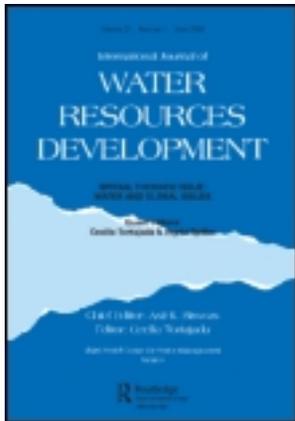


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### Principles of Transboundary Water Resources Management and Water-related Agreements in Central Asia: An Analysis

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# Principles of Transboundary Water Resources Management and Water-related Agreements in Central Asia: An Analysis

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**ABSTRACT** *This paper analyzes the use of transboundary water resources management principles in two key regional water-related agreements in Central Asia: the Agreement on Cooperation in Joint Management, Use and Protection of Interstate Sources of Water Resources (1992) and the Statute of the Interstate Commission for Water Coordination of Central Asia (2008). These agreements incorporate several internationally recognized transboundary water resources management principles, though there are also some weaknesses. The presence of such principles in these regional agreements offers plenty of hope for the promotion of sustainable water resources management in Central Asia.*

## Introduction

The region called Central Asia (Figure 1) comprises five republics (Uzbekistan, Kyrgyzstan, Tajikistan, Kazakhstan, and Turkmenistan) and covers an area of over four million km<sup>2</sup> (Sievers, 2002; McKinney, 2003). For drinking water, irrigation, hydropower, and other uses, these countries are dependent on water from the major rivers of the Aral Sea basin, mainly from the Amu Darya and the Syr Darya. The total drainage area of the Aral Sea basin is 1.51 million km<sup>2</sup>. In the upstream of the basin, in Kyrgyzstan and Tajikistan, these rivers are utilized mainly for hydropower production, especially during winter. In the downstream of the basin, in Turkmenistan, Kazakhstan, and Uzbekistan, these rivers are utilized mainly for agricultural purposes during summer (McKinney, 2003). Most of the water infrastructure in the region was developed during the Soviet era, when these countries were under one centralized administration and economic and natural resources were shared among the Central Asian states with subsidies for related costs from the central authority of the USSR (Kemelova & Zhalkubaev, 2003; McKinney, 2003; Libert & Lipponen, 2012, this issue).

The Amu Darya River has a total length of about 2,574 km; its total drainage area is 132,7000 km<sup>2</sup>. The river is shared by Tajikistan, Afghanistan, Kyrgyzstan, Uzbekistan, and Turkmenistan (McKinney, 2003; Sievers, 2002, p. 368).<sup>1, 2</sup> Of the total annual flow of

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**Figure 1.** Map of Central Asia. *Source:* United Nations Department of Public Information (1998). Reproduced with the permission from the UN, granted 6 March 2012.

about  $79.3 \text{ km}^3$ , Tajikistan, Afghanistan, Kyrgyzstan, Uzbekistan, and Turkmenistan contribute 59.9, 11.6, 1.6, 4.7, and  $1.5 \text{ km}^3$ , respectively (McKinney, 2003).

The Syr Darya River has a total length of about 2,337 km; its total drainage area is  $484,000 \text{ km}^2$ . The river is shared by Kyrgyzstan, Tajikistan, Kazakhstan, and Uzbekistan (McKinney, 2003; Sievers, 2002, p. 371).<sup>3</sup> Of the total annual flow of around  $37.2 \text{ km}^3$ , Kyrgyzstan, Tajikistan, Kazakhstan, and Uzbekistan contribute 27.6, 1.0, 2.4, and  $6.2 \text{ km}^3$ , respectively (McKinney, 2003).

The Amu Darya and Syr Darya rivers provide around 90% of the total annual flow and around 75% of the irrigation water in the region. Both rivers finally empty into the Aral Sea. The two upstream countries, Tajikistan and Kyrgyzstan, together contribute 77% of the inflow to the Aral Sea basin, while another important country, Afghanistan, contributes around 10% (McKinney, 2003). In Central Asia, 90% of the water is used for agriculture and 85% is used by downstream countries. It is noteworthy that Afghanistan is not a party to any of the regional water-related agreements or organizational bodies in the region despite its notable water contribution to the Aral Sea basin.

For the management of regional waters, the Central Asian countries concluded quite a few legal institutions, e.g., Agreement on Cooperation in Joint Management, Use and Protection of Interstate Sources of Water Resources (1992), Statute of the Interstate Commission for Water Coordination of Central Asia (ICWC) (2008) (for the full texts of the agreements see, ICWC, 2012). In addition, the Central Asian Countries also created

different regional organizations, e.g., Basin Water Associations, Scientific-Information Centre, Training Centre, Coordination Metrological Centre (cf. ICWC, 2012).

It is important to note that there is a clear distinction between institutions and organizations. According to the new institutionalism, institutions are defined as clusters of rights, rules, and decision-making procedures; on the other hand, organizations are construed as material entities that typically have personnel, offices and financial resources (Young, 1989, 2008, pp. 11–15). To summarize, institutions are the rules of the game and organizations are the players of the game (Young, 2008, p. 13). In addition, the motivations and interests of the various actors, belief systems, norms and the complex political, cultural and social context in which these institutions operate also influence the implementation of these institutions (Young, 2008, pp. 12–19). The clear difference drawn by the new institutionalism theory is that while treaties, agreements, and decision-making procedures set the rules of the game, the implementation of these rules is administered by the responsible organizations consisting of different actors and resources.

