river Naryn to 25,1 cubic kilometer, which is twice more than the total volume of water that Naryn drains. It will take ten years to fill the dam. During the construction of dams of Kambarata HPS, the use of targeted explosion technology seriously impacts and puts pressure on the foundation of the Toktogul dam. In

case of earthquakes and landslides the risk of such huge dam collapse will be a nightmarish possibility.

### *Trans-border Canals*

As a protective measure against possible unconfirmed withdrawal of water from the area, an idea of so called "circling" of hydro-power and irrigational networks in Fergana valley has been developed. It was embodied, first of all, in the interregional and trans-border canals. On the right and left flanks of Naryn-Syr-Darya there are many big trans-boundary canals. They are Big Andizhan and Fergana canals on the borders of Uzbekistan and Kyrgyzstan. The circling project, initiated by Uzbekistan in late 1980s had ultimately entailed the Southern Fergana to become two big canals: Big Namangan and Northern Fergana canals. The big Namangan canal, with a water fence on the territory of Kyrgyzstan serves, basically, the land of the Namangan area – about 47 thousand hectares. Northern Fergana canal irrigates about 63 thousand hectares of land in Uzbekistan and about 5 thousand hectares of land in Tajikistan. The big Andizhan canal with a water fence from the river Naryn irrigates approximately 74 thousand hectares of land in the Namangan and Andizhan areas. The largest canal of region is the Big Fergana canal that covers about 310.000 hectares of land, and in Uzbekistan it irrigates approximately 175 thousand hectares. The southern Fergana canal irrigates about 80 thousand hectares in the Andizhan and Fergana areas.

Excess use of water across Naryn-Syr-Darya increases annually up to 3 or 4 cubic kilometers. This slows down the canal flow proportionately by the time it reaches Syr Darya and Dzhizak areas of Uzbekistan, which

suffer agricultural damages to a great extent. The general loss reaches 50% of total average crop output and farm products. Kazakhstan is secured, thanks to the Chardara water reservoir with a useful water capacity of nearly 5 cubic kilometers. Moreover, raised water level in the reservoir has allowed Kazakhstan recently to increase water inflow into the Syr-Darya delta on its territory, thereby restoring fishery in the Sary-Chaganak bay.

Thus, building Rogun HPS on the Vakhsh, Dashti-Dzhum HPS on the Pyanj and Yavan HPS on the Zarafshan on the one hand, and the cascade of HPS on Naryn-Syr-Darya basin on the other, is mostly directed at creating conditions in which all hydro power stations on these rivers could isolate other states from the vast resources of transborder rivers. Such irresponsible position of both Kirgizstan and Tajikistan can put the lives of more than 40 million people in the region into very precarious condition.[8]

In conformity with the recommendations of authoritative division of the United Nations World Commission on Dams, Uzbekistan has the right to demand from neighbouring, upstream states to carry out international inspection on the degree of influence of hydropower knots with large water reservoirs on safety of territory of Uzbekistan. It has also the right to demand for a thorough study of the impact of these water bodies on social and economic conditions in case of gross infringement of present hydro power balance in the region as a whole. Therefore Uzbekistan will continue to make utmost efforts at various levels to ensure its safety in all spheres of human endeavour, particularly in the most sensitive segments.

## *In Lieu of Conclusion*

In this context Indian experience would be useful to learn from and understand. For example, reaching an agreement with Pakistan on Indus Water Treaty[9] was not easy. Signed in 1960 by President Muhammad Ayub Khan and Prime-Minister Jawaharlal Nehru, it took 10 years to work out an agreement. It was vitally important for both of them to regulate water distribution on rivers like Indus, Chenab, Ravi, Jhelum, Sutlej and their tributaries. Baglihar Hydro Power Station project on Chenab River became real only after the long study and recommendations given by World Water Council acting under the UN. Even now the dispute over construction of Nimmu-Bazgo Hydro Power Station on the Indus is a topic of continued diplomatic talks between both rivals for security interests of Pakistan and India.

At the same time the decision of India to finance the reconstruction plan of Varzob-1 Hydropower Station in Tajikistan, this author opines, would definitely not be beneficial or may even spoil its' almost vexed reputation in the region. This very questionable and controversial step may deteriorate the current situation over proper and balanced water distribution among other Central Asian nations. Varzob-1, where India is investing about $ 70 million, could hit the agricultural sector of water dependent nations of the region. It may worsen social tensions, thereby reducing the total volume of Amu Darya river resources to about 10-15% from its current level. It is a reminder to every non regional nation to be more careful in taking into consideration possible steps towards such a painful and sensitive issue as water sharing.

That is to say that before entering the very vital sphere of the regional security, it is better to have proper understanding or obtain clues on specifics of such issues that may not damage the interest of potential partners in Central Asia. Otherwise it may look like throwing a stone to its own garden. Long history of international relations gives us a good advice on how to succeed in foreign policy and that is about acting, adequately to the role, place, capacity and perception of others.

## *References*

[1] Введение в теорию международных отношений. УМЭД – Ташкент, 2009, стр.47

[2] Национальные Интересы и Региональная Безопасность (Центрально-Азиатский контекст) Москва, 2004, стр.34 See also: Введение в теорию международных отношений. УМЭД – Ташкент, 2009, стр.69

[3] Engineering Economic Institute Challenges in Provision of Sustainability of Water Resources. Materials of the Conference. November 20-21, 2010 Karshi, Uzbekistan

[4] Papers of Central Asian International Research and Practice Conference «Twenty Years of Water Cooperation among the Central Asian Countries: Past Experience and Future Challenges» (Interstate Commission for Water Coordination (ICWC)) 20-21 September 2012, Almaty Kazakhstan

[5] Materials National Unitary Research & Projecting Institute of Tajikistan – "Nurofar" (http://www.nurofar.tj/index.php/ru/topprojects).

[6] Engineering Economic Institute Challenges in Provision of Sustainability of Water Resources. Materials of the Conference. November 20-21, 2010 Karshi, Uzbekistan

[7] Макатаев А. Внешняя политика Кыргызстана. Международные отношения сопредельных стран. Ташкент, 2008, стр.58

[8] Хасанов У. Внешняя политика Таджикистана. Международные отношения сопредельных стран. Ташкент, 2008, стр.69

[9] Современное состояние и проблемы орошения Индии (http://www.cawater-info.net/review/index.htm#azia)