JAPAN AND WATER RESOURCES OF TAJIKISTAN: CONTRIBUTION, CHALLENGES, AND REALITIES

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ABSTRACT

Global population growth increases the demand in water. The rational usage of water and efficient management are vital in various regions, including Central Asia. The Tajikistan Government also takes this matter seriously and has designated the importance of water in the National Development Strategy 2030. The progress in the wa-

ter sector may impact human life and improve the living standard of the population. In this aspect, the Government of Tajikistan proposed to pay particular attention to the water issue and contribute to raising it globally.

Japan is greatly concerned over the increasingly severe water problems in the world, including issues of water hygiene. It has been implementing water projects in Tajikistan starting from the early years of Tajikistan's independence. Japan's attention to the water crisis in the Central Asian region has increased because of the shrinking of the Aral Sea, the melting of glaciers, and the possibility of water usage of the Sarez Lake in Tajikistan. The Japanese authorities also understand the reasons for the confrontation among the states of the region over the water issue.

This paper focuses on the impact of the water sector on the development of Tajikistan. It also discusses the contribution of Japan to the water sector of Tajikistan, while exploring the challenges faced and obstacles met by the projects being implemented.

KEYWORDS: *Tajikistan, Japan, water, energy.*

Introduction

The water reserves in Tajikistan rank the first in Central Asia with almost six percent of country's territory covered by glaciers. Over ninety percent of the country's electricity is generated at hydropower plants. Therefore, developing the water resource sector has been considered as a significant segment of Tajikistan's development strategy. In addition, the two major rivers, Amu Darya and Syr Darya, heading from Tajikistan and Kyrgyzstan, feed the Aral Sea basin. Therefore, the water project and policy in these countries may cause a different reaction from the other Central Asian countries. The regional countries' growing contention over the water allocation has been taken place since the early years of their independence. However, the situation around this issue has been improved since the end of 2016, when the new President was elected in Uzbekistan. These projects yet officially have been criticized or supported, while the Government of Tajikistan keeps door open for negotiation.

Despite the importance of the transboundary water issues, this paper focuses on the water sector impact on the development of Tajikistan. The Government of Tajikistan has designated the importance of the water issue in the National Development Strategy 2030. The progress in the water sector may impact human life and improve the living standard of the population. The Government of Tajikistan uses its own resources and calls for international assistance to develop these projects. Among the international partners, Japan has been invited to contribute to several water projects. Some scholars analyze the Japanese Central Asian policy, including rendering assistance,[1] but they have not paid enough attention to the water and sanitation sectors. Ryota Saito cleared the Japan International Cooperation Agency (JICA)'s activity in the water sector in Uzbekistan,[2] but the Japanese role in water-rich Tajikistan has not been paid enough attention before.

[1] See, for instance: L. Christopher, T. Uyama, T. Hirose, "Japan's Silkroad Diplomacy: Paving the Road Ahead," Central Asia-Caucasus Institute & Silkroad Studies Program, 2008.

[2] See: R. Saito, "Sustainable Water Management in Central Asia and the Role of Foreign Donors: Case Study of 'Water Management Improvement Project'," *Journal of Arid Land Studie*s, Vol. 25, No. 3, 2015, pp. 137-140.

Japan provided Official Development Assistance (ODA) totaling $1.6 billion annually to the international community for developing the water and sanitation sectors from 2010 to 2014. This amount is the first in the world.[3] The amount of financial assistance to the Central Asian water sector is not so great in the total sum of Japan's assistance, but Japan is among leaders, if we compare it with top donor states of the region's water development. In Tajikistan, Japan has been implementing water projects starting from the first days of independence.

This paper examines challenges and an outcome of the water projects supported by Japan, and defines the benefited areas of the projects for Tajikistani society.

Water Resources for Sustainable Development of Tajikistan

Tajikistan's water reserves with 947 rivers and 1,300 lakes and a big proportion of glaciers ensure its hydropower potential estimated at 527 billion kWh per year, which is three times more than the current consumption of the regional states.[4] In addition to the country's hydropower potential, accessibility to the clean fresh drinking water and water supply for irrigation has a great significance.