There is an ongoing debate as to whether Central Asia's water-related legal institutions (e.g. treaties, agreements, and decision-making procedures) are implementable enough. Delays in implementation of the existing legal institutions mean they could become outdated before they have had any effect (see e.g. UNECE, 2011, pp. 22–25; Kemelova & Zhalkubaev, 2003; McKinney, 2003). With respect to Central Asian water resources management in a transboundary setting, two serious and distinct research questions can be asked: (1) whether these water-specific legal institutions are problematic or weak, and (2) whether the organizations responsible for administering the implementation of these institutions are problematic or weak. The latter area of research is clearly distinct from the former. This paper chooses to focus only on the former, in the context of the principles of transboundary water resources management. Understanding the organizations (and the socio-cultural environment) responsible for administering the implementation of those legal institutions is not the focus of this study.

For this purpose, this paper has two specific objectives: first, to summarize the principles of international water law dealing with transboundary water resources management; secondly, to analyze to what extent these internationally accepted principles are addressed in the Agreement on Cooperation in Joint Management, Use and Protection of Interstate Sources of Water Resources (1992) and the Statue of the Interstate Commission for Water Coordination of Central Asia (2008). In addition, major weaknesses of these legal institutions are highlighted, together with suggestions for improvement.

### **Transboundary Water Resources Management Principles**

There are several principles of transboundary water resources management which originated in international water law. This section discusses transboundary water resources management principles that are recognized by international convention, judicial decisions, and international treaties. These are the principle of equitable and reasonable utilization; the obligation not to cause significant harm; the principles of cooperation and information exchange; the principles of notification, consultation, and negotiation; and the peaceful settlement of disputes. These principles form the basis of the 1966 Helsinki Rules on the Uses of the Waters of International Rivers (“Helsinki Rules”) and the 1997 UN Convention on Non-Navigational Uses of International Watercourses (“UN Watercourses

Convention”) (Rahaman, 2009a, 2009b; Giordano & Wolf, 2003, p. 167). Table 1 summarizes the relevant articles of some international conventions and treaties that have endorsed these principles.

#### *Principle of Equitable and Reasonable Utilization*

This use-oriented principle is a subset of the theory of limited territorial sovereignty. It entitles each basin state to a reasonable and equitable share of water resources for beneficial uses within its own territory (Art. IV, 1966 Helsinki Rules; Art. 5, 1997 UN Watercourses Convention).

The principle of equitable and reasonable utilization rests on a foundation of shared sovereignty and equality of rights. It does not necessarily mean equal share of waters. In determining equitable and reasonable share, relevant factors such as the geography of the basin, hydrology of the basin, population dependent on the waters, economic and social needs, existing utilization of waters, potential needs in future, climatic and ecological factors of a natural character, and availability of other resources should be taken into account (Art. V, 1966 Helsinki Rules; Art. 6, 1997 UN Watercourses Convention; Art. 13, 2004 Berlin Rules on Water Resources). It entails a balance of interests to accommodate the needs and uses of each riparian state. This principle has substantial support in state practice, judicial decisions, and international codifications (Birnie & Boyle, 2002, p. 302).

#### *Obligation Not to Cause Significant Harm*

This principle is also a part of the theory of limited territorial sovereignty (Eckstein, 2002, p. 82). According to this principle, no state in an international drainage basin is allowed to use the watercourses in its territory in a way that would cause significant harm to other basin states or to their environment, including harm to human health or safety, to the use of the waters for beneficial purposes, or to the living organisms of the watercourse systems.

This principle is widely recognized by international water and environmental law, often expressed as *sic utere tuo ut alienum non laedas*. However, questions remain regarding the definition or extent of the word “significant” and when “harm” becomes “significant harm”. This principle is incorporated in most modern international water conventions, treaties, and agreements. It is now considered part of customary international law (Eckstein, 2002, pp. 82–83).

#### *Principles of Cooperation and Information Exchange*

Each riparian state of an international watercourse has a responsibility to cooperate and exchange data and information regarding the state of the watercourse as well as present and future planned uses along the watercourse (Birnie & Boyle, 2002, p. 322). These principles are recommended by the 1966 Helsinki Rules (Arts. XXIX, XXXI), while Articles 8 and 9 of the 1997 UN Watercourses Convention make them obligatory.

These principles are incorporated in most modern international water conventions, treaties, and agreements, for example the 1966 Helsinki Rules, the 1997 UN Watercourses Convention, the 1960 Indus Waters Treaty, the 1995 SADC Protocol on Shared Watercourses, the 2002 Sava River Basin Agreement, the 1996 Mahakali River Treaty, the 1995 Mekong Agreement, the 2004 Berlin Rules, and the 1992 UNECE Water

**Table 1** Transboundary water management principles and relevant articles of some international conventions, agreements, and treaties.

