

Artículo de investigación

Water Diplomacy in the Aral Sea Basin

Водной Дипломатии в Бассейне Аральского моря

Diplomacia del Agua en la Cuenca del Mar de Aral

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While there is potential for conflict in Central Asia over water resources, due to the lack of full implementation of agreed arrangements, there is still very little chance of armed confrontation between countries in the region. In spite of occasional tensions, countries in the region cooperate with each other through international mediation and resolve their disagreements. However, after two decades of international efforts to revitalize the Aral Sea and implement changes to stabilize the ecological situation in the area, the problems of drying this important sea as a major drainage in the Central Asian region, and it does not seem that a proper and applicable solution in the near future in order to end the crisis. The five Central Asian leaders agree on the close proximity of the Aral Sea's drying due to overuse and water losses that enter the sea through the two main rivers of "Amu Darya" and "Syr Darya". These leaders are also aware of the catastrophic consequences of the living and health conditions of about 40 million inhabitants of the coastal area of the Sea. But the political and personal disputes between these leaders will put an end to these negotiations. Also, given that Iran and Afghanistan are common with Central Asian countries in the Aral Sea basin, these countries are also required to be present in the water talks. In order to reply to the main question of how the level of water diplomacy can be promoted in the Aral basin, the authors believe that "Participation of all stakeholders in water talks", "More active role by international organizations", "Review of inappropriate water plans" and "Use of new water resources" in the Aral Sea basin, can settle

Аннотация

Хотя в Центральной Азии существует вероятность конфликта по поводу водных ресурсов, из-за отсутствия полного осуществления согласованных договоренностей вероятность вооруженной конфронтации между странами региона по-прежнему весьма мала. Несмотря на эпизодическую напряженность, страны региона сотрудничают друг с другом посредством международного посредничества и урегулирования своих разногласий. Однако после двух десятилетий международных усилий по оживлению Аральского моря и осуществлению изменений в целях стабилизации экологической ситуации в этом районе, Проблемы высыхания этого важного моря как крупного дренажа в центральноазиатском регионе, И, как представляется, в ближайшем будущем не будет найдено надлежащего и применимого решения для того, чтобы положить конец кризису. Пять лидеров страны Центральной Азии сходятся во мнении о непосредственной близости высыхания Аральского моря из-за перерасхода и потерь воды, которые попадают в море через две основные реки "Аму-Дарья" и "Сыр-Дарья". Эти лидеры также осознают катастрофические последствия условий жизни и здоровья около 40 миллионов жителей прибрежной зоны Баренцева моря. Но политические и личные споры между этими лидерами полагат конец этим переговорам. Также, учитывая, что Иран и Афганистан являются общими со странами Центральной Азии в бассейне Аральского

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water disputes through dialogue in the framework of water diplomacy.

Key Words: Afghanistan, Aral Sea Basin, Central Asian Countries, Iran, Water Resources; Water Diplomacy.

моря, эти страны также обязаны присутствовать на водных переговорах. Для того чтобы ответить на главный вопрос о том, как можно повысить уровень водной дипломатии в Аральском бассейне, Авторы считают, что "Участие всех заинтересованных сторон в переговорах по водным ресурсам", "Более активная роль международных организаций", "Обзор ненадлежащих водных планов" и "Использование новых водных ресурсов" в бассейне Аральского моря, Может урегулировать водные споры посредством диалога в рамках водной дипломатии.

Ключевые слова: Афганистан, Бассейне Аральского Моря, Страны Центральной Азии, Иран, Водные Ресурсы; Водной Дипломатии.

Resumen

Si bien existe el potencial del conflicto en Asia Central por los recursos hídricos, debido a falta de implementación completa de los acuerdos acordados, todavía hay muy pocas posibilidades de confrontación armada entre los países de esa región. A pesar de las tensiones ocasionales, los países de la región cooperan entre sí a través de la mediación internacional y resuelven sus desacuerdos. Sin embargo, después de dos décadas de esfuerzos internacionales para revitalizar la Mar de Aral e implementar cambios para estabilizar la situación ecológica en el área, los problemas de secar este importante mar como un drenaje importante en la región de Asia Central, no parecen ser un adecuado y solución aplicable en el futuro cercano para poner fin a la crisis. Los cinco líderes de Asia Central coinciden en la proximidad de la desecación del mar de Aral debido al uso excesivo y las pérdidas del agua que ingresaran al mar a través de los dos ríos principales "Amu Darya" y "Syr Darya". Estos líderes también son conscientes de las consecuencias catastróficas de las condiciones de vida y salud de unos 40 millones de habitantes de la zona costera del mar. Pero las disputas políticas y personales entre estos líderes pondrán fin a estas negociaciones. Además, dado que Irán y Afganistán son comunes en la cuenca del mar de Aral con los países de Asia Central, estos países también deben estar presentes en las conversaciones sobre el agua. Para responder a la pregunta principal de cómo se puede promover el nivel de diplomacia del agua en la cuenca del Aral, los autores creen que "Participación de todas las partes interesadas en las conversaciones sobre el agua", "Papel más activo por parte de organizaciones internacionales", "Revisión de inapropiados planes de agua" y "Uso de nuevos recursos hídricos" en la cuenca del mar de Aral pueden resolver las disputas sobre el agua mediante el diálogo en el marco de la diplomacia del agua.

Palabras clave: Afganistán, Cuenca del Mar de Aral, Países de Asia Central, Irán, Recursos Hídricos; Diplomacia del Agua.

Introduction

The Aral Sea basin as a major trans-boundary basin includes parts of 7 Islamic countries in the Asian region including the Islamic Republic of Iran, Afghanistan, Uzbekistan, Kazakhstan, Tajikistan, Kyrgyzstan and Turkmenistan (Table. 1). Common countries in the basin are divided into two groups: the upstream countries include Afghanistan, Tajikistan and Kyrgyzstan, where the main waters of the basin originate from these countries, and the lower countries include Iran, Uzbekistan, Kazakhstan and Turkmenistan, which the common waters of the Aral basin lead to these countries (Figure. 1). In general, the upstream countries of the Aral basin economically are not in a good position, and in contrast, the downstream countries of the basin have better economies than the upstream ones.

Table 1. Common countries in the Aral Sea basin and the area of them that located in the basin (Micklin, 2000: 4).

