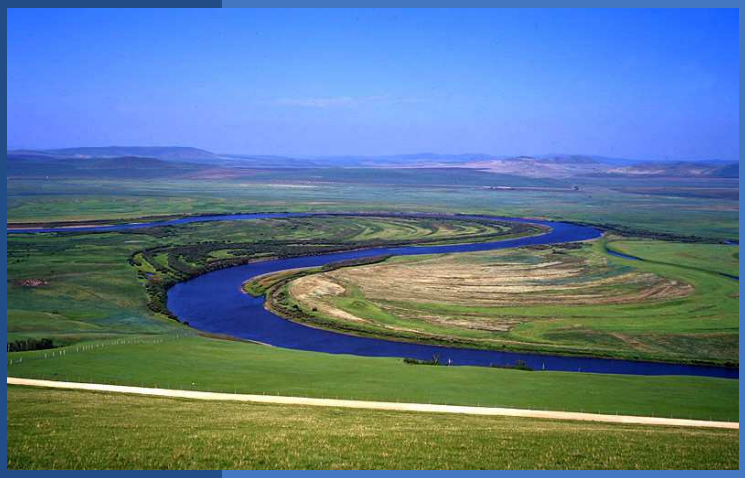
Sino-Russian Transboundary Waters:
A Legal Perspective on Cooperation



Sergei Vinogradov
Patricia Wouters

STOCKHOLM PAPER
December 2013

Institute for Security & Development Policy

Sino-Russian Transboundary Waters:

A Legal Perspective on Cooperation

Sergei Vinogradov

Patricia Wouters

Institute for Security and Development Policy
Västra Finnbodavägen 2, 131 30 Stockholm-Nacka, Sweden
www.isdp.eu

Sino-Russian Transboundary Waters: A Legal Perspective on Cooperation is a *Stockholm Paper* published by the Institute for Security and Development Policy. The *Stockholm Papers Series* is an Occasional Paper series addressing topical and timely issues in international affairs. The Institute is based in Stockholm, Sweden, and cooperates closely with research centers worldwide. The Institute is firmly established as a leading research and policy center, serving a large and diverse community of analysts, scholars, policy-watchers, business leaders, and journalists. It is at the forefront of research on issues of conflict, security, and development. Through its applied research, publications, research cooperation, public lectures, and seminars, it functions as a focal point for academic, policy, and public discussion.

ISBN: 978-91-86635-71-8

Cover photo: The Argun River running along the Chinese and Russian border, http://tupian.baike.com/a4_50_25_01200000000481120167252214222_jpg.html

Printed in Singapore

Distributed in Europe by:

Institute for Security and Development Policy
Västra Finnbodavägen 2, 131 30 Stockholm-Nacka, Sweden
Tel. +46-841056953; Fax. +46-86403370
Email: info@isdp.eu

Distributed in North America by:

The Central Asia-Caucasus Institute
Paul H. Nitze School of Advanced International Studies
1619 Massachusetts Ave. NW, Washington, D.C. 20036
Tel. +1-202-663-7723; Fax. +1-202-663-7785
E-mail: caci2@jhuadig.admin.jhu.edu

Editorial correspondence should be addressed to Alec Forss at: aforss@isdp.eu

Contents

Abbreviations

CBD	UN Convention on Biological Diversity (Rio de Janeiro, 1992)
COP	Conference of the Parties
DIPA	Dauria International Protected Area
EIA	Environmental Impact Assessment
GTI	Greater Tumen Initiative
GWP	Global Water Partnership
ICJ	International Court of Justice
ILC	UN International Law Commission
INBO	International Network of Basin Organizations
IWRM	Integrated Water Resources Management
JWG	Joint Working Group
MoU	Memorandum of Understanding
PRC	People's Republic of China
UN	United Nations
UNECE	UN Economic Commission for Europe
UNEP	UN Environment Programme
UNDP	UN Development Programme
UNWC	UN Convention on the Law of the Non-Navigational Uses of International Watercourses (New York, 1997)
UNECE TWC	UNECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Helsinki, 1992)
USSR	Union of Soviet Socialist Republics
WWF	World Wildlife Fund

Executive Summary

Water security has become a new global and regional challenge. Control over increasingly scarce water resources, especially those that cross international borders, has the potential to cause tensions and conflicts between states sharing them. In order to prevent such conflicts it is important to strike a balance between the competing interests of different states sharing an international watercourse, while also taking into account environmental requirements. This objective can be achieved only through interstate cooperation, with appropriate legal and institutional frameworks forming the core of such.

Rapid economic development in Northeast Asia has already put under serious pressure available water resources, including those belonging to some major transboundary river basins, shared by China and Russia. The Amur River in particular, the longest boundary watercourse in the world, has for years served as a focal point of bilateral cooperation between the two powerful neighbors, ranging from navigation, fisheries, and power generation to water resource utilization and ecosystem protection. While Sino-Russian interaction related to the management and use of transboundary water resources has experienced ups and downs, generally in accordance with political relations between the two states, over the last few years water-related cooperation has become increasingly active. Accordingly, the latter is governed by various international legal instruments, bilateral and multilateral, and is carried out under the auspices of different joint institutions.

The purpose of this paper is to analyze the existing legal and institutional frameworks, which form the basis of the Sino-Russian cooperation in this field, and to determine whether and to what extent they are adequate in dealing with new water security challenges facing the two states.

Introduction

Water security is rapidly becoming one of the most pressing global issues. As was acknowledged by the UN Secretary General at a meeting of the World Economic Forum in 2008, "environmental stress due to lack of water may lead to conflict and would be greater in poor nations."[1] An emerging global consensus places water at the very center of a brewing global crisis, which has been succinctly referred to as the "perfect storm" of shortages,[2] aggravated by the impact of climate change and continuing growth of populations in developing countries. Within this reality, it is becoming increasingly evident that the world's capacity to respond meaningfully to water security risks is in serious doubt. The growing tension over access to water resources manifests itself at all levels—local, national, and international[3]—with the potential for water-related conflicts most apparent in transboundary (or shared) water systems (rivers, basins, or aquifers), which cross administrative or international borders.[4]

Management and utilization of transboundary water resources is a multidimensional phenomenon where economic and environmental factors are intertwined with geopolitical and legal concerns. At the heart of this nexus is how to resolve the inherent contradiction between the physical integrity of an international watercourse (basin) and the sovereign right to use its waters by each state sharing it. The evident reduction in the amount and decline of the quality of freshwater resources increases competition between various uses and users across borders, which creates the potential to turn it into open rivalry. Interstate tensions and disputes over water resources are becoming increasingly common in different geographical regions, such as the Middle East, Northern Africa, and Southeast Asia, and are now considered as a new emerging threat to regional and even global security. Disputes over water usually arise either from water shortages, where existing and projected needs cannot be satisfied by available resources, or from transboundary impacts, first and foremost pollution. In order to prevent such conflicts it is important to strike a balance between the competing interests of different states sharing an international watercourse, while also taking into account the needs of ecosystems. This objective can be achieved only through interstate cooperation, with appropriate legal and institutional frameworks constituting the core of such.

It is within this context that this paper explores what is an important issue

for Northeast Asia: how China and Russia "cooperate" in the management of their shared water resources. While over the last two decades Russia and China have been able to achieve substantial progress in many areas of common interest—one of these being boundary delimitation—serious problems remain. Indeed, the utilization and management of transboundary waters across the region as a whole poses a significant challenge.

Elevated to a level of strategic partnership, relations between China and Russia have been bolstered by regular high-level diplomatic meetings;[5] both countries are also key members of the Shanghai Cooperation Organization. Russian President Vladimir Putin recently stated that Sino-Russian relations "have become one of the most important factors in international affairs" and said that bilateral cooperation would increase.[6] Accordingly, Sino-Russian ties cover a broad range of issues—from trade and energy to environmental protection, including cooperation on transboundary water resources.

The two countries share one of the largest river basins in the world, which is traversed by their extensive common boundary, as well as some smaller but important basins with other countries. Although the total amount of shared waters between the two countries is substantial, the availability of the resource is limited both in terms of quality and quantity. Given the scale and pace of economic development in China, the growing scarcity of water resources is already adversely affecting its ambitious development plans. Constantly increasing demand for water necessary to meet a growing list of economic and social needs amplifies the potential, more broadly, for international tensions across all of China's borders. While the current situation with transboundary water resources shared by China and Russia remains stable, existing and new water security challenges in the Northeast Asia are mounting. Significant transboundary pollution, water transfers, and growing abstraction of water for food production and urban development increase the risk of serious interstate tensions in the future. Such potential conflicts could be avoided and resolved only through collaborative efforts of both parties at various levels—intergovernmental, regional, and local. Ironically, the need for better coordination and possibly joint management and development of shared watercourses was emphasized by recent devastating floods in the summer-autumn of 2013 in the Amur basin, which caused enormous material damage to both countries.