Principles	Relevant Articles			
	ILA Helsinki Rules (1966)	UN Watercourses Convention (1997)	ILA Berlin Rules (2004)	1992 UNECE Water Convention
Reasonable and equitable utilization	Arts. IV, V, VII, X, XXIX (4)	Arts. 5, 6, 7, 15, 16, 17, 19	Arts. 10.1, 12, 13, 14, 16	Art. 2.2c
Not to cause significant harm	Arts. V, X, XI, XXIX (2)	Arts. 7, 10, 12, 15, 16, 17, 19, 20, 21(2), 22, 26(2), 27, 28(1), 28(3)	Arts. 8, 10.2, 16	Arts. 2.1, 2.3, 2.4, 3
Cooperation and information exchange	Arts. XXIX (1), XXIX (2), XXXI	Arts. 5(2), 8, 9, 11, 12, 24(1), 25(1), 27, 28(3), 30	Ch. XI, Arts. 10, 11, 56, 64	Arts. 6, 9, 11, 12, 13, 15, 16
Notification, consultation, and negotiation	Arts. XXIX (2), XXIX (3), XXIX (4), XXX, XXXI	Arts. 3(5), 6(2), 11–19, 24(1), 26(2), 28, 30	Arts. 57, 58, 59, 60	Art. 10
Peaceful settlement of disputes	Arts. XXVI–XXXVII	Art. 33	Ch. XIV, Arts. 72–73	Art. 22, Annex II

Sources: Updated from Rahaman, 2009a, Rahaman, 2009b.

Convention. These principles are also acknowledged by modern international environmental conventions and declarations, for example the 1972 Stockholm Declaration of the UN Conference on Human Environment (Principles 13, 22, 24), the 1992 Rio Declaration on Environment and Development (Principles 7, 9, 12, 13, 17, 27), and the 1992 Convention on Biological Diversity (Arts. 5, 17).

#### *Principles of Notification, Consultation and Negotiation*

Every riparian state in an international watercourse is entitled to prior notice, consultation, and negotiation in cases where the proposed use by another riparian of a shared watercourse may cause serious harm to its rights or interests. These principles are generally accepted by international conventions, agreements, and treaties. However, naturally, upstream countries often oppose this principle. It is interesting to note that during the negotiation process regarding the 1997 UN Watercourses Convention, these principles, which are included in Articles 11 through 18, were opposed by only three upstream riparian countries: Ethiopia (Nile basin), Rwanda (Nile basin), and Turkey (Tigris–Euphrates basin) (Birnie & Boyle, 2002, p. 319).

Article 3 of the International Law Association's (ILA) Complementary Rules Applicable to International Resources (adopted at the 62nd conference, Seoul, 1986) states that "when a basin state proposes to undertake, or to permit the undertaking of, a project that may substantially affect the interests of any co-basin state, it shall give such state or states notice of the project. The notice shall include information, data and specifications adequate for assessment of the effects of the project" (quoted in Manner & Metsälampi, 1988).

These principles are incorporated in most modern international water conventions, treaties, and agreements, for example the 1966 Helsinki Rules, the 1997 UN Watercourses Convention, the 1960 Indus Waters Treaty, the 1995 SADC Protocol on Shared Watercourses, the 2002 Sava River Basin Agreement, the 1996 Mahakali River Treaty, the 1995 Mekong Agreement, the 2004 Berlin Rules, and the 1992 UNECE Water Convention. These principles are also acknowledged by modern international environmental conventions and declarations, for example the 1992 Rio Declaration on Environment and Development (Principles 18, 19) and the 1992 Convention on Biological Diversity (Art. 27.1).

#### *Peaceful Settlement of Disputes*

This principle says that all states in an international watercourse should seek to settle disputes by peaceful means, even in cases where the states concerned cannot reach agreement by negotiation.

Most modern international water conventions, treaties, and agreements have endorsed this principle, for example the 1966 Helsinki Rules, the 1997 UN Watercourses Convention (Para. 1, Art. 33), the 1960 Indus Waters Treaty, the 1995 SADC Protocol on Shared Watercourses, the 2002 Sava River Basin Agreement, the 1996 Mahakali River Treaty, the 1995 Mekong Agreement, the 2004 Berlin Rules, and the 1992 UNECE Water Convention. This principle is also acknowledged by modern international environmental conventions and declarations, for example the 1992 Rio Declaration on Environment and Development (Principle 26) and the 1992 Convention on Biological Diversity (Art. 27, Annex II).