Row	Country name	Total area of the country (km ²)	Area of the country in the basin (km ²)	Percentage of total area of the country	Percentage of total area of the basin
*	Whole basin	6,299,123	1,765,958	28	100
1	Uzbekistan	447,232	438,287	98	25
2	Turkmenistan	488,680	378,000	77	21
3	Kazakhstan	2,728,185	365,400	13	21
4	Afghanistan	653,004	262,800	40	15
5	Kyrgyzstan	198,737	144,000	72	8
6	Tajikistan	143,271	143,271	100	8
7	Iran	1,640,015	34,200	2	2



Figure 1. Geographic location of the Aral Sea basin (World Lake Database).

The collapse of the Soviet Union in 1991 caused problems in the Aral basin. The hardest problems that the region faced after independence was mainly a tight link between regional water management systems. These links ignored the new political boundaries (Klötzli, 1997).

Today, the Central Asian region faces some environmental problems, the most important of which is the drying crisis of the “Aral Sea”. The former Soviet Union's efforts to increase cotton production in the Central Asian region (mostly in the Aral Sea basin) nowadays have hit the sea (the lowest point of the basin) with a drying crisis (Wegerich, 2003: 252-254) “Fergana valley” as one of the fertile sections of the Aral Basin, affects the economies of the region to its agricultural production (Rashid, 1994: 7). But this valley and the rest of the fertile regions of the region are divided between the republics. For example, in the Soviet period in the Syr Darya basin (including the Fergana valley), there were 6 irrigation zones, some of

which were transboundary: “Upper Naryn”, “Chakir” (Chirchik-Akhangaran-Keles), “Midstream”, “Arys-Turkestan” (Artur) and “Downstream” (Wegerich, Van Rooijen & Soliev, 2015: 4663).

Non-rainfed agriculture accounts for 50 percent of GDP in the Aral Sea basin. The agricultural sector in this region has a major priority in economic development programs and destroys other sectors of the economy (UNEP, 2005: 30). This trend continues even after the independence of the countries of the region; as long as in independent Turkmenistan, the non-rainfed land has increased sharply (Vajpeyi, 2012: 179). In general, after 1991, the area of the non-rainfed lands of Uzbekistan and Kazakhstan gradually dropped, in Tajikistan and Kyrgyzstan and was almost stable and in Turkmenistan has grown (Madramootoo & Dukhovny, 2011: 7).

Improvement in irrigation productivity in the upstream regions of the common countries in the Aral Sea basin does not necessarily increase water flow to the downstream areas, and instead, the stored water is directed in the newly irrigated areas in the same countries (McKinney, 2004: 215). The fear of losing the current status among Central Asian countries is evident, and this has prevented farmers from diversifying their cultivating. This belief is seen among central state authorities, elites and ordinary people, if farmers reduce cotton production, this will cause financial losses and economic systems will be weakened (Peachey, 2004: 9).

Kazakhstan is rich in minerals, and once it has 99 elements of 110 discovered elements in the Periodic Table (Anjaiah, 2016). After the independence of the country in 1991, exports of crude oil, gas, and metallic materials account for a large part of its GDP, and Kazakhstan has withdrawn its dependence on agricultural production and exports (Luong & Weinthal, 2001: 381).

Although Kyrgyzstan is a mountainous country and does not have significant cultivated lands, one third of Kyrgyzstan's GDP is supplied through agriculture, and 40 percent of its labor force is engaged in agriculture (Akramov & Omuraliev, 2009: 1). But due to the inappropriateness of the irrigation and drainage situation, about 1,500 square kilometers of Kyrgyzstan's agricultural land are on the verge of salinity and about 1,400 square kilometers are on the verge of drying (totaling about 2,900 square kilometers) (Orozumbekov et al. 2009: 138). Agricultural production accounts for 52.1 percent, and livestock production accounts for 46.1 percent of gross agricultural production in Kyrgyzstan (Wendelberger & Kodirov, 2012: 9).

“Water resources management” includes various activities including monitoring, modeling, exploration, evaluation, designing criteria and strategies, policy implementation, operations, maintenance, measurement, and supporting activities such as organizational reform (Savenije & Hoekstra, 2009: 2). Gradually, water management was accompanied by security concerns, a phenomenon called “water resources management security” (Phillips, Daoudy & McCaffrey, 2006: 20). The meaning of this naming is that the issue of water is linked to “national security concerns”. There is something as an international security issue that is a much more important topic than other issues and is a top priority as an existential threat (Buzan, Wver & De Wilde, 1998: 24-27).

In general, “water security” is a complete set of conditions, processes and measures to ensure water balance and to ensure that there are no hazards/threats to natural and human communities within all parts of the basin. “Water policy” in the field of water security should provide a system of measures to maintain the balance between the “biosphere”, human interventions and other external factors affecting the water cycle in the basin (Sokolov: 5). Imports of “virtual water” can be ensure water security. When the term virtual water is used, it refers to the quantity of hidden water in the food, even if a large portion of this water is not seen and is virtual. Some researchers have tried to count the amount of water hidden in any food, and this hidden water contains the total amount of water used in the food cycle (UNESCO, 2014: 2).

Due to the constant flow of water from a region or country to an other region or country, and due to the political borders of different countries in the path of a number of these water flows, some disagreements and consequently, negotiations and cooperation on the management of these common resources in the frame of foreign policy the world countries have emerged, that this part of the foreign policy of countries is known as “water diplomacy”. In this paper, we will pay to the background and status of water diplomacy in the Aral Sea basin.

Considering that most researches in this context, just paid to water relations and water diplomacy between the Central Asian countries, this research is an innovation by account the whole of the common countries in the Aral basin and adding the water relations of Afghanistan and Iran in the basin.

Methodology

The study area is the Aral Sea basin, which is common between 7 countries: Uzbekistan, Turkmenistan, Kazakhstan, Afghanistan, Kyrgyzstan, Tajikistan and Iran.

Data for total area of each common countries in the Aral Sea basin and area of them located in the basin by these parts percentages were obtained from the book: "Managing water in Central Asia".

Information on institutions established in the field of water diplomacy in the Aral Sea basin has been extracted from various sources, including the official websites of these institutions.

The history of water diplomacy in the Aral Sea basin from the collapse of the Soviet Union in 1991 to 2008 has been largely extracted from the book: "Aral Sea Encyclopedia"; although other sources have been used to some extent. But for water diplomacy events in the basin after the date of publishing the book in 2008, other sources have been used.