The main focus of this paper is on the evolving legal frameworks and mechanisms governing cooperation over transboundary waters shared by Russia and China. This subject matter is examined from two angles: the bilat-

eral dimension of the Sino-Russian interaction on transboundary waters will be analyzed in the context of applicable multilateral environmental agreements and bilateral treaty practice; and, second, analysis is provided on the preconditions and opportunities for multilateral basin-wide cooperation, which extends beyond Russia and China and may involve their neighbors: Kazakhstan, Mongolia, and North Korea, who together with the former share some important "multinational" watercourses. Finally, the paper will attempt to identify what steps and measures Russia and China should take in the legal area which might contribute to strengthening cooperation and dispute avoidance, and thus enhance water security in the transboundary context.

Before proceeding to such, however, the paper first gives a general overview of Sino-Russian transboundary waters, and then outlines the history of relations between the two states in regard to the latter, as well as their current state and challenges. This serves to provide a context for the legal analysis that follows.

Sino-Russian Transboundary Waters: Overview and Challenges

The border separating the territories of China and Russia is the sixth-longest international boundary in the world and is composed of two sections—the short western segment in the Altai Mountains, which divides China's Xinjiang Uyghur Autonomous Region and Russia's Altai Republic, and the long eastern section. The eastern segment, which starts at the eastern China– Mongolia–Russia tripoint and runs eastward, is almost entirely formed by the following contiguous rivers:[7] the Argun (Ergun),[8] the Amur (Heilongjiang),[9] and the Ussuri (Wusuli).[10] The Argun flows for about 950 km to the point of its confluence with the Shilka River, where they together form the Amur.

The Argun–Amur system is the fourth-longest river in Russia and the tenth-longest river in the world.[11] The Amur Basin is formed by several rivers flowing both from Russian territory—the left tributaries Zeya, Bureya, and Argun, and from Chinese territory the right tributaries, Songhua (Sungari) and Huma rivers.[12] Its catchment area is located within the territories of Russia (995,000 km², or around 54% of the catchment), China (44.2%), and Mongolia (1.8%).[13] It is worth noting that the Amur River is unique in one respect: it is the only major river in the world that has no dams or reservoirs on the main stem.

The final, most eastward stretch of the border also runs along several rivers: the Ussuri River, its tributary Sungacha (Songacha),[14] and the Tumen River, and crosses Lake Khanka (Xinkai).[15] The boundary, which was established by the Sino-Russian Convention of Peking of 1860,[16] separates Primorsky Krai (Russia) and Heilongjiang province (Northeast China). The last frontier river—the Tumen River—is shared by China, North Korea, and Russia.[17]

There is another important watercourse—the Irtysh River[18]—in the westernmost part of China. The Irtysh is the main (first order) tributary of the Ob' River, the second-longest river in Russia.[19] Thus, the basin of the Ob' River is shared by China, Kazakhstan, Mongolia, and Russia.

This overview of transboundary water resources shared by China with its northern neighbor would be incomplete if it was limited to surface waters only. There are also several major transboundary aquifers, which are found beneath the Sino-Russian border in the Amur Basin.[20]

Ecological Threats

The ecological situation in the Sino-Russian transboundary basins is far from satisfactory.[21] Pollution as a result of industrial accidents and wastewater discharges is a recurrent issue. One of the most serious pollution incidents occurred on November 13, 2005, and involved an accidental release of about 100 tons of chemical pollutants into the Songhua (Sungari) River by a petrochemical plant in Jilin City, China, and which reached the Amur River in Russia.[22] Although the incident did not result in direct casualties, it caused contamination of drinking water, damaged the environment, adversely affected human health, and resulted in significant social and economic losses both in China and Russia. While Russian authorities have never requested financial compensation for the damage caused, China admitted its responsibility and provided drinking water and equipment necessary to deal with chemical pollution.

It is claimed, moreover, that the waters of the Amur receive a variety of toxic substances, which can be traced to everyday land-use practices rather than industrial spills or other accidents.[23] The greater input of chemical compounds to river water is caused by spring and autumn floods whereby surface and ground runoff contains pesticides, oil products, and mineral and organic fertilizers. In addition, aquatic ecosystem processes are seriously affected by deforestation and the destruction of wetlands and wildfires, but this is rarely considered in pollution management programs. Excessive logging and land conversion to agriculture lead to erosion and concomitant pollution by suspended matter.[24]

Significantly increased water pollution and frequent accidents have drawn the attention of the Chinese government. On December 3, 2005, the State Council's *Decision on Implementing the Strategy of Scientific Development and Strengthening Environmental Protection* prioritized "drinking water security and important river basins pollution control as the keystone of strengthening water pollution prevention and control," and listed it as one of the seven pivotal objectives of environmental protection in China for the next 15 years.[25] Following this, in February 2006, the *National Plan for Environmental Emergency Response* was released. [26] At the bilateral level the Sungari accident persuaded the two states to engage more actively in the joint monitoring of their transboundary waters and in developing emergency preparedness and response measures.

Due to obvious economic and demographic disparities and natural conditions, the input of the two countries to transboundary environmental pollu-

tion is very different.[27] It is estimated that China contributes 87.5 per cent to the total pollution of the Argun River, 75 per cent in the middle section of the Amur River, and 97.6 per cent to pollution of the Ussuri River.[28] While both countries look at the water resource utilization from the perspective of their economic development, the conservation of the aquatic ecosystems and their biodiversity, as well as maintaining the natural flow regime, are of lesser significance. It has been noted that "the most exploited [of] Amur's tributaries, as well as the headwaters of other transboundary watercourses are located in China, where anthropogenic pressure on shared water resources is, by all measures, stronger than in Russia, and is expected to remain so in the long run."[29]

In view of the current pollution rates and water withdrawals in Chinese territory, Russia finds itself in a vulnerable position. Whereas there are sufficient water reserves in the Amur Basin to meet the requirements of both states, it is presently the quality of water that is of greatest concern. Notwithstanding, there is a growing water shortage in the Upper Amur (Songacha River), Khanka areas, and in particular, the Irtysh Basin. It is expected that the water deficit will become increasingly acute in the future, because of the continuous aridization in North and Northeast China and the much greater consumption of water in order to increase food production.[30]

China and Russia's Water Resource Challenges

China and Russia are among the world's ten largest water users (assessed on a national level).[31] China in particular faces increasingly serious water problems.[32] While its total annual renewable water resources amount to about 2812 km^3, the sixth-largest in the world, its annual per capita freshwater resources (about 2156 m^3) are among the lowest for a major country.[33]

Already 11 of the country's 31 provinces suffer from water scarcity, a situation that will only be compounded by the country's continuing economic development.[34] Challenges related to livelihoods, health, and ecosystems are linked directly to the over-exploitation of China's water resources.[35] China is taking action to address some of these issues through its current five-year plan[36] and under its national policy, which places water as its number one priority.[37] Existing plans and actions aim to improve water conservation, enhance irrigation efforts, and prepare for increasing extreme events (droughts and floods) that adversely affect it.[38] It is worth noting that while Western China faces the most serious challenge when it comes to lack of water, Northern

China is not far behind. Whereas it accounts for only 19.6 per cent of its naturally available water resources, it has 46.5 per cent of the country's population, 64.8 per cent of the arable land, and 45.2 per cent of China's GDP.[39] The Plan of Revitalizing Northeast China for the 11th Five-Year Planning Period,[40] which contains some objectives up to 2020, has an extensive environmental component including a wide range of water-related measures. In particular, it envisages significant water transfer, storage, and irrigation projects. One of them is the controversial Argun (Hailaer) River – Lake Dalai water transfer, whose potential transboundary impacts has raised serious concerns among Russian environmentalists.[41]

In Russia, similar challenges exist, although not of the same magnitude and scale. The current situation in the water sector and its prospects are reflected in the Water Strategy adopted by the Russian government in 2009.[42] While Russia, along with Brazil, Canada and some other countries, possesses very significant renewable fresh water resources (4300 km^3, or 30,000 m^3 per capita),[43] their distribution is very uneven. The European part of the country, with 70 per cent of its population and economic potential, has less than 10 per cent of its overall water resources. The main problems faced by the water sector in Russia are the deficit of water in economically developed regions, as well as a high level of pollution and low water quality in most river basins. According to the Strategy, among the river basins which are currently experiencing a particularly stressful ecological situation, are the basins of the Volga, Yenisei, Ob', and Amur rivers.[44] The last two are transboundary basins, shared with China, which are of particular relevance for this study.

Thus, to ensure each country's interests and to achieve a proper balance between the developmental needs and ecosystem requirements in the transboundary basins, it is essential to establish a coordinated approach to shared water resources management on the basis of adequate regulatory frameworks and efficient institutions. The history of Sino-Russian cooperation in this field, which will be discussed next, gives some hope for optimism.

History of Sino-Russian Water Cooperation

Sino-Russian relations concerning the utilization of their transboundary waters have a long history, which has evolved through different periods: from very close cooperation in the 1950s to a complete suspension of any contacts in the late 1960 and 70s. Over the past few decades, the diplomatic pendulum has swung back, and bilateral relations between the two countries have significantly improved, especially during the last 20 years.