### **Analysis of the Regional Water-related Agreements in Central Asia**

The following Central Asian water-related agreements have been adopted by Uzbekistan, Tajikistan, Kyrgyzstan, Kazakhstan, and Turkmenistan:

- Statement of Heads of Water Economy Organizations of Central Asian Republics and Kazakhstan (1991)
- Agreement between Republic of Kazakhstan, Kyrgyz Republic, Republic of Tajikistan, Turkmenistan, and Republic of Uzbekistan on Cooperation in Joint Management, Use and Protection of Interstate Sources of Water Resources (1992)
- Agreement between Republic of Kazakhstan, Kyrgyz Republic, Republic of Tajikistan, Turkmenistan, and Republic of Uzbekistan on Joint Activities in Addressing the Aral Sea and the Zone around the Sea Crisis, Improving the Environment, and Enduring the Social and Economic Development of the Aral Sea Region (1993)
- Agreement on the Status of the International Fund for Saving the Aral Sea (IFAS) and Its Organizations (1999)
- Statute of the Interstate Commission for Water Coordination of Central Asia (2008)
- Provision about Rotation of Executive Bodies of the Interstate Coordination Water Commission (ICWC) of Central Asia and their Heads (2008)
- Statute of the Scientific Information Centre (SIC) of ICWC (1999)
- Statute of the SIC ICWC Branches in the Aral Sea Basin States (1999)
- Statute of the Secretariat of ICWC (1993)
- Statute of the Coordination Metrological Centre ICWC (2000)
- Statute of the Basin Water Association “Amudarya” (1992)
- Statute of the Basin Water Association “Syrdarya” (1992)

This paper analyzes the Agreement on Cooperation in Joint Management, Use and Protection of Interstate Sources of Water Resources (“Almaty Agreement”, 1992) and the Statute of the Interstate Commission for Water Coordination of Central Asia (“ICWC Statute”, 2008) in relation to the principles of transboundary water resources management. The Scientific Information Centre, Coordination Metrological Centre, and Basin Water Associations “Amudarya” and “Syrdarya” act as the ICWC’s executive bodies under the jurisdiction of the ICWC Statute (2008). While the International Fund for Saving the Aral Sea (IFAS) as a funding organization focuses on overall regional development in the Aral Sea basin, the Almaty Agreement and ICWC Statute, solely focus on the management of water resources in Central Asia. The 1999 Agreement about the Status of IFAS and Its Organization acknowledged the Almaty Agreement and also annexed the ICWC and its executive bodies.

This section concentrates solely on analysis of the content of the Almaty Agreement and the ICWC Statute to find out to what extent the principles of transboundary water resources management are included in these two agreements (see Table 2).

**Table 2.** Transboundary water resources management principles and relevant articles in selected Central Asian water-related agreements and statutes.

Principles	Almaty (1992)	ICWC Statute (2008)	BWO Amudarya (1992)	BWO Syrdarya (1992)
Reasonable and equitable utilization	Preamble; Arts. 1, 2, 10	Arts. 1.5, 2.1, 2.2	Arts. 1.3, 2.1	Arts. 1.3, 2.1
Not to cause significant harm	Arts. 3, 4	Arts. 1.4, 2.3, 2.4, 4.1, 4.2, 5.5	Arts. 1.3, 2.2, 2.5, 2.7, 3.8	Arts. 1.3, 2.2, 2.5, 2.7, 3.8
Cooperation and information exchange	Arts. 5, 7, 8, 9, 10	Arts. 2.7, 2.10, 2.11, 2.13, 2.16, 4.2, 5.1, 5.6, 5.7, 5.8	Arts. 2.3, 2.4, 2.5, 2.6, 3.3, 3.5	Arts. 2.3, 2.4, 2.5, 2.6, 3.3, 3.5
Notification, consultation, and negotiation	Arts. 7, 8, 9, 10, 11	Arts. 2.12, 2.18, 2.19	Arts. 3.2, 3.3	Arts. 3.2, 3.3
Peaceful settlement of disputes	Arts. 8, 9, 10, 11, 13	Arts. 2.17, 4.1, 4.2, 4.4	Arts. 2.1, 3.1, 3.2	Arts. 2.1, 3.1, 3.2

*Agreement on Cooperation in Joint Management, Use and Protection of Interstate Sources of Water Resources (1992)*

Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan, and Turkmenistan signed this agreement in Almaty, Kazakhstan, on 18 February 1992.

The Preamble and Articles 1 and 2 endorse the principle of reasonable and equitable use. The Preamble of the agreement acknowledges the equal rights and responsibility for water resources rational use and protection. It also recognizes the interdependence of all states' interests in common water use in accordance with the principles and equitable regulation of their consumption. Article 1 recognizes that all states have equal rights for the use of region's water resources and responsibility for their rational use and protection.

Article 2 mentions that "Parties are obliged to provide strict observance of agreed order and rules of water resources use and protection". Article 10 assigns power to the ICWC and its executive bodies to implement measures on the rational use of water resources and guaranteed water supply volume to the Aral Sea.

Articles 3 and 4 of the agreement endorse the obligation not to cause harm. According to Article 3, each participating State is obliged not to allow any action within its territory that would cause harm to other States.

Article 4 obliges the parties to "carry out joint work for solution of ecological problems connected with the Aral Sea desiccation" and to establish sanitary release volumes for every given year. According to Article 10, the ICWC and its executive bodies are entitled to implement measures regarding sanitary releases along the river channels and through irrigation systems and guaranteed water supply to river deltas and the Aral Sea.

Articles 5, 7, 8, 9, 10, and 11 acknowledge the principles of cooperation, information exchange, notification, consultation, and negotiation. Article 5 calls for information exchange on scientific-technical progress in water use and protection as well as carrying out common research for scientific-technical provision of water-related projects. Article 7 creates an organization, the ICWC, involving all states, for the regulation, rational use, and protection of water resources from interstate sources.