Facts and findings

In the Central Asian region, the disproportionate distribution of water due to the allocation of more water to the republics defined in the Soviet period as agricultural purpose, the co-existence of some water resources in very fertile boundary regions such as Fergana valley, the lack of proper management of water resources in the Soviet period, and failure of international law on the optimal allocation of water resources, the growing population of the region and the development of agriculture in the region republics for self-sufficiency in food production are among the problems that put water security at serious risk.

The flow of water in the Aral Sea basin, which affects the downstream countries (Iran, Uzbekistan, Kazakhstan and Turkmenistan) to the upstream countries (Afghanistan, Tajikistan and Kyrgyzstan) in terms of security of water, and any changes in this flow in the upper parts, threatens the life of the parts or whole of the lower lands; the two countries of Uzbekistan and Turkmenistan, while are in downstream and dependent on the water resources of the upstream countries, use most of the Aral basin waters (mostly agricultural), and as a result, the economy of these countries is also deeply dependent on the upstream countries entrance water.

Since 1991, the upstream countries of the Aral basin have begun to exploit and control most of the common water resources originating from these countries, and they are faced with the negative reaction of the downstream countries that are heavily dependent on these waters. In the Aral Sea basin, Uzbekistan, Kazakhstan, and Turkmenistan, which supplied in the Soviet period, oil and gas for the two upstream countries of Tajikistan and Kyrgyzstan at very low cost, in response to the construction of large dams in the upstream, increased their export energy costs to the upstream countries and sometimes stopped their exports.

Institutions established in the field of water diplomacy in the Aral basin

After the collapse of the Soviet Union, institutions were set up to change the irrigation system and water resources management in the Central Asian region to find a solution to solve the water crisis in this region. "Interstate Council for the problems of the Aral Sea Basin" (ICAB), "Interstate Commission for Water Coordination" (ICWC), "Interstate Commission on Sustainable Development" (ICSD), "International Fund to Save the Aral Sea" (IFAS) and "Central Asia Water Sector Coordination Initiative" (CAWSCI), are among these institutions.

A. ICAB

The "Interstate Council for the problems of the Aral Sea Basin" (ICAB) was established in 1993 along with its affiliated "Executive Committee", and the "Interstate Commission for Water Coordination" (ICWC) was integrated into the council's structure.

The members of the Aral council, from all five Central Asian republics, met every six months and decided on the development plans provided by the executive committee of the council.

In 1994, the “Interstate Commission on Social and Economic Development, Scientific, Technical, and Ecological Cooperation” (ICSDSTEC), later renamed the “Interstate Commission for Sustainable Development” (ICSD), as an affiliated institution of the ICAB, it was formed.

Finally, the ICAB, together with its two subsidiary bodies, ICWC and ICSD, was merged into the IFAS in 1997.

B. IFAS

The “International Fund to Save the Aral Sea” (IFAS) was established in 1993. The goal of this international body is to address the problems of the Aral Sea and provide social, economic and other services to the people living in the region (Mosello, 2008: 161).

At the time of the formation of the Aral fund, all Central Asian countries pledged to contribute a percentage of their government's annual revenues to the fund each year, and the revenues of the institution are now through contributions from member states and donations. Of course, later, as it turned out, none of the member states paid their full financial obligations, this percentage was down 0.3 percent of the government's revenues for the richer downstream countries, and 0.1 of the government's revenues for the poorer upstream countries.

The head of IFAS is in circulation among the five member states. Therefore, the fund's “executive committee” has been deployed in different capitals of the region since the first year of its foundation: Almaty, Kazakhstan (1997-1993), Tashkent, Uzbekistan (1997-1999), Ashgabat, Turkmenistan (1999-2002), Dushanbe, Tajikistan (2003-2009) and again Almaty (after 2009) were the places where the Aral fund executive committee was there. Of course, the deployment site of the committee was supposed to be transferred to Bishkek, Kyrgyzstan from 2005, which did not happen due to Kyrgyzstan's inflammation in that year, and the executive committee still remained in place in Dushanbe until 2009 (Water Unite, 2015). Strategy and operational program of the IFAS (Ibatullin, 2010: 6):

1. Continue cooperation with the aim of improving ecological and socioeconomic status in the Aral Sea basin.
2. Develop mutually acceptable mechanisms for the integrated water resources management and environmental protection in Central Asia, taking into account the interests of all countries in the region.

As previously mentioned, ICWC and ICSD were merged into the new structure of the IFAS in 1997 (Figure. 2).

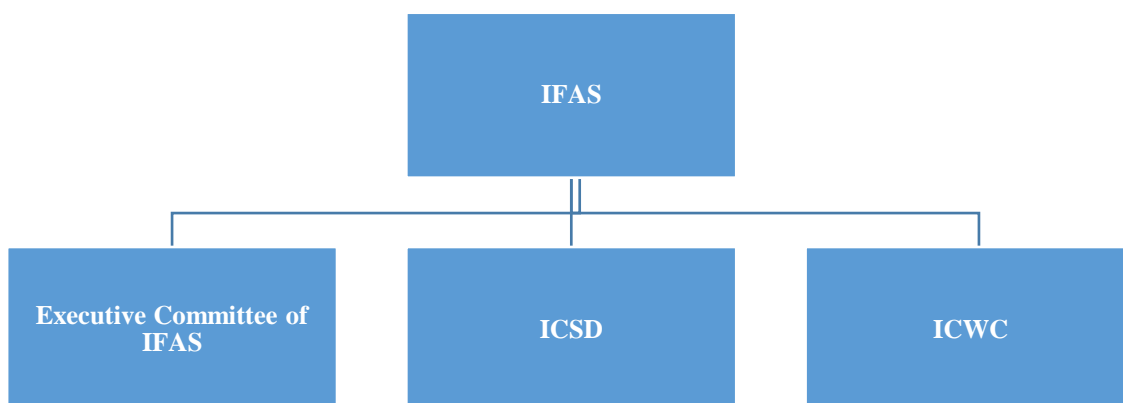


Figure. 2. Overall structure of the IFAS.

B1. ICWC

The “Interstate Commission for Water Coordination” (ICWC) was the first institution created after the collapse of the Soviet Union on Central Asian waters. The commission was established in 1992 to operate the agreement signed between the countries of the Central Asian region on water resources in that year.

The ICWC, a joint committee of water ministers from five Central Asian countries, has been established to facilitate the implementation of quotas and to control the economic organization in the Amu Darya and Syr Darya basins.