In August 1956, the two countries agreed to examine the economic, and especially hydropower, potential of their boundary rivers, the Amur and Argun.[45] This was an ambitious attempt to jointly appraise available natural resources, primarily water, with a view toward their future development. The ultimate objective of this exercise was to determine the economic efficiency of the comprehensive ("complex") utilization of natural resources and production forces of the basin for the benefit of the two states, with a special emphasis on the hydropower potential of the Amur and its main tributaries. It focused, in particular, on the construction of dams and reservoirs in order to improve navigation and regulate water flow for flood control, as well as irrigation, and enhancement of fisheries.

By 1962, a significant volume of hydrological and geological studies had been completed and a number of proposals were formulated on how better to utilize the boundary rivers and their resources. One grand idea was to connect the Amur with the Sea of Japan via the Ussuri and Songacha rivers and Lake Khanka. In the early 1950s, the two countries simultaneously carried out related feasibility studies, which were merged later into a single project (approved in 1957) to construct a navigation route, including a hydropower station with locks, from the Amur River to Amur Bay[46] in the Sea of Japan. In total, different development plans for the Amur Basin, which had been put forward during the period of 1930-1960s, proposed the construction of up to 32 dams and reservoirs on the main stem of the river and its tributaries.

The work on the Scheme was interrupted as a result of a fall-out between the two states and was resumed only 20 years later. During the period of the political freeze, the Soviet academic community and the public voiced their opinions opposing the construction of dams on the main watercourse. This position was supported by the Interagency Coordination Conference on the Amur Basin development, which was convened in 1958. It was acknowledged

generally that the plans, if implemented, would cause the inundation of flood plains and of significant areas of forest and agricultural lands, numerous settlements, and mineral deposits; 75 per cent of the inundated territory would be located in the Russian part of the Amur Basin.

In 1986, with the onset of the Sino-Russian "thaw," the local authorities of the Amur Oblast' (region) called on the Soviet government to consider building at least one hydropower station together with China to better control periodic devastating floods on the watercourse. A Joint Commission was established to lead the work on the Scheme of the comprehensive utilization of the water resources.[47] The Commission considered several options for the proposed hydro-power development, involving the construction of a number of dams on the river. By 1990 the two sides reached a tentative decision to build a dam on the Amur main stem below the confluence with the Shilka River. But the expected formal approval of the project never happened, partly due to the opposition to the development by the local population in Russia. After the break-up of the Soviet Union, Russia proposed in 1994 to postpone the project until 2010-2013. However, at present the opposition to the project remains strong, and the decision on its future is yet to be made.[48]

In 2004, following the conclusion of the bilateral Treaty of Good-Neighborliness,[49] the two countries adopted a comprehensive Plan for its implementation.[50] They pledged, among other things, to step up their cooperation with respect to the joint monitoring of water quality in transboundary rivers and to develop an international agreement in this area; to boost their activities within the Joint environmental working group, including, in particular, joint monitoring of transboundary pollution, cross-border protected areas, and further improvement of the network of nature reserves on the regional level; to increase consultations on joint measures to improve the hydrological situation in the region of Khabarovsk; and to enhance cooperation for the conservation and management of aquatic living resources in regional and global organizations.

It is important to note that the regional policy documents reflect the need for transboundary cooperation in the water and environmental fields. Thus, the Strategy of the Social and Economic Development of Khabarovsky Kray (January 2009) envisages "addressing… transboundary pollution of the Amur-Heilong River."[51] China has been implementing a US$ 1.9 billion program for the environmental remediation of the Sungari River, the largest Amur-Heilong tributary, with no comparable measures being undertaken on the Russian side.

Current State of and Challenges to Cooperation

At present, Sino-Russian water cooperation appears to be quite limited in scope. It is focused primarily on the joint monitoring of transboundary water quality and emergency response measures, which fall far short of the joint management concept, which had been at the heart of cooperative efforts in the 1950s and 60s. Additionally, bilateral cooperation has "migrated" toward the inter-regional level, which involves the neighboring provinces and regions of Russia and China. The Program of inter-regional cooperation was approved by the leaders of the two countries in September 2009.[52]

However, this level of cooperation is insufficient in view of the magnitude and complexity of the environmental and water utilization problems facing both states. According to one recent report published in Russia by the WWF, "it is quite clear that the issue of transboundary water resource management or, more broadly, natural resource management is seen … as one of the largest, if not the largest, environmental challenge for the years to come."[53] This was demonstrated, in particular, by the unprecedentedly powerful and protracted flooding in the Amur (Heilongjiang) basin in August-September 2013, which seriously affected the adjacent regions of the Russian Far East and China.[54] The worst flooding in 120 years will cost the two countries billions of dollars in damages and economic losses.

It is asserted, and not without grounds, that inadequate enforcement of domestic water protection laws and ineffective transboundary organizations plague proper management of the Amur (Heilongjiang) basin.[55] Thus, in principle, the two states should aim at developing a more integrated approach to managing their shared water resources and utilizing them in an optimal and sustainable manner in order to achieve maximum benefits, while ensuring their adequate protection. This is the principal challenge which can be addressed by the two countries only through cooperative efforts on the basis of compromise, taking into account each other's interests. This in itself may be somewhat challenging, since China is rather reluctant to make concessions with respect to what it perceives as its sovereign right to use transboundary waters within its territory. China's traditional emphasis on sovereignty as the main pillar of its economic and foreign policy manifests itself in different fora and settings, including negotiations and arrangements on international watercourses.[56]

While "sovereignty" is and will remain in the foreseeable future one of the fundamental precepts of interstate relations, this is not an absolute notion, es-

pecially where there are potential transboundary implications of one state's activities within its territory for its neighbors. It is a well-established principle of international law that states have "the sovereign right to exploit their own resources pursuant to their own environmental and developmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other states or of areas beyond the limits of national jurisdiction."[57]

What constitutes the state's core interests, and how to reconcile the economic priorities with environmental imperatives and transboundary effects, must be decided and resolved in the context of applicable international principles and norms. International law, especially in the area of development and environment, is sufficiently mature and provides a matrix of cooperative approaches and guidelines that can be used by states in managing their shared resources. In the Wang Tieya lectures, Ian Brownlie reflected on the purpose of international law, suggesting that it "provides the practical rounding out of the principles of peaceful co-existence."[58]

Along with sovereignty, peaceful co-existence has always been regarded as a mainstay of the Chinese, as well as Asian, approach to international relations. In observations on China's foreign policy, Xue Hanqin remarked: "China pursues an independent foreign policy of peace and promotes equal and mutually beneficial cooperation for common development … China is now fully engaged in international affairs. Either for security issues or for development matters, it attaches importance to the role of international institutions and the rule of law in international affairs."[59]

There is, however, another political challenge, which has been revealed in the context of Chinese involvement in water-related cooperation. One can easily detect China's aversion to a multilateral approach to managing international watercourses, where more than just two states are concerned, and its clear preference for bilateral interactions and arrangements. It can be noted that China has about 50 agreements regarding its shared waters, all of which are bilateral, despite the fact that many of them relate to multi-state basins.[60] This was reflected in the official position of China in the UN General Assembly concerning the law of international watercourses, whereby it reserved its "right to address the question of the non-navigational uses of international watercourses with its neighbors in a fair and reasonable manner and in accordance with relevant international practice and *with bilateral watercourse agreements*"[61] (emphasis added).

While studies on the Asian traditions in managing shared natural re-

sources offer somewhat ambivalent assumptions,[62] these insights provide the context for the evolving bilateral cooperation between China and Russia regarding their transboundary waters. Thus, most of the water-related activities have been carried out in various institutional mechanisms formed at the interstate level mainly during the last two decades and involving joint commissions and working groups. These are established by and function within different, mainly bilateral, legal frameworks with a view to enhancing cooperation in jointly managing their shared natural resources and ecosystems, which will be discussed in the following section.

The Use and Management of Sino-Russian Transboundary Waters: An International Legal Perspective

This section begins with a summary of the legal foundations for cooperation in the development and management of Sino-Russian shared water resources, which is useful as a background for the more detailed examination of the relevant legal practice that follows later.

Principle of Cooperation in International Watercourses Law

International water law is based on three fundamental precepts—a duty of equitable and reasonable utilization, an obligation to prevent causing significant harm to other states, and cooperation. According to Stephen McCaffrey, "the fundamental importance of cooperation between riparian states is the inevitable result of the fact that an international watercourse is a shared natural resource."[63] The notion that the duty to cooperate is at the heart of the fair and beneficial use of transboundary watercourses by all riparian states is not new. This was acknowledged in Herbert Smith's classic on international water law published in the early twentieth century:

> The first principle is that every river system is naturally an indivisible physical unit, and that as such it should be so developed as to render the greatest possible service to the whole human community which it serves, whether or not that community is divided into two or more political jurisdictions. It is the positive duty of every government concerned to cooperate to the extent of its power in promoting this development.[64]

International practice overwhelmingly supports the fundamental importance of the principle of cooperation, which is reflected in numerous international treaties, decisions of international courts and tribunals, declarations and resolutions adopted by intergovernmental organizations, conferences and meetings, and studies by intergovernmental and non-governmental organizations. A strong assertion of the significance of cooperation with regard to shared waters is contained in Principle XII of the European Water Charter, adopted by the Committee of Ministers of the Council of Europe as early as

1967, which declares: "Water knows no frontiers; as a common resource it demands international co-operation."[65]

Cooperation in international water resources management is achieved in a number of ways, through formal and informal arrangements and practices, which will be reviewed below. This will be done firstly in the context of multilateral cooperation—both Russia and China are parties to several multilateral treaties that are relevant to their transboundary water resources. The focus will then shift to China and Russia bilateral treaty practice, including a number of specific water-related agreements.