The Government of Tajikistan proposed that special attention be paid to the water issue and contribution to raising it globally, this leading to the United Nations General Assembly declaring 2005-2015 the International Decade for Action "Water for Life."[5]

This initiative was necessary because of growing world's population that increases water demand. According to the United Nations Department of Economic and Social Affairs (2006), if the international community does not regulate it, then by 2025 two-thirds of the world's population may live under water-stressed conditions. About 1.6 billion people, or almost one-quarter of the world's population, face economic water shortage where countries lack the necessary infrastructure to take water from rivers and aquifers.[6] Water scarcity became a major problem that many societies in this century may face. Currently, more than two billion people suffer from "water stress" around the world. "Ensuring availability and sustainable management of water and sanitation for all" is one of the major targets of the Sustainable Development Goals (SDGs) of the United Nations.

Tajikistan's concern and involvement in the water issue entices global attention, organizing various events to raise world's awareness. In March 2003, the Japanese Government invited President Emomali Rakhmon to share the country's view on water problems and exchange ideas at the Third World's Water Forum in Kyoto, Japan. The wider discussion of the water issue continued during the International Forum on Fresh Water in Dushanbe from 29 August to 1 September, 2003.

During ten years (2005-2015) many conferences and meetings, relating to the water issue, were held worldwide.

In June 2015, Dushanbe hosted the high-level International Conference to evaluate the achievements of the Decade for Action and to begin looking at proposals for moving forward with the De-

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[3] See: M. Usami, "Deepening Water Problem and Japanese Science and Technology Diplomacy: Secure the Sustainable Water Resources and the Possibilities of International Cooperation," in: *Science, Technology and Japanese Foreign Policy*, [ed. by A. Sarkuragawa], Naigaishuppan, Tokyo, 2013, pp. 161-204 (in Japanese); *Water Resources in Japan,* MLIT (Ministry of Land, Infrastructure, Transport and Tourism of Japan), 2016, pp. 118-119 (in Japanese), available at [http://www.mlit.go.jp/tochimizushigen/mizsei/water_resources/contents/responding_to_international.html].

[4] See: "National Review of 'Towards a Green Economy in Tajikistan'," available at [http://fsci.tj/index.php?option=com_content&view=article&id=295%3A--q------q-20&catid=100%3A2013-11-21-10-44-02&Itemid=130&lang=en], 2012.

[5] See: Resolution A/RES/58/217 of December 2003.

[6] See: *Water Scarcity and the MDGs*, UNDESA (United Nations Department of Economic and Social Affairs), 2006.

cade's work. The Declaration of the Conference (2015) acknowledges the importance of water cooperation across sectors and at all levels, including trans-boundary, as one of the conditions to achieve water-related goals, socioeconomic growth, and prosperity and public health. The President of Tajikistan announced a new "International Decade for Action" under the motto "Water for Sustainable Development," as an important tool for promoting the implementation of sustainable development goals relating to the water issue.

Also, the Government of Tajikistan had been initiating several dialogs and meetings with participation of the international and regional experts, indicating its flexibility and cooperativeness with respect to the neighboring states for the benefit and the sake of the region's development.

Activeness in Central Asian Policy

Central Asia does not seem as the priority region for Japanese foreign policy, but Japan has an interest in cooperation with the Central Asian region. In 1997, Hashimoto Administration declared "Eurasian Diplomacy" focusing on Central Asia and Russia, and in 2004 introduced the multilateral program "Central Asia plus Japan" Dialog. The dialog has been designed as "a new framework for cooperation" and aims at "elevating the relations between Japan and Central Asia to a new level."[7] Japan and five Central Asian countries regularly hold the meeting of dialog, and the European Union, South Korea and the United States established the same style multilateral mechanisms in 2007 and after.[8] These follow-up activities by the Western countries ensure the positiveness of Japanese engagement in the region as its cooperation is expanding accordingly.