The members of the ICWC, the “Basin Water Associations” (BWA) (the Syr Darya association center in Tashkent and the Amu Darya association center in Urgench, Uzbekistan), monitor the implementation of quotas, and can increase or decrease these quotas by up to 15 percent. In fact, the commission is merely capable of dividing the water quota of the countries of the region and can not manage the agricultural and energy sectors that make up most of the water in the basin. The ICWC also manages a “Scientific Information Centre”, trains water authorities, and manages a comprehensive database that can be assessed by member states. (UNECE, 2009: 47).

The main issues addressed at the ICWC are: (ICWC, 2004):

1. To determine the economic unit of the water economy and to establish its main axes based on the interests of the people and different parts of the country,
2. Logical use of water resources and their protection,
3. Plans to increase water supply for rivers and related measures,
4. Determine the limitation of annual water consumption from its main resources for each country and mode of exploitation of large reservoirs,
5. Management and adjustment of water allocation in real conditions of access to water and in terms of saving.

The main tasks and functions of the ICWC and its implementing structures include the following (ICWC, 2004):

1. River basin management,
2. Non-conflict allocation of water,
3. Organize negotiations on trans-boundary water flows,
4. Interaction with hydro-meteorological services to predict water flows and calculations in this context,
5. Introducing automation to supreme structures,
6. Regular work on the progress of the ICWC and its structures,
7. Preparation of interstate agreements,
8. Scientific
9. Research, Training.

B2. ICSD

The “Interstate Commission on Social and Economic Development, Scientific, Technical, and Ecological Cooperation” (ICSDSTEC), later renamed the “Interstate Commission for Sustainable Development” (ICSD), it was formed in 1994 as one of the ICAB affiliated institutions.

The commission's main objective is to coordinate and oversee cooperation on environmental protection and sustainable development in Central Asia. Members of the ICSD meet twice a year, and the commission's head is circulating among member states. Also affiliated “Scientific Information Center” is also located in Ashgabat.

C. CAWSCI

The “Central Asia Water Sector Coordination Initiative” (CAWSCI) intends to attract support from global water organizations to the region and the water crisis. The initiative was supposed to act as an online database of all water projects in the Central Asian region. However, it did not succeed in attracting other agencies to share information and gradually decreased its budget (Lipiäinen & Smith, 2013: 11).

The purpose of the CAWSCI is to chart the activities of various international and regional actors in the Central Asian waters and to support the exchange of information, thus facilitating coordination between partners, plans and processes by identifying and continuously describing trends, initiatives, plans, and the rest (WaterWiki.net, 2010).

Water diplomacy of Iran in the Aral basin

The Islamic Republic of Iran because of very small part of its territory is located in Aral Sea basin (only the Karakum basin in the northeast of the country as the sub-basin of the Hari basin), and that this small part is considered downstream of the basin, and the input and output of water to this compared to the entire basin, can be ignored, so it has not participated in regional initiatives for water diplomacy in the Aral basin organized by post-Soviet countries. The “Hari River” (Tejen) is the main Iranian common river in the Aral basin, and the country on this river is common with Afghanistan and Turkmenistan (formerly: the Soviet Union). Iran has agreed with the Soviet Union and later Turkmenistan on Hari river, but the river is still the main source of water disputes with Afghanistan.

The most important event in the context of water diplomacy between Iran and the Soviet Union was the friendship treaty between the two countries, which was signed on February 26, 1921. The treaty for the first time was to determine the fair value of the two countries water from Hari, and 30 percent of the total water to Iran and 70 percent to the Soviet Union. After the collapse of the Soviet Union and the independence of Turkmenistan, Turkmen former president “Saparmurat Niyazov” traveled to Tehran on October 16, 1991, signing a memorandum of cooperation with Iran on the construction of a dam on Tejen. Friendship dam caused half of Tejen's water to enter Iran, while a large part of the river's water entered Turkmenistan before the dam was constructed, and the share of the Soviet side was 70 percent according to the Iran-Soviet friendship treaty.

The transfer of water from the Amu Darya and Tajikistan to Iran is one of the plans put forward by some experts to save the northeastern and eastern parts of Iran from the depression crisis. This plan will only be possible if it does not reduce the current volume of Amu Darya's water; that is, it should either use Turkmenistan's 22 billion cubic meters of Amu Darya (because a large amount of that surplus), or that it should be implemented after water transfers between basins like the transfer of water from the Siberian rivers to Central Asia, which was raised during the Soviet period, after the increase in the current volume of Amu Darya's water, can negotiate about transfer part of its water to Iran. In this case, Iran in addition to the countries of the Central Asian region, must negotiate with Russia on water diplomacy. Because Tajikistan is dissatisfied with the flow of its waters to downstream countries, this low-income country will definitely support water exports to Iran. But this will be countered by the negative reaction of other countries in the region.

Water diplomacy of Afghanistan in the Aral basin

Due to the devastating civil wars in recent decades, Afghanistan has failed to take steps to address issues such as environmental protection and water resource management, and to engage constructively with neighboring countries. Afghanistan's neighbors, also due to the fact that the Kabul-based government does not dominate all areas of the country, has invited less than Afghanistan as a regional actor in its meetings, which has sometimes resulted in signing agreements, due to ongoing civil wars, and regional talks are more about Afghanistan than with the country. In the context of water diplomacy, there are conflicts between Afghanistan and its neighbors on water issues, due to the absence of Afghanistan in these talks and the failure to reach an agreement that is acceptable to the country.

Under the agreement signed between Afghanistan and the Soviet Union in 1949, the Afghan side was allowed to consume 9 billion cubic meters of water annually from the Amu Darya (Mosello, 2008: 157). But in 1985, it consumed only 1.5 billion cubic meters of Amu Darya water per year, and is now likely to seek to use more than just its own. With the construction of the "Iran-Turkmenistan Friendship Dam", one of its goals being to provide drinking water to the city of Mashhad as the second largest city in Iran, this region of Iran was somehow influenced by Kabul's policies and decisions. The plans that Afghanistan makes after the establishment of relative political stability to exploit Hari river, such as the construction of the "Afghan-India Friendship Dam" (Salma), confirms this.