Article 8 establishes the jurisdiction of the ICWC, which is to determine regional water policy, rational use of water resources, prospective programmes on the region's water supply, and measures of its implementation. The ICWC is also entitled to elaborate annual water consumption limits for each republic in the region and for the region as a whole. As noted earlier, Article 10 provides the mechanism through the decision of the ICWC and its executive bodies to implement measures on rational water use, sanitary releases, and water supply volume to river deltas and the Aral Sea.

Thus, the ICWC is created as a legally authorized organization to promote cooperation, information exchange, notification, consultation, and negotiation with the participation and cooperation of all states. The ICWC's executive bodies such as the Scientific Information Centre, Training Centre, and Coordination Metrological Centre are also created as part of the ICWC Statute (2008) to provide the necessary support in this regard.<sup>4</sup> According to Article 9, both the Amudarya and Syrdarya Basin Water Associations are part of the ICWC's executive and interdepartmental control entities.

Article 11 clearly mentions that "all decisions by ICWC on the established water intake limits, water resources rational use and protection are obligatory for all water consumers and water use". Articles 8, 9, and 10 assign power to the ICWC and its executive bodies to

determine rational water use, prospective programmes, and obligatory enforcement of the decision. Article 13 recommends that all disputes should be solved by the heads of the republics' water-economic organizations, and if necessary, along with the participation of independent representatives.

It is clear that the Almaty Agreement stresses institutional and organizational level peaceful settlement of disputes over the political level. The focus on institutional settlement of disputes within proper organizational setting is quite positive. However, the weakness of the Almaty Agreement, as with many treaties in the world, is that it defines no time frame and no mechanisms for solving a particular dispute should the authorized institutions and organizations fail to achieve agreement. The agreement does not provide any time frame for the prior notification of the planned project. But if one party fails to provide prior notification of the proposed structure on time and in the absence of a definite time frame for such notification in the agreement, it is not clear how the dispute will be solved. These are particular points to improve in future.

*Statute of the Interstate Commission for Water Coordination of Central Asia (ICWC) (2008)*

The ICWC was created according to Article 7 of the Almaty Agreement. The first Statute of the ICWC was adopted by the Central Asian republics in 1992. After the creation of the IFAS, the ICWC and its executive bodies were annexed to the IFAS as stipulated in Article 1 of the Agreement about the Status of the IFAS and Its Organizations (9 April 1999) and in the decision of the IFAS board on 27 March 2004. A new Statute of the ICWC was adopted on 18 September 2008. This section concentrates on the 2008 Statute of the ICWC to analyze to what extent it incorporates internationally acknowledged principles of transboundary water resources management.

According to Article 1.4, the ICWC is a regional body empowered to deal with the joint solution of issues related to shared water management, effective use, and protection of the Aral Sea. Articles 1.5, 2.1, and 2.2 acknowledge the principles of equitable and reasonable utilization. Article 1.5 states, "ICWC and its executive bodies implement a set of measures and procedures ensuring equitable water allocation along the interstate sources, taking into account nature needs and future development". In relation to Article 1.5, Article 2.1 defines four clear objectives of the ICWC, which include elaboration and implementation of a regional policy of shared water management (Art. 2.1), applying integrated water resources management (IWRM) principles (Art. 2.2), elaboration and approval of annual water withdrawal limits for the riparian states and supervision over their observance, and observing, planning, and control of the operation regimes of the large interstate reservoirs (Art. 2.3), and ensuring annual releases of environmental flow to the Aral Sea and establishing sanitary releases (Art. 2.4). The main focus is on meeting the social, economic, and environmental needs of the present and future.

The clear inclusion of the requirement to apply IWRM principles in shared water management throughout the Aral Sea basin (Art. 2.2) is unique. None of the other international treaties and conventions discussed in this paper and presented in Table 1 have included this important point, even though there is a clear need to include IWRM principles in international agreements along with the principles of transboundary water resources management.<sup>5</sup> The Training Centre of the ICWC is responsible for providing necessary training in the field of IWRM (Art. 5.8). The aim of IWRM is to maximize the

resultant economic and social welfare in an equitable manner through the coordinated management of water, land, and associated related resources (Global Water Partnership, 2003; Rahaman & Varis, 2005). For a concrete idea of the IWRM principles and the necessity of their inclusion in shared water management, see Rahaman *et al.* (2004); Rahaman & Varis (2005, 2008) and Varis *et al.* (2008).

In line with Articles 3 and 4 of the Almaty Agreement, Articles 1.4, 2.3, 2.4, 4.1, 4.2, and 5.5 of the 2008 ICWC Statute endorse the riparian states' obligation not to cause significant harm. These articles also provide the mandate and authority to the ICWC to ensure that no harm is done to other parties, including no harm to the environment. In managing water resources through the ICWC, Article 1.4 calls for mutual respect of parties' interest and the necessity to protect the Aral Sea. The mandates given to the ICWC in Articles 2.3 and 2.4 were noted earlier.