Why has Japan been involved in Central Asia? There are two reasons why Japan's Central Asian policy aims to strengthen economic links with the energy-rich region—balancing against China and the desire to see more diversity of interest in Central Asia.[9] While understanding very well that importing natural resources from landlocked Central Asia is tough and reasonable, Japan would like to diversify its energy import by considering Central Asians' natural resources. In addition to gas and oil resources, there are other sectors of interest, such as water and its management in the region.

Japanese interest in the water sector has several explanations. First, according to the Ministry of Land, Infrastructure, Transport and Tourism (MLIT), Japanese importing foods consumes tens of billions of cubic meters of water per year. Moreover, as Japan is dependent on import of many goods, including food, increasingly serious water problems in the world are of great concern to Japan.[10]

In December 2006, Japan initiated to declare the year 2008 as the International Year of Sanitation to raise people's awareness of sanitation concerning lavatories and sewage disposal, where sluggish improvement has been pointed out.[11] Experts and officials in Japan have agreed that it is necessary for Japan to pay more attention to and be more active in the global water issue. The Japanese

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[7] MOFA, "Joint Statement 'Central Asia + Japan' Dialog/Foreign Ministers' Meeting—Relations between Japan and Central Asia as They Enter a New Era," Astana, 28 August, 2004, available at [http://www.mofa.go.jp/region/europe/dialogue/joint0408.pdf], 2004.

[8] In 2007, the European Union adopted "The European Union and Central Asia: The New Partnership in Action" strategy, South Korea established the "Republic of Korea-Central Asia" Forum in 2007, and the United States created "C5 plus 1" in 2015.

[9] See: S. Ramani, "Japan's Strategy for Central Asia," *The Diplomat*, 30 July, 2015.

[10] See: "Water Resources in Japan," MLIT, 2015, available at [http://www.mlit.go.jp/tochimizushigen/mizsei/water_resources/contents/responding_to_international.html], 5 March, 2016.

[11] See: Ibidem.

Government provided ODA with as much as $2.1 billion annually for developing the water sector including hydropower, irrigation, flood control and water policy from 2010 to 2014.[12]

As far as Central Asia is concerned, Japan understands the importance of the water problem within this region. Japanese attention to the water crisis in the area has increased because of the shrinking of the Aral Sea, the melting of glaciers and the possibility of water usage of the Sarez Lake in Tajikistan.

The population in Central Asia increased from 20 million in 1956 to 65 million in 2013 that also raised the water demand. If the water problem is not resolved, it may cause a political and social crisis in the region. For the region, the peace, stability, and development completely depend on the availability of water resources and well-established international cooperation.[13]

Japan has the willingness to explore cooperation in such sectors as the stable energy supply by the hydroelectric power and its export, improvement of sanitation by securing safe water, the productivity of agriculture by improving the irrigation system, which relate to the Poverty Reduction Strategy Paper (PRSP) of Tajikistan.[14] In reality, Japan participated in sanitation and irrigation system improvement and supported the rehabilitation of transmission station. The complex situation over the water allocation between Tajikistan and Uzbekistan estranges Japan from participation in the development of the hydropower plants.

Japanese Water Projects in Tajikistan: Not Hydropower but Sanitation

In Tajikistan, about 58.5% of the population has access to the clean water, and more than 30% has the better sanitary condition; in the major cities and towns, 93% of the population has access to the safe drinking water.[15]

During the last five years, the Government of Tajikistan has conducted fifteen strategies and programs and spent about $500 million, in order to improve water access within the country.[16] This strategy significantly improved the water sector, however the water irrigation and supply system in some regions and villages is still in need of reforms.

According to JICA (2012), in the rural areas, the centralized drinking water is available only to 20% of the population and the others fetch water from the various sources (springs, wells with hand pumps, channels, and precipitations) that do not have a sufficient level of hygiene. To improve the access to clean water in vulnerable areas, the related institutions in Tajikistan, with the support of the government and international funding institutions, develop various programs and projects.

For example, the projects in Hamadoni (Phase I &II) and Panj districts of the Khatlon Region aimed to improve a water supply system has benefited the local citizens.