At the global level, recent studies on transboundary water resources management have explored the challenges and opportunities for enhancing cooperation across international boundaries.[66] The role of adequate legal frameworks, especially where institutional mechanisms have been established, is particularly essential in ensuring properly functioning and efficient cooperation.

The duty to cooperate is anchored in the 1997 UN Convention on the Law of the Non-Navigational Uses of International Watercourses (hereinafter UNWC),[67] where it provides the bridge between the substantive and procedural rules codified and progressively developed by the UN International Law Commission (ILC). Under the UNWC, watercourse states are required to "cooperate on the basis of sovereign equality, territorial integrity and mutual benefit in order to attain optimal utilization and adequate protection of an international watercourse."[68] In its commentary to this provision in the 1994 Draft, the ILC explains: "Cooperation between watercourse states with regard to their utilization of an international watercourse is an important basis for the attainment and maintenance of an equitable allocation of the uses and benefits of the watercourse and for the smooth functioning of the procedural rules."[69] The duty to cooperate is central to the Convention, finding expression in its various provisions and providing the platform for specific watercourses legal frameworks.[70]

The UNWC was adopted by the UN General Assembly Resolution 51/229, which garnered 104 votes in support, including Russia.[71] At present, the Convention has been ratified or accepted by 30 states.[72] Although China was among the only three states (together with Turkey and Burundi) that voted against the resolution, it endorsed the primacy of the rule of equitable and reasonable use during the discussions in the UN Sixth (Legal) Committee related to the Draft Articles.[73] However, with respect to the draft convention as a whole the Chinese position was much less sympathetic. Its principal objec-

tions were reflected in the statement made by the representative of China in the UN General Assembly.[74] According to this statement, the draft convention "failed to reflect general agreement among all countries,"[75] although it is not clear how this agreement should look like given a great diversity of viewpoints of the states concerned. More specifically, the Chinese representative opined that the text did not reflect the principle of the "*territorial sovereignty of a watercourse State* [emphasis added]." "Such a State had undisputable sovereignty over a watercourse which flowed through its territory."[76] The statement asserts further, that there was an imbalance between the rights and obligations of the upstream and downstream states. However, no explanation as to the nature of the alleged imbalance was offered.

China, together with a few other states,[77] was particularly opposed to provisions "on the mandatory settlement of disputes." In the words of its representative, China "favoured the settlement of all disputes through peaceful negotiations."[78] One can question whether the dispute resolution procedure is indeed as "mandatory" as is sometimes alleged. Reference of the dispute to a fact-finding commission, provided for in Article 33 of UNWC, does not entail any obligatory decision. According to one authority, "the Convention's provisions on fact-finding should be non-threatening to states … The report of the fact-finding commission envisaged in Article 33 is not binding on the states concerned, but may be of assistance to them in resolving their dispute."[79] However, the Chinese preference for negotiations as the principal (if not the only) means of dispute settlement is well-known and is reflected in its transboundary water agreements. Although China fully adheres to the principle of the peaceful resolution of disputes, how this plays out in practice in the transboundary water context remains to be seen.[80]

It must be noted that at present neither Russia nor China participate in the UNWC. This does not mean, however, that the Convention is irrelevant. On the contrary, its key provisions reflect established state practice and can be viewed as customary international law, for example, legal rules that are binding on all states irrespective of their participation in the Convention. Notwithstanding the alleged inadequacies of the UNWC, Chinese treaty practice demonstrates that, on the whole, it endorses the principal provisions of the Convention. As will be shown in this paper, a number of its substantive and procedural rules can be found in numerous bilateral water agreements concluded by China. While the UNWC is not yet in force and none of China's neighbors participate in it, there is another general agreement which has the potential to become relevant to Sino-Russian relations concerning their trans-

boundary waters.

The UNECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes (hereinafter UNECE TWC)[81] provides an example of how a regional legal framework, especially when assisted by a well-developed institutional mechanism, can bolster cooperation at regional and global levels. This instrument is aimed at limiting transboundary impact, mostly resulting from pollution, in all transboundary basins in the UNECE area.[82] The Convention was endorsed by close to 40 states including Russia.[83] China, which is not a member of the UNECE, is not a party to this treaty. However, it has finally been opened for universal accession (from February 2013),[84] which means that any state outside the European region, including China, may join it.

The conventional regime is supported institutionally by the Meeting of the Parties, Secretariat, and a number of subsidiary bodies. Its participants are urged to "cooperate on the basis of equality and reciprocity, in particular through bilateral and multilateral agreements, in order to develop harmonized policies, programmes and strategies covering the relevant catchment areas, or parts thereof, aimed at the prevention, control and reduction of transboundary impact and aimed at the protection of the environment of transboundary waters or the environment influenced by such waters, including the marine environment" (Article 2, para. 6).

The UNECE TWC encourages and supports river basin and transboundary cooperation in the Pan-European (including Central Asia) region. Being a framework document, the Convention provides a set of basic obligations and general guidelines, which must be operationalized through watercourse-specific agreements to be concluded by the states sharing the same watercourse. Again, as will be shown in this paper, the bilateral treaty practice of China is generally consistent with the norms of the UNECE TWC. Given the prominence of the regime established by the Convention, its subsidiary instruments (protocols and guidelines) and institutions, it may be prudent for China to examine carefully the UNECE TWC practice and its possible applicability within the Sino-Russian transboundary context.

The next part of this paper will review and analyze the corpus of normative provisions which govern Sino-Russian transboundary water cooperation. These provisions can be found in some multilateral treaties, which will be discussed further, and numerous bilateral instruments related to water resources, environment, and biodiversity concluded by China and Russia.

Multilateral Environmental Agreements Relevant to Sino-Russian Transboundary Waters

China and Russia are parties to a number of multilateral environmental treaties that are relevant to the management of their transboundary water resources. Among the multilateral treaties directly applicable to water cooperation between Russia and China, the most important are two global conventions: the Convention on Wetlands of International Importance, known as the Ramsar Convention,[85] and the Convention on Biological Diversity.[86] These multilateral treaties provide a platform for collaboration in a number of areas that relate directly to the management of transboundary water resources.[87]

The 1971 Ramsar Convention establishes a general legal framework for national action and international cooperation in the conservation and wise use of wetlands and their resources. The "wise use" concept, as applied to wetlands, is defined as "the maintenance of their ecological character, achieved through the implementation of ecosystem approaches, within the context of sustainable development."[88] Wetlands perform important ecosystem functions, such as flood and erosion control, retention of nutrients, sediments, and pollutants,[89] all of which are conducive to the protection of water resources and preservation of aquatic ecosystems.[90] The Ramsar Convention has recognized and responded to the need to manage wetlands as part of river basins. Thus, the ecological status of watercourses greatly depends upon and can be improved as a result of the sustainable management of wetlands, which, under the Ramsar Convention, must be achieved *inter alia* through their inclusion in the List of Wetlands of International Importance (Ramsar List).[91]

The main duty of the Ramsar states is to designate suitable wetlands for their inclusion in the List, to ensure their effective management, and to cooperate internationally concerning, among other things, "development projects that may affect wetlands." There are several sites within the shared river basins, both in Russia (in Amur Oblast, and Khabarovsk and Primorski Krai)[92] and in China (in Heilongjiang and Inner Mongolia).[93] For example, the Khingano-Arkharinskaya Lowland Nature Reserve in Russia, which is located close to the Chinese border, is a unique wet forest-steppe (prairie) ecosystem set in the Amur River Valley. The site includes vast floodplains with rain-fed rivers, islands, beaches, levee systems, oxbow lakes, and marshes.[94]

While this and other protected areas belong to the basins of the two states' boundary rivers, they are located entirely within the territory of one or another country. Nonetheless, Article 5 of the Ramsar Convention explicitly requires that the parties consult with each other about implementing their obligations

"where a water system is shared."[95] The Ramsar "Guidelines on international cooperation" elucidate further: "In this area of shared river basins Contracting Parties should, where appropriate, seek to harmonize their implementation of Article 5 of the Ramsar Convention with obligations arising from any watercourse agreements to which they may also be signatories."[96]

In line with this obligation, Russia proposed in 2008 the Amur Regional Initiative under the Ramsar Convention in order to promote international cooperation in conservation and sustainable use of the Amur basin ecosystems. The Initiative involves China, Mongolia, and Russia, and could possibly include their neighbors.[97] It envisages the development of a joint strategy on the conservation and sustainable use of the Amur River ecosystems; coordination of the strategy implementation by a common secretariat; a joint search for funds for implementation of projects; and more effective use of results of earlier projects.[98]