Water diplomacy between post-Soviet countries in the Aral basin

Some of the measures that have been taken between 1991 and 2018 to resolve disputes in the Aral Sea basin between post-Soviet countries of Central Asia in the framework of water talks and water diplomacy (Zonn et al. 2009: 269, 271-278 and 281):

1. In 1991, the protocol on the preparation of an intergovernmental agreement on Aral Issues was signed at the first meeting of the leaders of the "Commonwealth of Independent States" (CIS) in Minsk, the capital of Belarus.
2. On October 12, 1991, at the meeting of the ministers of "Land Improvement and Water Management" of the Central Asian republics in Tashkent, "Application on Sharing Water Resources of the Aral Sea basin" was accepted. The application emphasized the commitment to water quotas in the Soviet era. The 1991 Declaration, though not signed by the ministers and not the presidents. But was a prerequisite for the signing of the "Almaty Agreement" in 1992 by the high ranking officials of the region.
3. On February 18, 1992, the Central Asian republics "Water-Economic Organizations" was held in Almaty, during which an agreement was signed between the five republics of the region "In the Sphere of Joint Management of Use and Protection of Water resources of Interstate Sources", which became known as the Almaty Agreement. According to the agreement, each of the Central Asian countries was required to prevent any action in their homeland that would disregard or endanger the interests of other countries.

Following the Almaty Agreement, in Tashkent, the leaders of the water-economic organizations of the Central Asian republics signed the "Interstate Commission for Water Coordination" and approved the Almaty Agreement.

The Almaty Agreement, signed in the first year after the collapse between the region countries, further emphasizes the preservation of water resources management way in the Soviet era. Given the definition of agricultural performance for the downstream countries of the Aral basin in the Soviet era, the agreement also emphasizes the allocation of much more water to downstream countries than the upstream countries (as the source of these resources). But this this issue gradual and by evident its results, were challenged by the upstream countries.

4. On March 26, 1993, in Kyzylorda, Kazakhstan, the presidents of all the countries of the Central Asian region signed "Agreement on Joint Actions under the Decision of the Problem of the Aral Sea and Priaral'e for Ecological Improvement and Maintenance of Social and Economic Development of the Aral Region". They made this agreement for sanitation of sewage and

development of the region, and included general measures such as “rational use of limited water resources to ensure socio-economic development in the Aral region”, “the revitalization of the complex ecosystem of the Amu Darya and Syr Darya delta” and “the development of water quality and health status of residents of the region”.

5. In 1993, the state heads of Central Asia provided the initiative to create IFAS in Almaty. Kazakhstan's former president “Nursultan Nazarbayev” was elected as chairman of the fund.
6. In 1993, the then Uzbekistan's former president “Islam Karimov” welcomed the creation of a special commission by the United Nations and with agreement by the countries of the region on the issue of Aral Sea at the United Nations General Assembly in New York, United States.
7. In 1993, with the decision of the ICWC, the "Scientific Information Center" attached to the ICWC was created in Tashkent, and the permanent secretariat of the commission was set up in Khujand, Tajikistan. Between 1996 and 1997, the “Main Provisions of the Regional Water Strategy of the Aral Sea Basin” were developed by the center and presented to the World Bank.
8. In 1993, the ICAB, together with its executive committee, was formed, and the ICWC was integrated into the structure of this council.
9. In 1994, in Nukus, Uzbekistan, the leaders of the five Central Asian countries, with the participation of the Russian Federation, signed “The Program of Concrete Actions in the Aral Sea Basin” composed of eight main axes.
10. In 1994, the ICSDSTEC, later renamed the ICSD, as one of the affiliated organs to the ICAB was formed.
11. In 1994, the resolution of the leaders of the Central Asian republics entitled “Concept on Improvement of Socioeconomic and Environmental Conditions in the Circum-Aral Area” was approved.
12. On September 20, 1995, in Nukus, Uzbekistan, the Central Asian presidents signed the “Nukus Declaration” and expressed their willingness to trust and grant any assistance to the IFAS and its affiliated organizations.
13. In 1996, in Bishkek, the presidents of Kazakhstan, Kyrgyzstan and Uzbekistan negotiated about the issues of the use of hydro-electric resources.
14. In 1997, the “Almaty Declaration” was signed at the meeting of state heads of Central Asia on issues in the Aral Sea basin.
15. On February 28, 1997, in Almaty, at the same time as the signing of an agreement between the presidents of Central Asian countries on the rebuilding of existing interstate organizations, the IFAS was transformed and Uzbekistan's former president Islam Karimov, selected as the new head of the fund.

The permanent executive board and management structure of the executive committee of IFAS was established in Tashkent, and its branches were established in all Central Asian countries.

At the same time, the ICAB and its functions merged at the IFAS.

16. On March 17, 1998, between the four common republics in the Syr Darya basin (Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan), an agreement was reached on the use of water and energy resources in the basin of the river as the Aral Sea sub basin in the form of “previously established institutions” signed (UNECE, 2009: 5). This agreement was reached on how to operate the Kyrgyz “Toktogul” hydroelectric dam and power plant, so that Kyrgyzstan's surplus water flow is distributed equitably between Kazakhstan and Uzbekistan and in return, energy, other services or money will be delivered to Kyrgyzstan.

Of course, Bishkek, after signing the 1998 agreement, declared it considered water as a commercial commodity, and if Uzbekistan does not pay for it, it will sell its water to Beijing.

17. On April 9, 1999, a summit of Central Asian countries was convened in Ashgabat, during which Turkmenistan's former president Saparmurat Niyazov elected as the head of IFAS. During this meeting, the "Declaration on the issues of the Aral Sea Basin" was approved by the heads of Central Asian countries.
18. In 2000, Turkmenistan began building a "Golden Age Lake" in the "Karakum Desert" to collect wastewater from parts of Turkmenistan and the "Khwarazm Region" of Uzbekistan.
19. On July 21, 2001, officials from all countries of the Central Asian region (except Turkmenistan) and Russia in "Cholpon Ata", Kyrgyzstan, negotiated the distribution of water and electricity from common water resources, and agreed on this.

From the results of the Cholpon Ata Meeting, exploitation of the Tajik "Karakum Dam" is used to irrigate Uzbek and Kazakh agricultural lands (about 80 percent of the Tajik dam from the Soviet period falls to the two downstream countries), and in return, the reopening of the flow of water from Uzbekistan's "Fergana Canal" to the Tajikistan side.

Kyrgyzstan, which hosted the Cholpon Ata Meeting, subordinated release water from the Toktogul Dam from its territory, which is needed by the agricultural sector of the downstream countries, and in particular Kazakhstan, to Settlement Kazakhstan's 20 million dollar debt (related to the export of Kyrgyzstan to Kazakhstan).

20. Tajik president "Emomali Rahmon" was elected in February 2002 with the decision of the states of the Central Asian region to head of the IFAS.
21. On 6 October 2002, the Central Asian summit was held in Dushanbe on Aral Sea basin Issues. The "Dushanbe Declaration" was signed during the meeting and its 14 main pillars were approved: "Programs of Concrete Actions on the Problems of the Aral Sea basin for 2003–2010".