The Khatlon Region and the Badakhshoni Kuhi Autonomous Region, bordering on Afghanistan, are the main targeted areas of Japanese development projects. The purpose of the water projects in rural Tajikistan is to improve clean water access, reduce the risk of any waterborne diseases in the communities, and efficiently execute the groundwater development.

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[12] See: "Heisei 28 Nendoban Nihon no Mizushigen no Genkyo," MLIT, 2016. P. 118—119.

[13] See: S. Rakhimov, "Tajikistan: Turn Water into Cooperation," *The European Times*, 11 February, 2014.

[14] See: K. Takemi, "Statement Presented at the Dushanbe International Fresh Water Forum," Dushanbe, 30 August, 2003.

[15] See: *Inclusive and Dynamic Development*, JICA, 2012. JICA representative office in Tajikistan.

[16] See: Jumhuriyat, 22 August, 2013.

The project activities are to construct boreholes, establish a water supply network system (submersible pump facilities, a high-elevated water tank, a well pump control house, piping and appurtenance facilities, water distribution facilities and etc.), and enhance the capacity of operation and maintenance of water supply facilities. It also aims to train the local engineers, who can continue their specialization by acknowledging the modern techniques.

Obstacles and Realities

There are several challenges of these projects. First of all, their cost: Japanese equipment and technologies usually brought to the projects are expensive. The sufficient part of grant is allocated for the high-cost equipment (from Japan) and experts' salaries, while instead consuming European, Russian, Korean or Iranian made technologies that are comparatively cheaper and widely available in most of the local shops may save some money. In addition, when it comes to expiration dates the parts have to be changed frequently and most of these technologies require Japanese-made parts, which are costly. Local governments cannot afford those parts to be frequently changed, which may cause project facilities to be left unused after several years.

Secondly: the time efficiency. It may need longer time to purchase equipment from Japan than to buy it in the local market. To purchase Japanese machinery, the local shops primarily receive an order from the customers and deliver the machinery within 1-3 months. It means that if a problem occurs in the water system and without immediate reaction (changing parts), it may cause greater damage.

Thirdly: the insufficient training. Not all of these projects have envisaged the long-term staff training. For most of the local engineers, the 1-2 months of training may not be enough, as Japanese technologies rarely had been used during their basic education at the local institutions.

Fourth: lack of managerial training. Most of the managers were educated in the Soviet period. They may dislike learning new technologies and will prefer that a younger generation learn and attend courses. However, when it comes to the decision-making process, the leadership/managers are rarely listening to their younger staff.

Fifth: lack of monitoring. Monitoring is a significant segment of managerial responsibility. Regular monitoring may control the activity and prolong project operation. Not all conducted projects envisage a long-lasting monitoring process carried out by the local and international experts.

Toward the Wider International Cooperation over the Water Resources

Most of the Japanese supported water projects in Tajikistan relate to the internal improvement of the water sector. There are other projects that are in need of bigger investment, which could impact the sustainable development of both Tajikistan and the neighboring states. The projects, such as Rogun and Dashtijun hydropower plants, as well as CASA-1000, are among those projects that could stabilize electricity access in the most of Central Asians states and will be able to export the excess energy to Afghanistan and Pakistan. Kyrgyzstan, Tajikistan and Uzbekistan are facing the shortage of electricity in the winter season, the citizens of the rural areas daily in the autumn-winter seasons have been receiving limited hours of electricity. It also affects hospitals and schools. In

Uzbekistan, blackouts occur for 2-6 hours a day in both small rural settlements and big cities, including the capital city of Tashkent.[17] Uzbekistan is not anymore able to independently provide its population with the uninterrupted and adequate supply of electricity. Therefore, it is obliged to request it from their neighbors.[18] In Tajikistan, the rehabilitation of Nurek Dam and operation of Sangtuda hydropower plants contributed significantly to strengthening the electricity supply. However, seasoning blackouts are still happening in the autumn-winter period, when the country has the lowest level of energy production. The constant power supply is one of the important developmental aspects of Tajikistan's industrial sector, which affects the living standard of the population. The main objectives of the National Development Strategy 2030 are to ensure energy security of the people, enlarge energy potential from 17 to 45 billion kWh per year, and increase export of electricity up to 10 billion kWh.