In Article 4.1 of Section IV (Rights and Obligations), the ICWC is given authority to approve water withdrawal limits for shared water sources for state-founders, together with decision-making power on water withdrawal limit corrections according to the actual water situation. According to Article 4.2, based on the actual water situation, the ICWC has the power to permit basin water organisations (BWOs) to make on-line water-withdrawal corrections within established limits and with notification to the ICWC members. Article 5.5 provides clear guidelines and responsibility to ensure that sufficient water is released to nature:

On annual basis, BWO "Amudarya" and BWO "Syrdarya" prepare agreed proposals on water releases for nature, Aral Sea and on sanitary releases along canals that should not be used for other purposes. The heads of BWO "Amudarya" and BWO "Syrdarya" bear personal responsibility for execution of ICWC-set releases to the Aral Sea within the zones of BWO jurisdictions.

Articles 2.7, 2.10, 2.11, 2.13, 2.16, 4.3, 5.1, 5.6, 5.7, and 5.8 incorporate the principle of cooperation and information exchange. Article 2.7 calls for coordination on the implementation of joint research aimed at scientific and engineering solutions through the utilization of the scientific capacities of the state-founders. According to Article 2.10, "development and operation of unified regional, basin and national information systems on water use, on dissemination and exchange of information related to water resources and their use by the state-founders" is one of the objectives of the ICWC.

Also among the objectives of the ICWC, Article 2.11 includes facilitation and coordination between regional and national water organizations, hydro-meteorological services, and joint work on the improvement of monitoring systems and hydrometric operation. Article 2.13 calls for promoting cooperation in developing and implementing new technologies for the efficient management of water resources. Article 2.16 calls for strengthening the scientific and technological capacities of the ICWC executive bodies.

Article 5.1 includes the Scientific Information Centre (SIC), the Coordination Metrological Centre (CMC),<sup>6</sup> and the Training Centre (TC) as the executive bodies of ICWC. These executive bodies are authorized to facilitate cooperation, information exchange, and joint research and development. Article 5.6 provides a mandate to the SIC to create automated water management systems in river basins and to create and operate common regional, basin, and national information systems on water and land use. Article 5.7 provides a mandate to the CMC to conduct cooperative preparation and

utilization in practice of a normative-technical basis of metrological provision for water management, integrated policy of water accounting, and measurement technologies, and to develop automated devices and facilities for water-sector use. It also authorizes the promotion of collaborative action between the national metrological organizations in the region. According to Article 5.8, the TC is responsible for information and knowledge sharing through training provided in the area of national and international water law, IWRM, and agriculture, with equal representation of the region's countries.

Articles 2.12, 2.18, and 2.19 acknowledge principles of notification, consultation, and negotiation. According to Article 2.12, one of the objectives of ICWC is to coordinate actions among different ministries and departments related to the irrigation needs and hydropower production. Article 2.18 mandates the ICWC to investigate the notification by one of the states about construction of new water structures that impact water regimes in shared waterways. According to Article 2.19, the ICWC is authorized to elaborate the "country proposals on construction, reconstruction and operation of interstate water infrastructures, with cost sharing among the parties".

Articles 2.17, 4.1, 4.2, 4.4, and 4.5 incorporate mechanisms for the peaceful settlement of disputes. According to Article 2.17, the ICWC investigates disputes and disagreements between shared water users and if required, develops procedures "for creation of a special commission to establish facts as well as setting procedures for liabilities". The decision-making power related to the use of shared water resources, included in Articles 4.1 and 4.2, was discussed earlier. According to Article 4.4, the decision made by the ICWC is final: "Decisions made by ICWC regarding regulation, use and protection of shared water are obligatory for all water consumers and users, irrespective of their citizenship or affiliation and ownership form". This is quite extraordinary power: the jurisdiction of the ICWC's decision regarding water is final, irrespective of national boundaries and citizenship.

According to Article 4.5, the members of the ICWC should ensure the execution of the ICWC's decision on territories of their respective states. It should be noted here that although these articles are clear about dispute-settlement procedures, it is not clear how the matter will be dealt with if one party fails to execute a decision of the ICWC.

#### *The Prospect of UN Watercourses Convention (1997) to Be in Force and Its Implication*

After considerable discussion, from 1991 into 1997, on the ILC's draft, on 21 May 1997 the UN General Assembly adopted the Convention on Non-Navigational Uses of International Watercourses, widely known as the UN Watercourses Convention. This convention incorporated the principles of transboundary water resources management, building on the 1966 Helsinki Rules (UNDP, 2006, p. 218, Table 1).

Following a request by Turkey, the General Assembly of the United Nations called for a vote on Resolution 51/229 on adopting the UN Watercourses Convention. Of 133 nations, 103 voted in favour, 27 abstained, and 3 (Burundi, China, and Turkey) voted against (IWLP, 2011).

According to Article 36(1) of the convention, 35 instances of ratification, approval, acceptance, or accession are necessary to bring the convention into force. The convention was open for signature from 21 May 1997 until 20 May 2000 (Article 34). States and regional economic integration organizations, however, may continue to ratify, accept, approve, or accede to the convention indefinitely (Article 36). As of 1 August 2011, 24 countries had ratified or consented to be bound (acceptance, approval, or accession) by the

UN Watercourses Convention (Table 3). The prospect of the UN Watercourses Convention’s coming into force is now plausible. Between May 2010 and April 2011, six more countries became parties to the convention, which is much faster than the previous trend (Salman, 2007). Another five countries have signed the convention but have yet to ratify it: Côte d’Ivoire, Luxembourg, Paraguay, Venezuela, and Yemen (IWLP, 2011).<sup>7</sup> For a detailed analysis of to what extent the transboundary water management principles discussed in this paper are incorporated in the 1997 UN Watercourses Convention, the 1966 ILA Helsinki Rules, and the 2004 ILA Berlin Rules, see Rahaman (2009a).