At a Dushanbe Meeting, all leaders of the Central Asian region (except Turkmenistan) agreed to form a "Water and Energy Consortium" to facilitate the transport of natural resources in the region.

22. In 2006, the presidents of Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan met in Nursultan (Astana), the capital of Kazakhstan, within the framework of the "Central Asian Cooperation", to discuss the issue of the revival of the Aral Sea. The participants agreed that the restoration of the dried sea is not a regional problem and will involve Europe and many other countries.
23. In 2007, an agreement between Turkmenistan and the Islamic Republic of Iran on common exploitation of Iran–Turkmenistan Friendship Dam water was signed in the form of the "Joint Commission on Cooperation" (UNECE, 2009: 6).
24. In October 2008, an agreement was reached between Kazakhstan, Tajikistan and Kyrgyzstan on the reciprocal supply of water and energy, which was later abandoned by pulling out Uzbekistan.
25. Russia's former president "Dmitry Medvedev" in January 2009, in Tashkent, strongly supported the position of Uzbek Authorities in the water issue of the Aral basin, which has caused severe discontent with Tajik Authorities. But one month later (February 2009), and along with the visit of Kyrgyz's former president "Kurmanbek Bakiev" to Moscow, the Russian side announced the award of 3.1 billion euros for the construction of the "Kambarata Hydroelectric Plant" in Kyrgyzstan (ESISC, 2009: 4-5).

Dual play of Russian authorities in support of Uzbekistan's position and at the same time, the financing of the Kambarata water project of Kyrgyzstan and the proposal to mobilize Tajikistan's "Rogun" water project, may create ambiguity over Moscow's real target; however, the interview of the Russia's foreign minister "Sergei Lavrov" in a trip to Turkmenistan could answer these ambiguities: "Success in achieving beneficial compromise is necessary for all parties, and in the specific context of water resources, Central Asian states

can count on Russia's sustained support". The Russian authorities do not want to ignore any opportunity to help play a key role and lead them in the Central Asian region, and so they are taking part in water discussions in the region (ESISIC, 2009: 4-5).

26. The Almaty Seminar on April 20, 2009, in collaboration with the "United Nations Regional Centre for Preventive Diplomacy for Central Asia" (UNRCCA) and the "Economic Commission for Europe" (UNECE), aiming at developing methods and tools for coordinated management of water in region and sustainable agreements, that be beneficial for all the countries of the region in the field of water and energy. Of course, the results of the seminar were not at the level that was announced.

The IFAS meeting, which was concluded on April 28, 2009 in Almaty, also had the same conditions and ended without significant progress (ESISIC, 2009: 1 and 3).

The efforts of Kazakh's former president Nursultan Nazarbayev as the host of the meeting to calm down the discussions and the appeasement of Turkmen president "Gurbanguly Berdimuhamedow" did not stop the accusation of Kyrgyzstan and Tajikistan from Uzbek's former president Islam Karimov side. He alone criticized the plans of the two upstream countries and policies of water management limitation by these countries. Finally, Karimov's counterparts from Kazakhstan and Turkmenistan joined him. Islam Karimov was in the same position that caused more than ever, he identified himself as a regional leader opposing the Kyrgyzstan and Tajikistan's hydroelectric plans (ESISIC, 2009: 3-4).

27. In 2017, progress was made in the region on water diplomacy, when Uzbekistan and Kyrgyzstan agreed to develop hydroelectric power plants on the "Naryn River" (a river that passing through Uzbekistan and Kyrgyzstan to Syr Darya).

Shavkat Mirziyoyev, the new Uzbek president in his statement on March 9, 2018 in Dushanbe, announced his support for the construction of the Rogun hydroelectric dam and power plant in Tajikistan. This position was contrary to the position of the previous president, Islam Karimov, and is another positive sign on water diplomacy in the Aral Sea basin (Dalbaeva, 2018).

Proposed solutions for promoting the level of water diplomacy in the Aral basin

"Participation of all stakeholders in water talks", "More active role by international organizations", "Review of inappropriate water plans" and "Use of new water resources" in the Aral Sea basin, are among suggested solutions to promote water diplomacy in the basin, and turning water disputes into water cooperation through dialogue and negotiation.

A. Participation of all stakeholders in Aral basin water talks

The presence of Afghanistan in the meetings and talks on Amu Darya and Aral Sea is indispensable. The country will definitely use more and more organized water than Amu Darya water and its diversion for agricultural development. As a result, the countries of the Central Asian region will have to negotiate with Afghanistan on how to exploit common waters to prevent the deterioration of the Aral basin's water status. Some of the countries of the Central Asian region, especially Uzbekistan, because of their controversial and secessionist policies (to the extent that Islam Karimov once said that the country has solved its water problems for more than a thousand years on its own) and Turkmenistan, because of its insistence on its impartiality in international relations, are not eager to attend regional meetings. Of course, the political situation in Uzbekistan after the death of Islam Karimov and the coming of the new president, Shavkat Mirziyoyev has changed a lot.

As all Central Asian countries are common in the Aral Sea basin, as a result, the actions of each regional actor in the exploitation of water resources in the basin can affect the entire basin area and other national interests. As a result, all common countries in the Aral basin should distinguish between water talks and water diplomacy by negotiating about military security and military alliances, and refraining from isolationist approaches.

B. More active role of international organizations in the Aral basin

Some of the common countries in the Aral Sea basin do not good look at the performance of international organizations and institutions; for example, the two countries of Uzbekistan and Turkmenistan refused to attend in an international conference on the dangers of climate change and its impact on the water resources of the region, which was held in 2008 in Tajikistan with the participation of the “United Nations” (UN) and “Organization for Security and Cooperation in Europe” (OSCE).

Although some of the Central Asian leaders are sometimes make wrong decisions with false pessimists towards their neighbors or with the goal of maximizing their national interests, regardless of the state of the whole basin, and especially the severe conditions of the Aral Sea. But with the fact that the environmental impacts of the crisis, the drying of the Aral Sea, in addition to the surrounding areas of the sea and the Central Asian region, can also be extended to other areas (such as salt storms that can be spread hundreds of kilometers), it is the task of international institutions that given the transnational and even transregional nature of the Aral crisis, play their intrinsic duty and contribute to reducing the crisis.