For Japan, participating in the giant and strategic projects, such as the Rogun Hydropower Plant, the least costly project[19] to produce sufficient electricity in order to solve the electricity problem in the region, could reaffirm its support for green energy policy. As a country suffered from a nuclear power station, such as Fukushima, Japan has been promoting green energy through various projects, such as solar and wind power. Backup of the project, such as Rogun, may strengthen the Japanese role in Central Asia, as well as in South Asia, contributing to the reconstruction of Afghanistan. However, Japan abjures participation in the major water projects, including CASA-1000. The main reason is the dispute over the major water projects among the states of the region. As represented by the "Central Asia plus Japan" dialog, Japanese Central Asian policy aims rather to promote the regional cooperation. On the other hand, by not participating in the pivotal projects, Japan moderates its geopolitical ambition in this region. This also contradicts Japan's early statement that it prefers to see Central Asian economies diversified. For Tajikistan, increasing economic resilience and reducing reliance on the main trade partners—Russia and China depend on the diversification of the economy, primarily in such sectors as the production and export of energy.

The Japanese water projects are certainly necessary to address human security, however, they have less impact on the entire population of the country. Their features are to solve the water issue of the giving districts or villages or to set up the eco-energy of a single hospital or school building, while the projects such as Sangtuda I and II funded by the governments of Russia and Iran have been affecting a wider proportion of population.

Also, Japan's main rival in the region, China, has been extending its influence in Tajikistan. It also invested in the sector of clean energy. A Chinese company completed the construction of the first 100 MW phase of the Dushanbe-II thermal power station.[20] The completion of this project intends to improve electricity supply in Dushanbe. All these examples show that at this stage, only bigger and strategic investments may strengthen the Japanese role in the country.

Tajikistan currently produces 95% of its electricity through hydropower (clean energy). Japan is the main promoter of clean energy, and according to Prime Minister Abe (2015), Japan has the intention to build a high-quality electric power transportation infrastructure in the region.

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[17] See: A. Tchen, "Uzbekistan: The New Face of Energy Poverty in Uzbekistan," *The PULS 1*, 29 September, 2014, available at [http://pulsofcentralasia.org/2014/09/29/uzbekistan-the-new-face-of-energy-poverty-in-uzbekistan-2/].

[18] See: F. Aminjonov, "Vlasti Uzbekistana skoro budut vynuzhdeny peresmotret mnenie o krupnykh GES," available at [http://www.dialog.tj/news/farkhod-aminzhonov-vlasti-uzbekistana-skorom-budut-vynuzhdeny-peresmotret-mnenie-o-krupnykh-ges], 11 May, 2016.

[19] See: "Techno-Economic Assessment Study for Rogun Hydroelectric Construction," The World Bank, 2014. P. 002378 RP 64.

[20] See: U. Usmonzoda, "The Wordfolio," 17 May, 2016, available at [http://www.theworldfolio.com/interviews/usmonali-uzmonzoda-ministry-of-energy-and-water-resources-of-the-republic-of-tajikistan/3327/].

Conclusion

Japan is greatly concerned over the increasingly severe water problems in the world, including the issues of water hygiene. Japan's attention to the water crisis in the Central Asian region has increased because of the disappearance of the Aral Sea, the melting of glaciers and the possibility of water usage of the Sarez Lake. Japan has been participating in the water sector development of Tajikistan. Most of the projects, aimed to develop a domestic water supply system and to improve clean water access, envisage reducing the risk of any waterborne diseases in the communities. On the one hand, not all of these projects are continuously operating after the projects handover. The challenges they face are the high cost of parts, insufficient training and lack of monitoring. There are other strategic projects (Rogun Hydropower Plant and CASA-1000) that the Government of Tajikistan would like Japan to join. These projects promise to significantly improve sustainable development of Tajikistan and stabilize the energy supply in the neighboring states. The implementation of these projects invites major contradictions among the states of the region, which averts Japanese investment. On the other hand, the participation of Japan in strategic projects that could strengthen its role in Tajikistan and the entire region depends on the future development of the relationship between the neighboring states.