The same provision of Article 5 of the Ramsar Convention demands that the states concerned consult also "in the case of wetlands extending over the territories of more than one Contracting Party."[99] There is one genuinely transboundary protected area, which traverses the Sino-Russian boundary—Lake Khanka (Xingkai). The lake is the source of the Songacha River and is part of the Amur catchment area. It comprises two nature reserves, both Ramsar listed, on either side of the boundary and is governed by a special agreement: Agreement on the Natural Reserve "Lake Khanka/Xingkai" (hereinafter Lake Khanka Agreement)[100] concluded in 1996. The Agreement includes, among its objectives, the protection of ecosystems within the conservation area, and the facilitation of bilateral cooperation in the rational utilization of natural resources (Article 2). In order to achieve these aims, a Joint Commission was set up to coordinate activities within the conservation area. It is worth noting here that while the Agreement establishes a truly bilateral nature reserve, the latter is not included on the Ramsar List of transboundary sites.[101]

Russia and China cooperate within the 1992 Convention on Biological Diversity[102] (hereinafter CBD), which is the principal global instrument in the area of ecosystem protection. There is a considerable degree of complementarity between its objectives[103] and the ultimate goal of bilateral water cooperation—which is the protection and adequate management of transboundary water resources. The scope of the CBD clearly includes "aquatic ecosystems."[104]

The main pillar of the treaty is its Article 3, which is a verbatim reproduction of Principle 21 of the Stockholm Declaration.[105] This fundamental principle of environmental law is equally valid with respect to the use of aquatic

ecosystems in a transboundary context.[106] Additionally, Article 5 imposes a duty to cooperate "directly or, where appropriate, through competent international organizations … on other matters of mutual interest, for the conservation and sustainable use of biological diversity."[107]

More specifically, the CBD provides for *in-situ* conservation, including: "a system of protected areas or areas where special measures need to be taken to conserve biological diversity," and "environmentally sound and sustainable development in areas adjacent to protected areas" (Article 7). Contracting parties are required to "(a) Integrate consideration of the conservation and sustainable use of biological resources into national decision-making; [and] (b) Adopt measures relating to the use of biological resources to avoid or minimize adverse impacts on biological diversity" (Article 10).[108]

There are a number of essential procedural provisions designed to facilitate the implementation of the conventional obligations set forth in the CBD, such as Environmental Impact Assessment (EIA).[109]One procedural requirement explicitly relates to activities "which are likely to significantly affect adversely the biological diversity of other states." In this regard, the parties must, as far as possible and as appropriate, "promote, on the basis of reciprocity, notification, exchange of information and consultation on [such activities], by encouraging the conclusion of bilateral, regional or multilateral arrangements" (Article 14, para. 1 (c)). Each party also has a duty "in the case of imminent or grave danger or damage, originating under its jurisdiction or control, to biological diversity within the area under jurisdiction of other states … to notify immediately the potentially affected states of such danger or damage, as well as initiate action to prevent or minimize such danger or damage" (Article 14, para. 1(d)).

It was submitted in one commentary that "although the CBD recognizes the need for international cooperation in its implementation, that convention lacks appropriate provisions dealing specifically with the rights and duties of co-basin states for sharing waters equitably and sustainably. This is a regulatory gap that will eventually need to be addressed by CBD Parties if they are serious about achieving the goal of conserving inland water biodiversity in transboundary water systems."[110] However, this criticism seems somewhat misplaced. The CBD was not designed to deal specifically with transboundary watercourses and their ecosystems; these issues should be left to water-related conventions, such as the 1992 UNECE TWC and 1997 UNWC and basin-specific agreements. On the other hand, the evolving conventional regime never ignored issues of "inland water biodiversity," including in shared river

basins. This follows from the relevant decisions of the Conference of the Parties,[111] and from the CBD close collaboration with the Ramsar Convention on such issues as managing biodiversity, wetlands, and river basins.[112]

In any event, the CBD, even in its current form of a general legal framework, provides a set of fundamental substantive and procedural rules, which its parties sharing the same watercourse must observe. This broad framework has a very convenient companion in a more pragmatic instrument, the Ramsar Convention, which has evolved into an effective applied mechanism of ecosystem protection. The fact that China and Russia actively engaged with both instruments should be viewed as an important stimulus to cooperate with respect to their shared water systems. This statement is particularly true in the case of the Ramsar Convection, which serves as a convenient umbrella for bilateral initiatives and projects.[113]

Sino-Russian Transboundary Water Cooperation: Examining Bilateral Legal Practice

Evolution of the Sino-Russian Regime for Transboundary Waters: Soviet Period

Although China has a number of bilateral water agreements with a few of its neighbors, the majority of them have been concluded with Russia.[114] Almost 80 per cent of the Sino-Russian border is formed by rivers and the two countries have a long history of diplomatic and legal relations with regard to their shared waters.[115] After a relatively short period of hostility, Sino-Russian cooperation has drastically improved over the last two decades.

This process climaxed with the conclusion of the Treaty of Good-Neighborliness in 2001.[116] Such general agreements are indispensable for bilateral cooperation: they form the legal foundation for joint activities in all areas of mutual interest by establishing key principles and institutions of cooperation. The 2001 Treaty was concluded with the expressed "hope of promoting and establishing a just and fair new world order based on universally recognized principles and norms of international laws" and was aimed at enhancing "relations between the two countries to a completely new level" (Preamble). The agreement is a strategic commitment to build cooperation in a number of areas, including environmental protection and the fair and rational use of shared natural resources. Sino-Russian relations have been evolving also through a series of high-level meetings between their leaders.

Numerous legal and institutional arrangements concerning utilization of the common watercourses date back to the 1950s and also constitute part of the overall legal framework of cooperation. On February 14, 1950, the two states—USSR and PRC—signed the Treaty on Friendship, Cooperation, and Mutual Assistance, effective for a fixed 30-year period. Soon after this, Russia and China concluded their first water-related agreements. The two of them established the regime of navigation on the boundary rivers and lakes—the Agreement of 1951[117] and Agreement of 1957.[118] An important step in the area of water resources management was made in 1956, when Russia and China concluded an agreement aimed at jointly examining the economic potential of the Argun and Amur basins.[119] However, its implementation was later suspended and resumed only 30 years later, in 1986, when a new agreement was

signed between the PRC and the USSR.[120] Around that time an Agreement on Cooperation in the Field of Fisheries (hereinafter 1988 Fisheries Agreement)[121] was also adopted. The signing of the 1991 Border Agreement further improved Sino-Russian relations.[122]

Evolution of the Sino-Russian Regime for Transboundary Waters: Post-Soviet Period

With the demise of the Soviet Union, Russia and China continued their cooperation focusing on the conservation of living resources, protection of the environment, and the joint economic use of islands and adjacent aquatic territories. Several bilateral treaties on these issues were concluded: Agreement on Cooperation in the Protection, Regulation and Reproduction of the Living Aquatic Resources in the Boundary Waters of the Rivers of Amur and Ussuri (1994) (hereinafter 1994 Living Aquatic Resources Agreement),[123] Agreement on Cooperation in the Field of the Protection of the Environment (hereinafter 1994 Environmental Agreement),[124] Agreement on the Guiding Principles of the Joint Economic Use of Certain Islands and Adjacent Aquatic Areas of the Boundary Rivers (hereinafter 1997 Agreement on the Guiding Principles of the Joint Use),[125] and Agreement on the Joint Economic Use of Certain Islands and Adjacent Aquatic Areas of the Boundary Rivers (hereinafter 1999 Joint Use Agreement).[126] In 1999, the two countries agreed to review their Soviet-era treaties, including those concerning boundary rivers, most of which remain in force.[127]

Following the conclusion of the 2001 Treaty of Good-Neighborliness, the two states adopted a comprehensive plan for its implementation.[128] Under the environmental section, the two sides committed to jointly monitor water quality in transboundary waters, to work on the conclusion of a transboundary waters agreement, to cooperate within the joint environmental working group *inter alia* on the monitoring of transboundary water pollution, to expedite expert consultations on the improvement of the hydrological situation around the city of Khabarovsk, and to strengthen cooperation within regional and global organizations in the conservation and management of aquatic living resources. Practically all of the agreed activities have been implemented. Of particular importance in this respect was the work on a binding instrument that deals specifically with transboundary water resources.