International organizations can technically and economically equip Aral basin Countries. International financial institutions such as the “International Monetary Fund” (IMF) can provide part of the cost of dealing with the Aral crisis by providing regional donations to the poorest countries of Tajikistan and Kyrgyzstan, in particular. At the same time, international organizations active in the field of agriculture and environment such as the “Food and Agriculture Organization” (FAO) can also be technically and scientifically involved in solving the Aral Crisis, and programs for water resources managing, modernizing agriculture and irrigation, and protecting the environment at the basin level.

C. Review of inappropriate water plans for the Aral basin

After 1991 and the independence of the Central Asian republics, most of these republics have put forward ambitious plans for water and electricity regardless of the conditions of the neighboring countries and the whole of the Aral Sea basin. One of the main goals of these projects is the development of agriculture and self-sufficiency in agricultural and food products as one of the basic needs of citizens, and as a result, reducing food dependency on other countries (including neighboring countries), as well as providing electricity through hydroelectric power plants and even exports of surplus energy are generated and monetized in this way.

Among these projects are the plans of the Golden Age Lake of Turkmenistan, Rogun Dam of Tajikistan, Kambarata Dam of Kyrgyzstan, and Salma Dam of Afghanistan. Almost all of these new water projects that some of them have recently been exploited, have been challenged by neighboring countries that fearing the negative impacts of these projects on the environment and the country's water security.

In this context, it is worthwhile for the countries of the region to understand the conditions of their neighboring countries and the environment of the region to revise their ambitious water plans. These include reducing the volume of dams in the study and construction (such as the Kambarata Dam of Kyrgyzstan and “Kabagan” and “Pashdan” dams in Afghanistan), or even stopping some projects (such as Turkmenistan's Golden Age Lake). All of these actions will be possible through active water diplomacy between neighboring countries.

D. Use of new water resources in the Aral basin

Due to the shortage of available water resources in the Aral Sea basin, finding new water resources outside the basin and transferring water from these offshore resources to the basin can be another solution to the water crisis and water disagreements in the Aral basin. In this regard, during the Soviet period, the project for the re-routing and transfer of water from some rivers in the Siberian region, such as the rivers "Ob" and "Irtys" was presented to the Aral basin. Of course, these plans were aimed at developing agriculture in the region, which later stopped because of high costs. But in the current situation, it would be possible to dispense with the relatively high cost of such plans, so that the transfer of water to the Aral basin, water security and environment of the region would no longer be compromised.

In the context of transferring water between the basins in Asia, there are large plans for the return of waters entering the northern seas to the central Asian regions that need these waters. Of course, the transition

between the basins of the North and Central Asia during the Soviet period, while also preventing droughts in Central Asia, could have complications; the decrease in the degree of cold and Arctic ice melting due to the decrease in the flow of freshwater into the seas North could be the most important transfer complication between water basins. As a result, the priority is to adapt the basin with the water resources in the basin itself and should not create new water needs beyond the capacity of water resources of the basins, such as agricultural development, following the transfer of water between the basins with purely economic objectives.

But in conditions such as the current environmental conditions in the Aral basin, and because of the region's exposure to the Aral Sea drainage problem and saline storms, it can be transposed between the basins for the sole purpose of environmental (and not economic) purposes. Gave to transfer water from Siberia to the Aral Sea basin, it is necessary for all common countries in the basin to collaborate to pursue water diplomacy with the Russian Federation. In this regard, some Central Asian countries with isolated attitudes can join some of the Eurasian treaties and alliances, such as the "Eurasian Economic Union" (EAEU) and the "Collective Security Treaty Organization" (CSTO), and close proximity to Russia, without paying any economic rewards, the transfer of water from Siberia will save the Aral basin from acute environmental crises.

Results and discussion

According to the results of the researches, in the first half of the 21st century, the water problem is considered to be more important than the problem of food and energy, and most of the planet's population is facing a catastrophic situation in terms of water security during the same period. To cope with this problem can be saving water consumption, especially in agricultural and industrial sectors, reducing drainage to freshwater sources that destroys these resources, turning salty seawater and ocean water into freshwater and controlling surface water put it on the agenda.

Of course, due to the fact that some of the major rivers in the world are trans-boundary and have crossed the political boundaries, the countries can not resolve issues related to the water crisis individually, in this context, there is a need for bilateral, multilateral and international cooperation. The issue of water can turn the current situation, which is the source of conflict, into a source of cooperation and friendship between neighboring countries, and it is possible that the security of the water of all countries that are common in a water basin supplied, and that all parties reach to their rights.

In the field of water diplomacy in the Aral Sea basin, after the collapse of the Soviet Union, various regional institutions were established in the Central Asian region, the most important of which is the "International Fund to Save the Aral Sea". The fund, which is an international body, has set itself the goal of addressing the problems of the Aral Sea, as well as providing services and assistance to the inhabitants of the sea's basin area. The Aral fund also mentions cooperation among member states to improve the environment and regional economy and to develop mechanisms for integrated resources management in Central Asia as part of its operational strategies and programs.

In resolving water disputes in the Aral basin through water diplomacy, Uzbekistan and Kazakhstan as two richer countries, it is desirable to provide Kyrgyzstan and Tajikistan as the two poorer countries ahead for their hydroelectric capacity development. Similarly, all four countries must agree to specify the times when the waters are stored and released. Of course, it's hard to achieve such an agreement.

Conclusion

the "Economic Cooperation Organization" (ECO) can constitute one of the most important regional organizations that would facilitate water diplomacy between the countries of the region, and not just between post-Soviet countries in the Central Asian region, in the context of water disputes settlement in the Aral Sea basin, in the framework of common and comprehensive regional security system.

Consideration

All of the article content has been achieved as a result of independent research accomplished by independent authors mainly grounded over scientific position. In consequence, the results do not reflect any formal position of common countries in the Aral Sea basin.