Uzbekistan is the only country in Central Asia that has become a party to the UN Watercourses Convention (4 September 2007). Future studies should investigate why the other Central Asian countries are hesitant to become parties to the convention; that investigation is beyond the scope of this study.

Given the current status and the quick pace of ratification, it is likely that, in the coming years, another 11 countries could become parties to the 1997 UN Watercourses Convention; the convention will then be in force.

The work of the IFAS now focuses more on the improvement of agreements in line with the generally acknowledged principles of transboundary water resources management and IWRM (Libert & Lipponen, 2012; IFAS, 2009). In addition, the ICWC is authorized to improve and implement active agreements on shared water (Arts. 2.6–2.10, ICWC, 2008; Art. 3, IFAS, 2009). The Preamble of the Joint Statement of the Heads of the States–Founders of the IFAS (IFAS, 2009) clearly states that the “use of water resources of the Central Asia region is implemented within the interest of all stakeholders of the IFAS by

**Table 3.** Parties to the 1997 UN Watercourses Convention as of 1 August 2011.

Country	Ratification	Approval	Acceptance	Accession
Finland			23 January 1998	
Syria	2 April 1998			
Norway	30 September 1998			
South Africa	26 October 1998			
Lebanon				25 May 1999
Jordan	22 June 1999			
Hungary		26 January 2000		
Sweden				15 June 2000
Netherlands			9 January 2001	
Iraq				9 July 2001
Namibia	29 August 2001			
Qatar				28 February 2002
Portugal	22 June 2005			
Libya				14 June 2005
Germany	15 January 2007			
Uzbekistan				4 September 2007
Greece				2 December 2010
Guinea-Bissau				19 May 2010
Morocco				13 April 2011
Spain				24 September 2009
Tunisia	22 April 2009			
Nigeria	27 September 2010			
France				22 February 2011
Burkina Faso				22 March 2011

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following generally acknowledged principles of the international law". That shows that Central Asia has the required commitments and institutional instruments in place to facilitate the implementation of the internationally acknowledged transboundary water management principles in practice.

Many scholars (e.g. Libert & Lipponen, 2011; Kemelova & Zhalkubaev, 2003) have noted that the current water-related agreements and statutes in Central Asia remain on paper and that in reality there is a lack of implementation of these agreements and principles. It is interesting to note that some Central Asian water-related agreements already acknowledge the principles of transboundary water resources management that form the skeleton of the UN Watercourses Convention.

### **Discussion on the Almaty Agreement (1992) and the ICWC Statute (2008)**

Although a matter of high relevance and significance for the Central Asia region, water quality issues are not addressed comprehensively in either the 1992 Almaty Agreement or the 2008 ICWC Statute (Libert & Lipponen, 2011; McKinney, 2003). Even though the ICWC is mandated for the purpose of water allocation, Libert & Lipponen (2011) noted that water allocation quotas for different states have not been implemented fully or agreed by the ICWC. It raises concern, as noted in earlier sections of this article, regarding the absence of clear guidelines on how to resolve an issue should the ICWC fail to address or solve it. Another question might be asked as to how a particular issue can be solved if one nation fails to execute a decision of the ICWC despite the relatively strong decision-making power provided to it. Another issue of concern is that, while the cooperation, notification, consultation, and dispute-settlement mechanisms provided by these two documents rely heavily on institutional structure, there is no time limit set for the prior notification and consultation process. In the absence of any time limit for prior notification for potential structures of transboundary significance being planned or built in an international river basin by any of the riparian states, it is not clear how the issue will be resolved.

As observed by McKinney (2003) and Libert & Lipponen (2011), although according to the statutes (2008 ICWC Statute; 1992 Amudarya and Syrdarya BWO Statutes), BWOs should control all main interstate structures for controlling transboundary waters along the Syr Darya and Amu Darya rivers, no main interstate structure, except the main interstate canal in Uzbekistan, is currently under control of BWOs. It raises a question as to whether BWOs are operational management organizations and executive and implementing bodies of the ICWC as stipulated in the 1992 Almaty Agreement, 2008 ICWC Statute, and 1992 Amudarya and Syrdarya BWO Statutes (Articles 1.1, 2.1–2.7, 3.1–3.9 in both statutes) or whether they are merely planning organizations (McKinney, 2003). Again, it raises concern with regard to the fact that if one or more states disobey the Almaty Agreement or ICWC Statute, there is no clear mechanism for resolving the issue (Kemelova & Zhalkubaev, 2003; Sievers, 2002).