An attempt to conclude a water treaty was made in the early 1990s. In 1997, a draft prepared by the Russian Ministry of Natural Resources was

submitted to its Chinese counterpart.[129] However, negotiations proceeded without much urgency; it took another 10 years before they were successfully concluded. This was spurred by the rapid economic development in China, and, in particular, serious accidents involving transboundary pollution. The latter in particular emphasized the need for a set of concrete rules governing the two countries' water-related activities. In February 2006, in the aftermath of the Sungari River chemical spill, the environmental agencies of the two states signed a Memorandum of Understanding on joint monitoring of transboundary waters.[130] The following year, after several rounds of consultations between Russian and Chinese experts, the text of the draft water treaty was finalized.[131] The Agreement on the Rational Utilization and Protection of Transboundary Waters (hereinafter 2008 Water Agreement) was signed in January 2008.[132]

Sino-Russian treaty practice has evolved from boundary issues and the joint examination of water resources and their development potential to a more comprehensive legal framework that deals with a much broader range of transboundary issues, with an emphasis on pollution prevention and control, and resource utilization. This framework is supplemented by regulations contained in the recent Additional Agreement on the Russian-Chinese State Boundary[133] and Agreement on the Regime of the Russian-Chinese State Boundary (hereinafter 2006 Boundary Regime Agreement).[134] Thus, one may conclude that there exists now a considerable body of treaty norms which directly or implicitly relate to various uses of the two countries' shared water resources.

The 2001 Treaty of Good-Neighborliness provides the legal basis for water and environmental cooperation. In the context of this study the key obligation is articulated in Article 19, which provides: "the Contracting Parties shall cooperate in the protection and improvement of the environment, prevention of transboundary pollution, *equitable and reasonable utilization of the boundary watercourses* and the living resources in the Northern Pacific and *the basins of the boundary rivers* [emphasis added]; undertake joint efforts in protecting rare species of flora, fauna and the natural ecosystems in the border areas, as well as cooperate in preventing emergencies of the natural and technogenic character in both states and eliminating their consequences."[135]

This general provision of the 2001 Treaty is operationalized through specific environment- and water-related agreements already mentioned above. The 1994 Environmental Agreement considers water as a key component of the natural environment, and most of the treaty's provisions apply to water

resources. For example, it includes among the main areas of cooperation "protection and comprehensive utilization of water resources with due account of pollution of transboundary watercourses."[136] It also encourages joint activities aimed at developing "systems of purification and treatment from pollution of surface and ground waters," "methods and means of analysis and assessment of the status of water bodies," and "environmental norms, rules and standards governing utilization of natural resources and protection of the environment." However, the Environmental Agreement as such is a programmatic document; it has very few normative provisions establishing concrete substantive or procedural rights and obligations (apart from its institutional mechanism, which will be discussed further below).

The 2006 Boundary Regime Agreement has a special section (Chapter Four) entitled "Boundary Waters," which is of direct relevance here.[137] Seven articles of Chapter Four cover a wide range of issues that may arise in the context of exploitation of boundary waters, their living resources and adjacent land territories: from navigation, fisheries, and timber floating to maintenance of hydraulic installations and agricultural activities. These provisions will be analyzed in more detail later.

The 2008 Water Agreement is at the core of the normative framework governing Sino-Russian relations in the area of transboundary waters.[138] The Water Agreement is a typical framework treaty, similar to the 1994 Environmental Agreement, and as such does not offer more than a general set of programmatic provisions. It has 10 articles which define its scope of application, main areas of cooperation, some substantive and procedural obligations, institutional arrangements, and dispute settlement procedure, all of which will be discussed in more detail in the next section of this paper.

There are various water-related provisions in agreements regulating the exploitation of aquatic living resources and other economic activities on frontier waters. The 1988 Soviet-Chinese Fisheries Agreement addresses general issues of bilateral cooperation in the field of "conservation, rational management and optimal use of the living resources of the North Pacific Ocean and adjacent boundary rivers and lakes," [139] but does not deal with fresh waters as such. The 1994 Living Aquatic Resources Agreement, on the contrary, focuses specifically on transboundary waters according to its objective to ensure "rational utilization of the living aquatic resources of the Amur and Ussuri river basins."[140] While the Agreement provides both a general legal framework for aquatic living resources and detailed regulations for their conservation and exploitation, some of its provisions explicitly apply to water.

In 1997 and 1999, Russia and China adopted two intergovernmental agreements aimed at establishing a special regime for some recently delimited frontier areas (islands and surrounding stretches of boundary rivers), where the local populations of the two states can engage in traditional economic activities. Both agreements require the "frontier population" of the two countries to avoid causing any damage to the environment and natural resources of the respective states. [141]

Other bilateral instruments, mostly related to trade and commercial navigation on the boundary rivers, will not be discussed in this paper. However, even without the latter documents, the existing legal framework for the utilization of the shared water resources is impressive. The normative foundation of bilateral cooperation has been strengthened also by non-binding but authoritative commitments contained in declarations and joint statements periodically adopted by the leaders of the two states.[142] Invariably these documents include provisions aimed at strengthening interstate collaboration in the area of water utilization and environmental protection.[143] For instance, in their Joint Declaration of March 21, 2006,[144] the leaders of the two states agreed to the need to galvanize joint efforts in the field of environmental protection in the boundary areas with the aim of preventing technogenic catastrophes and to minimize harm to nature and peoples on both sides of the boundary—ranging from possible accidents to natural disasters. They pledged to expedite consultations with regard to draft intergovernmental agreement on transboundary waters.

More practically oriented measures and decisions are adopted usually within the regular (annual) meetings of the heads of governments. This aspect of bilateral cooperation will be discussed later in the section dealing with the institutional framework.

The Sino-Russian Regime for Transboundary Waters: A Legal Analysis

This part of the paper examines and analyzes the present legal regime governing Sino-Russian transboundary waters.[145] Regime theory defines international regimes as a set of "implicit or explicit principles, norms, rules and decision-making procedures around which actors' expectations converge in a given area of international relations."[146] Viewed through this approach, a transboundary water regime can be considered to exist where the states concerned "observe a set of rules designed to reduce conflict caused by use, pollution or division of a water resource … and the observance over time of these rules."[147]

Through the prism of these definitions one can scrutinize the developing Sino-Russian normative framework and institutions and evaluate their effectiveness. Is the legal regime in place fit-for-purpose—that is, does it achieve proper management and sustainable use of the shared water resources? The adequacy of the regime will be assessed in terms of its formal coherence, consistency, and consonance with modern international practice. However, the real measure of success of any transboundary water regime should include consideration also of the concrete results on the ground, such as improved water resource management, reduced transboundary pollution, improved water quality, and improved status of aquatic ecosystems and the living resources dependent upon them. While the actual impact of the existing Sino-Russian bilateral regime is difficult to assess, it is still possible to review and examine its actual operation and determine how this practice contributes (or not) to achieving the regime's objectives. This assessment will be undertaken following, first, a "formal" (juridical) evaluation of the regime, which will proceed on the basis of a structured methodology, developed by the authors in their earlier works.[148]

The legal review, where appropriate, will use as a benchmark the most relevant provisions of the two principal universal treaties in this area—the 1997 UNWC[149] and the 1992 UNECE TWC.[150] Occasionally, a comparative analysis will also be employed by juxtaposing the Sino-Russian regulatory regime with relevant normative frameworks for transboundary water resources which exist between these two countries and their immediate neighbors—Mongolia and Kazakhstan.

The legal analytical framework below will help to identify the key ele-

ments of the transboundary water regime:

- Its objectives as well as territorial and functional scope (i.e. geographical area of application, categories of water resources governed by the regime and/or types of their uses);
- Substantive rules (those provisions that establish material rights and obligations of the parties);
- Procedural rules (means and procedures established to enable the application of the substantive rules and provide the rules of the game for management of the regime);
- Mechanisms of dispute settlement (special procedures aimed at preventing and resolving conflicts and controversies between the parties); and
- Institutional mechanisms (i.e. permanent bodies/administrations created to facilitate cooperation between the parties).

Objectives and Scope

The objectives of the transboundary watercourse regime can be identified by examining the key legal instrument at the heart of it—the 2008 Water Agreement—and relevant environmental and ecosystem instruments. It is worth noting that the aims of each of these Sino-Russian legal documents are not explicitly stated (contrary to usual treaty practice in this field) but must be ascertained primarily from their titles and preambular provisions. These objectives include: "rational utilization and protection of transboundary waters" (2008 Water Agreement); "further development of the Sino-Russian relations of strategic partnership and interaction"; and "friendly consultations and adoption of coordinated measures, facilitating utilization and protection of transboundary waters" (Preamble, 2008 Water Agreement). One can add, among other objectives of the regime: to use "relations in the environmental field as additional conditions of trust between the Parties and their peoples" and to achieve "mutual understanding in the utilization of natural resources and resolution of ecological problems" (Preamble, 1994 Environmental Agreement); and "rational utilization of living aquatic resources of the river basins of Amur and Ussuri" (Preamble, 1994 Living Aquatic Resources Agreement). Thus, while the specific objectives of the Sino-Russian transboundary waters regime are self-explanatory, there is an overarching political goal as well—to use water and environmental cooperation as a means of enhancing "strategic partnership" and "trust" between the two states.