References

- Akramov, Kamiljon T. & Nurbek Omuraliev (2009). Institutional Change, Rural Services, and Agricultural Performance in Kyrgyzstan. International Food Policy Research Institute (IFPRI). Retrieved from: <https://pdfs.semanticscholar.org/fca2/05a1a253b7a373e16b1d56c5375bca972abf.pdf>
- Anjaiah, Veeramalla (2016). Dynamic Kazakhstan Turns 25, Aims For Greater Goals – OpEd. Eurasia Review. Retrieved from: <http://www.eurasiareview.com/18122016-dynamic-kazakhstan-turns-25-aims-for-greater-goals-oped/>
- Buzan, Barry, Ole Wver & Jaap De Wilde (1998). Security: A New Framework for Analysis. Boulder: Lynne Rienner.
- Dalbaeva, Alina (2018). End the Weaponisation of Water in Central Asia. International Crisis Group. Retrieved from: <https://www.crisisgroup.org/europe-central-asia/central-asia/kazakhstan/end-weaponisation-water-central-asia>
- United Nations Economic Commission for Europe (UNECE) (2009). Capacity for Water Cooperation in Eastern Europe, Caucasus and Central Asia. Retrieved from: <https://www.unece.org/fileadmin/DAM/env/water/documents/CWC%20publication%20joint%20bodies.pdf>
- European Strategic Intelligence and Security Center (ESISC) (2009). Central Asia the Battle over Water. Retrieved from: <http://www.esisc.org/upload/publications/analyses/central-asia-the-battle-over-water/11.%20CENTRAL%20ASIA,%20THE%20BATTLE%20OVER%20WATER.pdf>
- Ibatullin, Saghit (2010). International Fund for Saving the Aral Sea (IFAS). UNECE. Retrieved from: http://www.unece.org/fileadmin/DAM/env/cep/ExtBureau16-17Mar2010/IFAS_EC_ppp_e.pdf
- Interstate Commission for Water Coordination of Central Asia (ICWC) (2004). Activity. Retrieved from: <http://www.icwc-aral.uz/activity.htm>
- Klötzli, Stefan (1997). The Water and Soil Crisis in Central Asia: A Source for Future Conflicts?. Environment and Conflict Project (ENCOP). Occasional Paper 11. Zurich/Bern: ETH Zurich and Swiss Peace Foundation.
- Lipiäinen, Tatjana & Jeremy Smith (2013). International Coordination of Water Sector Initiatives in Central Asia. EUCAM. Retrieved from: <https://www.files.ethz.ch/isn/174740/International%20Coordination%20of%20Water%20Sector%20Initiatives%20in%20Central%20Asia.pdf>
- Luong, Pauline Jones & Erika Weinthal (2001). Prelude to the Resource Curse: Explaining Oil and Gas Development Strategies in the Soviet Successor States and Beyond. Comparative Political Studies, Volume (34), 367-399.
- Madramootoo, Chandra & Victor Dukhovny (2011). Water and Food Security in Central Asia. NATO Science for Peace and Security Series C: Environmental Security.
- McKinney, Daene C. (2004). Cooperative Management of Transboundary Water resources in Central Asia. In *The Tracks of Tamerlane: Central Asia's Path into the 21st Century*. Dan Burghart and Theresa Sabonis-Helf (Ed.). Washington DC: National Defense University Press.
- Mosello, Beatrice (2008). Water in Central Asia: A Prospect of Conflict or Cooperation?. *Journal of Public and International Affairs*, Volume (19), 151-174. Retrieved from: <https://jpia.princeton.edu/sites/jpia/files/2008-9.pdf>
- Orozumbekov, Almazbek, Turatbek Musuraliev, Biimirza Toktoraliev, Askat Kysanov, Bakytbek Shamshiev & Ormon Sultangaziev (2009). Forest Rehabilitation in Kyrgyzstan, IUFRO World Series, Volume (20), 131-182. Retrieved from: https://www.iufro.org/download/file/7407/5123/Kyrgyzstan_pdf
- Peachey, Everett J. (2004). The Aral Sea Basin Crisis and Sustainable Water Management in Central Asia. *Journal of Public and International Affairs*, Volume (15), 1-20. Retrieved from: <https://jpia.princeton.edu/sites/jpia/files/2004-1.pdf>
- Phillips, Deborah, M. Daoudy & S. McCaffrey (2006). Transboundary Water Cooperation as a Tool for Conflict Prevention and Broader Benefit-Sharing. Swedish Ministry of Foreign Affairs Expert Group on Development Issues (EGDI).
- Rashid, Ahmed (1994). *The Resurgence of Central Asia, Islam or Nationalism?*. London: Zed Book.
- Savenije, Hubert H.G. & Arjen Y. Hoekstra (2009). *Water resources Management*. Oxford: EOLSS Publishers/ UNESCO.
- Sokolov, Vadim. *IWRM as an Instrument for Improving Water Security in Central Asia*. Tashkent: Scientific-Information Center of Interstate Commission for Water Coordination/ GWP CACENA.
- UNESCO (2014). Drops of Water 4, Good water, water to “eat”. What is virtual water?. Retrieved from: http://www.unesco.org/new/fileadmin/MULTIMEDIA/FIELD/Venice/pdf/special_events/bozza_scheda_DOW04_1.0.pdf

- UNEP (United Nations Environment Program) (2005). Global International Waters Assessment. Aral Sea, GIWA Regional Assessment 24. Kalmar: University of Kalmar on behalf of UNIT.
- Vajpeyi, Dharendra K. (2012). *Water Resource Conflicts and International Security: A Global Perspective*. Lexington books.
- WaterWiki.net (2010). "CAWSCIP". Retrieved from: http://waterwiki.net/index.php?title=Central_Asia_Water_Sector_Coordination_Initiative
- Wegerich, Kai, Daniel Van Rooijen & Ilkhom Soliev (2015). Water Security in the Syr Darya Basin. *Water journal*, volume (7), 4657-4684. Retrieved from: <https://www.mdpi.com/2073-4441/7/9/4657/pdf>
- Wegerich, Kai (2003). *Central Asia, Aspects of Transition: Water, the Difficult Path to a Sustainable Future for Central Asia*. Tom Evereth-Heath (Ed). London: Routledge.
- Wendelberger, Margit & Shukhrat Kodirov (2012). *High Value Agricultural Products (HVAPs) Hilfswerk Austria International*. Retrieved from: http://www.hilfswerk.tj/dwffuploads/HVAPs_English_final_version_2.pdf
- World Lake Database. Aral Sea Basin. Retrieved from: http://wldb.ilec.or.jp.s3-website-ap-northeast-1.amazonaws.com/gis_map/asi241-01.jpg
- Zonn, Igor S., Michael H. Glantz, Andrey G. Kostianoy & Aleksey N. Kosarev (2009). *The Aral Sea Encyclopedia*. New York: Springer-Verlag Berlin Heidelberg.
- Micklin, Philip (2000). *Managing water in Central Asia*. Royal Institute of International Affairs.
- Water Unites (2015). IFAS: organizational structure. Retrieved from: <https://www.waterunites-ca.org/themes/17-ifas-organizational-structure.html>