As pointed out earlier, it is exemplary that the 2008 ICWC Statute includes application of IWRM principles in the management of water; however, one of the basic principles of IWRM, stakeholder participation, is totally excluded from the statute. It is worrying to observe that the ICWC Statute is fully focused on bureaucratic management through different organizations and delegation of decision-making power to the national and regional water organizations, and yet the need for participation of all concerned

stakeholders is never mentioned in the statute (McKinney, 2003). While it is important to have a strong legal basis for organizations like the ICWC, it is also important to ensure good and transparent management practices in those organizations through the effective participation of different stakeholders. Perhaps this omission has its origin in Soviet-era culture, where all kinds of management were administered through a centralized body. In any case, this issue should be addressed properly in future through the IFAS.

Another important aspect is the exclusion of Afghanistan from the regional water management framework. Afghanistan contributes 10% of the total annual water flow in the Aral Sea basin and is a very important riparian of the Amu Darya River basin (Horsman, 2008).<sup>8</sup> The basic foundation of effective transboundary water management depends on the participation of all riparian states in the management of a basin. This is also acknowledged by the 2009 Joint Statement of the Heads of State—Founders of the IFAS (Art. 5). The exclusion of Afghanistan from regional water-related treaties and from organizations like the ICWC, BWOs, CMC, SC, TC, and IFAS will make it really difficult to attain long-term sustainable transboundary water resources management in the region.

The work of Executive Committee of the International Fund for saving the Aral Sea (EC-IFAS), which aims to establish a close link between the Third Aral Sea Basin Program and the process of improving the institutional and legal framework, should address this institutional and legal loophole and make sincere attempts to include Afghanistan in the regional water and environmental management framework. In this regard, the obligations of the Central Asian republics to include Afghanistan in regional water management through Soviet-era treaties like the 1958 Treaty between Soviet-Afghan State Frontiers, the 1961 Agreement between Soviet Socialists Republics and Afghanistan, and the Amu Darya Protocol 566 of September 1987, should be properly scrutinized (Horsman, 2008, p. 65–66). Without the inclusion of Afghanistan, no regional water agreement or organization in Central Asia is complete (Horsman, 2008).

Despite all the weaknesses presented in this section, it is still very positive from the findings of the present study that the 1992 Almaty Agreement and the 2008 ICWC Statute have incorporated internationally acknowledged transboundary water resources management principles. Table 2 summarizes the relevant articles in selected Central Asian water-related agreements that have addressed the major principles of transboundary water resources management discussed in the previous sections (see also Table 1).

## **Conclusion**

This paper has analyzed two regional water-related agreements in Central Asia—the 1992 Agreement on Cooperation in Joint Management, Use and Protection of Interstate Sources of Water Resources and the 2008 Statute of the Interstate Commission for Water Coordination of Central Asia between Uzbekistan, Kyrgyzstan, Tajikistan, Kazakhstan, and Turkmenistan—in relation to the principles of transboundary water resources management.

The study finds that these agreements incorporate several internationally accepted transboundary water resources management principles. These are the principles of equitable and reasonable utilisation, obligation not to cause significant harm, principles of cooperation, information exchange, notification, consultation, and peaceful settlement of disputes (see Tables 1 and 2).

In the Discussion section, this paper also highlighted some areas of possible improvement in these agreements: inclusion of a definite time frame for prior notification and consultation procedures, ensuring clear mechanisms for the execution of ICWC decisions, providing clear implementation authority to the executive bodies of the ICWC (e.g. basin water associations), encouraging participation of all concerned stakeholders in decision-making mechanisms, and inclusion of Afghanistan as a party to these agreements.

The findings suggest that the inclusion of these internationally accepted principles in these two regional water-related agreements is a positive development with regard to the implementation of these principles in practice and thus the facilitation of sustainable water resources management throughout Central Asia (with required inclusion of Afghanistan in the regional water management framework).

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### Notes

1. Sievers (2002, p. 368) includes Iran as a riparian of the Amu Darya, noting that the flow from the Tedjen River in Iran into Turkmenistan accounts for Iran's connection to the Amu Darya.
2. The total length of the Amu Darya varies in different reports, e.g. 2,574 km in McKinney (2003) and 2,400 km in Sievers (2002, p. 368). The total drainage area also varies, e.g. ICWC (2011) has 1,071,000 km<sup>2</sup>.
3. The total length of the Syr Darya varies in different reports, e.g. 2,337 km in McKinney (2003) and 2,500 km in Sievers (2002, p. 371).
4. See also the Statute of Scientific Information Centre of ICWC (1999) and the Statute of the Coordination Metrological Centre of ICWC (2000).
5. See also Article 5 of the Joint Statement of the Heads of the States–Founders of the IFAS, which reiterates the commitment of Central Asian countries to the IWRM (IFAS, 2009).
6. For details of the mandates of the SIC and CMC, please see the Statute of SIC of ICWC (1999) and Statute of CMC of ICWC (2000).
7. According to Article 18 of the 1969 Vienna Convention on the law of Treaties, "A state is obliged to refrain from acts which would defeat the object and purpose of a treaty when . . . it has signed the treaty . . . subject to ratification, acceptance or approval, until it shall have made its intention clear not to become a party to the treaty".
8. Interested readers are advised to consult Horsman (2008, p. 67–71) for a detailed analysis of the reasons for Afghanistan's exclusion from the regional water management structure.

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