Unlike its objectives, the scope of the regime is somewhat confusing and inconsistent across the bilateral treaties studied here. The 2008 Water Agreement determines its sphere of application as "transboundary waters, which are understood as rivers, lakes, streams, and marshes, located on the boundary [between the Russian Federation and China] or crossing this boundary" (Article 1). At the same time, the 2006 Boundary Regime Agreement uses the term "boundary waters," defined therein as "rivers, lakes and other water bodies which are crossed by the State boundary" (Article 1). While at first glance there appears to be little difference between the usage of the treaty terms "transboundary" and "boundary" waters, such inconsistent terminology may cause problems in determining the precise geographical area of the regime application—that is, whether it should apply also to activities and impacts within the entire basins, including tributaries. By way of comparison, the UNECE TWC defines "transboundary waters" as "any surface or *ground waters* [emphasis added] which mark, cross or are located on boundaries between two or more states" (Article 1). While this definition is reminiscent of those contained in the Sino-Russian agreements, a contextual interpretation of the definition "transboundary waters" in the UNECE TWC, in conjunction with its other relevant provisions and agreements adopted on its basis, provides an inclusive approach that would cover the entire hydrographic basin.

Another visible feature of existing Sino-Russian agreements is the lack of any reference to transboundary ground waters, contrary to established international treaty practice, which tends to expressly include ground waters in any such definitions.[151] For example, under the much earlier 1995 Russian-Mongolian Water Agreement (Article 1)[152] the term "transboundary waters" includes "rivers, streams, and other surface bodies of water, as well as *ground water deposits* [emphasis added]." A similar definition is contained in a recently adopted Water Agreement between Russia and Kazakhstan.[153] It is noteworthy that the initial draft agreement, which was prepared by Russia in 1997, included ground waters in its definition of transboundary waters.[154]

Ground waters constitute a substantial, if not essential, part of the water resources shared by Russia and China. They are especially important when considered in the light of constantly growing developmental needs, particularly in the water deficit regions. Given that the two countries' boundaries cross a number of aquifers, including those connected with surface waters, the lack of legal clarity on this issue is problematic. Equally, the spatial limits of the legal regime remain uncertain, which is not helpful, especially in view of the advent of the concept of integrated management of water resources

(IWRM), which is placed at the heart of all contemporary water regimes.[155] According to Agenda 21, "integrated water resources management, including the integration of land- and water-related aspects, should be carried out at the level of the catchment basin or sub-basin."[156] Along similar lines, Principle 1 of the 1992 Dublin Statement provides that, "since water sustains life, effective management of water resources demands a holistic approach ... *Effective management links land and water uses across the whole of a catchment area or ground water aquifer* [emphasis added]."[157]

In view of the above, as far as their geographical or hydrological scope is concerned, the Sino-Russian water agreements are vague and imprecise, with notable gaps in coverage and lack of consistency in approach and terminology. They also look rather archaic in their conceptual approaches. On the other hand, there is no evidence so far that their practical implementation has been constrained by the inadequacies related to the legal definition of scope.

As regards its functional application, the Sino-Russian regime appears to cover a wide range of water-related issues—from navigation and exploitation of living resources to various economic uses and the protection of aquatic ecosystems and biodiversity. This extensive coverage results from the sheer multitude and diversity of applicable water-related instruments and associated institutional mechanisms established by the two countries over the past few decades. While there is no hierarchy of uses, the existing regime still attempts to strike a balance between various economic activities. For instance, the 2006 Boundary Regime Agreement requires that ships which use the navigable sections of the Argun River proceed at such a speed so as to preclude the erosion of the river banks. Under the same Agreement, fishery activities in the boundary waters are to be limited so as not to interfere with navigational uses. On the whole, there is a general requirement to take necessary measures to protect the aquatic environment from negative impacts of all economic activities, including agricultural uses, which take place in the vicinity of rivers and other transboundary waters.

Substantive Rules

This legal element includes provisions that establish substantive, or material, rights and obligations of states sharing the same watercourse. These rules vary depending upon the purpose and nature of the particular agreement, but they are usually distinguished between "obligations of conduct" and "obligations of result." While the first category is aimed at the behavior of states (i.e. to behave in conformity with a particular standard of conduct), the second requires

specific outcomes (usually demanding certain practical steps in order to achieve an agreed objective). "Framework" instruments, such as the 2008 Water Agreement, mostly impose obligations of conduct, thus establishing parameters of lawful, or permissible, behavior of their participants. On the other hand, obligations of result are primarily a feature of more specific instruments aimed at achieving concrete goals, such as eliminating or reducing pollution to a certain level, attaining a water quality objective, or allocating agreed volumes of water or benefits of water utilization between the parties.[158] The majority of water treaties contain both types of provisions.

Most of the recent water agreements invariably contain among their substantive rules the fundamental principle of "equitable and reasonable utilization," a due diligence obligation not to cause significant harm, and an obligation to protect transboundary waters and their ecosystems. The Sino-Russian water regime generally follows this pattern. For instance, the Preamble of the 2008 Water Agreement provides a reference to the "principles of peaceful coexistence, mutual understanding, *equitable and reasonable utilization and protection* [emphasis added] of transboundary waters taking into account economic, social and demographic factors."[159] While this list of factors—economic, social, and demographic—is not as broad as that of the 1997 UNWC, this formula nevertheless reflects the parties' awareness of the essence and status of the equitable and reasonable use principle. This is also indicative of the weight and importance given to these factors by the two states in comparison with other relevant factors that might pertain to the watercourse. Whereas the climatic and other natural conditions as well as availability of water resources are not yet a matter of concern, the economic and demographic factors most definitely are a key issue. In the same vein, the Preamble of the 2008 Agreement reflects the parties' recognition of the "equal importance of utilization and protection of transboundary waters and their inseparable interdependence."

However, there is a slight problem which lies in the questionable normative nature of the reference to the principle of equitable use as a preambular paragraph rather than as a formal provision of the Agreement, which is the more accepted legal practice in this field. It is generally acknowledged that "sometimes the preamble contains what are essentially political statements" and that the preamble is often used as "a convenient repository for remnants of clauses, large and small, which were lost during the negotiating process."[160] The 1994 Sino-Mongolian Water Agreement, for example, includes this principle in its main text.[161] Without question, it is always preferable to have the principal provisions unequivocally spelled out as mandatory rules, since the

value of the preamble is limited compared with the rest of the Agreement. On the other hand, this flaw of the 2008 Sino-Russian Water Agreement is not as serious as it may seem at first glance. Firstly, the preamble is still "part of the context of the treaty for the purposes of interpretation, including for determining the object and purpose of the treaty."[162] Secondly, the principle of equitable use has already achieved the status of a legally binding norm of customary international law and as such does not necessarily require additional endorsement in a bilateral treaty.

One recurrent theme of the 2008 Sino-Russian Water Agreement is the parties' commitment "to develop and adopt necessary measures aimed at preventing and reducing transboundary impact on transboundary waters." While references to "transboundary impact" or "significant transboundary impact" can be found in its various provisions (e.g., Articles 2, 4, and 7), the Agreement fails to provide any definition of this term,[163] which makes it susceptible to conflicting interpretations, if and when such an issue arises. It is worth noting here that the Joint Commission, established by the Agreement, was asked, among other issues, to "examine the means of analysis and assessment of significant transboundary impact caused as a result of emergency, and on this basis to develop measures of assistance to the party affected by transboundary impact" (Article 4, para. 3.4).[164]

This leads us to another key substantive provision of the 2008 Sino-Russian Water Agreement consonant with the "no significant harm" rule—an established principle of international law, embodied in the 1997 UNWC and in numerous other international water treaties. The 2008 Water Agreement requires the two states "to take all necessary measures to prevent significant harm, caused by transboundary impact." If such significant harm nevertheless is caused, the party of the origin of transboundary impact must, in consultation with the affected party, take all necessary measures to minimize such harm (Article 7, paras. 2 and 3).[165] Although this provision looks like an abbreviated combined version of Article 7 of the UNWC[166] and Article 2 of the UNECE TWC,[167] its inclusion in a bilateral agreement on transboundary waters is a very positive step. Neither the 1995 Russian-Mongolian Water Agreement[168] nor the two more recent water-related agreements between China and Kazakhstan (of 2001 and of 2010) [169] address the issue of transboundary harm. However, the 2008 Sino-Russian Water Agreement falls short of the requirement of Article 8 of the 2010 Russian-Kazakh Water Agreement, which goes even further by recognizing the responsibility of one party for transboundary harm caused to another and requiring compensation.[170]

The remaining substantive provisions of the 2008 Water Agreement are practical in nature and list specific areas of cooperation. These obligations are included in Article 2 in a rather haphazard and repetitive manner, and are interspersed with various procedural obligations.[171] Nevertheless, certain key commitments can be distilled from the text of the 2008 Water Agreement. These include, in the first instance, a general duty to "cooperate in the utilization and protection of transboundary waters" (this notion penetrates the entire text of the Agreement) and to undertake "joint" actions and measures in various areas (e.g. developing common water quality standards and criteria, emergencies preparedness and response, joint scientific studies and research). One important feature of the Water Agreement is its recognition of the legitimate interests of the public in the status and conditions of transboundary waters.

The general legal framework of the 2008 Sino-Russian Water Agreement is supplemented by more concrete substantive provisions of the 2006 Boundary Regime Agreement between these two countries, which is understandable given the specific nature of this document. Chapter Four ("Boundary Waters") addresses such issues as the prevention and control of pollution (Article 8),[172] the regulation of navigation (Article 9) and fisheries (Article 10),[173] protection of river channels and river banks (Article 11),[174] construction, modification and demolition of water-related installations and works (Article 12),[175] timber floating (Article 13),[176] and information exchange (Article 14).[177]

The 1994 Living Aquatic Resources Agreement contains a general obligation to "exercise control over the ecological status of water bodies, covered by the Agreement, preserve it, as well as take necessary measures to prevent pollution and degradation of the natural environment."[178] There are a number of more specific regulations aimed at protecting waters important for fisheries and aquatic life.[179]

On the whole, the Sino-Russian water regime contains a great variety of substantive provisions which are based on and serve to operationalize the fundamental principles of international water law, which are based on cooperation, equitable and reasonable utilization, and no significant harm. While there are certain gaps and inconsistencies, the existing arrangements generally reflect the most important factors, including but not limited to, the conditions of the watercourses, predominant uses, and the needs and capabilities of the cooperating states.

Procedural Rules

Procedural requirements constitute an essential element of most, if not all, watercourse agreements. These provide 1) the means through which the substantive rules are implemented, and 2) guidance on how the watercourse regime is managed in a continuous manner. The distinction between the "substantive" and "procedural" obligations is made mostly for analytical purposes to better understand the treaty structure and requirements. This does not mean that procedural obligations are less binding than obligations characterized as substantive; both entail legal consequences if they are breached.[180] In fact, procedural obligations play a crucial role in "operationalizing" the legal regime, especially in order to meet the requirements of equitable and reasonable utilization and the prevention of causing significant harm, in particular within the context of evolving development needs.

In practical terms, procedural obligations are an expression of the general principle of cooperation. To cooperate means, for instance, to inform other states of the planned activities which may cause adverse impacts, to exchange information related to the watercourse, to consult and conduct negotiations in good faith, as well as participate in the creation of various institutional mechanisms and arrangements and their activities supporting joint collaboration on shared water resources. Thus, cooperation may take different forms. The most common is exchange of information and data on a regular basis. For example, the 1992 UNECE TWC, whose procedural regime is aimed at preventing and reducing transboundary impacts, obligates its parties to provide for the "widest exchange of information, as soon as possible." Parties to the Convention that share the same transboundary waters are required additionally to engage in consultations "aimed at cooperation" on all matters covered by the Convention.[181]

Thus, procedural rules establish a range of obligations: from the general duty to cooperate, to more specific obligations concerning data and information exchange, prior notification and consultations. The purpose of this section will be to identify procedural provisions as they are incorporated in the Sino-Russian water regime.

The requirement for the regular exchange of information and data is the prevalent form of cooperation with respect to transboundary waters and their hydrologic, environmental, and other conditions. State practice views the exchange of information as a necessary precondition of successful bilateral and multilateral efforts to properly manage and protect shared watercourses. Both the 2008 Water Agreement[182] and the 2006 Boundary Regime Agreement[183]

contain provisions related to the exchange of information. Similar provisions are found, for example, in the two agreements on transboundary rivers between Kazakhstan and China (Article 6 of the 2001 Agreement and Article 3 of the 2011 Agreement).

The Sino-Russian legal framework seems to pay particular attention to cooperation in the event of emergencies. This is not surprising in view of the adverse impacts of industrial accidents in China which have caused significant chemical pollution of transboundary rivers, such as the Jilin Petrochemical plant explosion on the the Sungari (Songhua) River and similar incidents.[184] A special instrument—Agreement on Cooperation in the Area of Prevention and Elimination of Emergency Situations (hereinafter Emergency Agreement)[185]—was concluded in March 2006 by the two countries to deal with such incidents.[186] However, the Agreement focuses primarily on preparedness and response, including conditions of mutual assistance, to all emergencies regardless of their place or impact. There is only one general reference to the transboundary aspect of emergency situations in the entire text.[187]

The 2008 Sino-Russian Water Agreement is more specific in addressing emergencies of a transboundary character. There is a special provision concerning the establishment of systems of early warning and information exchange aimed at preventing emergencies on transboundary waters and the effective functioning of such systems.[188] In the event of an emergency, the parties must immediately warn each other and exchange relevant information. They are required also to undertake necessary reasonable measures in order to eliminate or reduce the effects of the emergency situation. It is noteworthy that Article 6 explicitly refers to the 2006 Emergency Agreement as a guiding instrument that should be complied with in responding to the emergency situation.

However, for reasons unknown to the authors, the Emergency Agreement has never entered into force. Instead, in November 2008, the Ministries of the Environment of the two states created a separate mechanism of early warning and exchange of information concerning transboundary emergencies of an environmental character.[189] The two parties agreed to promptly warn each other of any incidents involving releases of radioactive substances, hazardous chemicals, and significant pollution of transboundary rivers or the atmosphere.

The availability of adequate procedural mechanisms is particularly important when new uses in one state threaten to affect water-related interests and rights of other co-riparians. Prior notification is considered as an interna-

tional legal obligation regardless of whether or not there is a special agreement between the initiating and the potentially affected state. The duty of notification of planned measures is embodied in numerous international agreements, decisions of international courts and tribunals, as well as declarations and resolutions adopted by intergovernmental organizations. The most developed set of notification procedures can be found in the 1997 UNWC (Articles 12-18), 1992 UNECE TWC (Article 9.2), and, in a more general environmental setting, in the 1991 UNECE Convention on Environmental Impact Assessment in a Transboundary Context.[190]

The 2008 Sino-Russian Water Agreement incorporates the duty of notification, albeit in very broad terms. It requires the two states to inform each other in accordance with the previously agreed procedures about the on-going and planned measures on transboundary waters which may cause significant transboundary impact (Article 2, para. 8). The 2006 Boundary Regime Agreement obliges the competent authorities of the two states to inform each other about planned activities aimed at the enhancement of the banks of boundary rivers prior to such works (Article 11).

According to prevailing international practice, in the event of disagreement over the possible effects of the planned activities, the states concerned are expected to enter into consultations with a view of arriving at an equitable resolution of the situation. Consultations are often resorted to if there is a need to clarify or discuss certain issues in the absence of mutual understanding or agreement. They generally involve the exchange of views and information between the interested parties and sometimes precede formal negotiations. The 1997 UNWC contains more than a dozen provisions, which prescribe consultations.

As a procedural mechanism, consultations are referred to in a different context in several Sino-Russian instruments. For example, the 1994 Environmental Agreement provides for consultations and negotiations on "joint environmental impact assessment of planned or proposed projects, which may cause transboundary impact."[191] Consultations are envisaged in the 1997 Agreement on the Guiding Principles with respect to "the practical issues related to the joint economic activities."[192] A more detailed consultation procedure can be found in the 1999 Joint Use Agreement.[193] Under the 2004 Additional Boundary Agreement the issue of ownership of the newly emerged islands, which are located on the demarcated boundary line, must be resolved "through consultations between the Contracting Parties on an equitable and reasonable basis."[194] According to the 2006 Boundary Regime Agreement, the

competent authorities, if necessary, must consult each other regarding matters related to the protection of forests, water and other natural resources and their exploitation.[195] On the other hand, the 2008 Water Agreement provides for consultations only as a means of resolving disputes concerning its implementation or interpretation.

Thus, while consultations are frequently envisaged in modern water agreements, primarily as a dispute avoidance instrument in the event of planned measures, the Sino-Russian regime uses this procedure for a variety of purposes and in a variety of forms. As will be seen further, *de facto* consultations constitute the indispensable element of the functioning of numerous joint bodies established by relevant Sino-Russian agreements.

Dispute Settlement

Inter-state controversy over transboundary water resources is a relatively frequent phenomenon, as demonstrated by the recent increased involvement of the International Court of Justice (ICJ) and arbitral tribunals. Disputes over water vary greatly in terms of their legal context, and their spatial or temporal dimension. Conflicts often arise where the available water resources are inadequate to meet the needs of all users in terms of quality or quantity, or where activities in one watercourse state cause adverse transboundary effects in another watercourse state (especially on successive watercourses). Disputes may result also from disagreements concerning the interpretation or application of treaty provisions. Most water-related agreements envisage the possibility of a dispute between its parties and prescribe how it may be settled. [196]

The 1997 UNWC makes provision for the peaceful settlement of any disputes that might arise in the transboundary water context. The Convention contains an elaborate system of dispute settlement procedures set forth in Article 33 and its Annex.[197] Peaceful means include negotiation, good offices, mediation or conciliation, the employment of any joint watercourse institutions, arbitration or the ICJ. A fact-finding commission could be established at the request of even one party where the matter cannot be settled initially. While the dispute settlement provisions of the 1992 UNECE TWC are not as comprehensive, they are still broad enough to offer the disputing states various options: from negotiation or any other means of dispute settlement to submission of the dispute to the ICJ or arbitration (in accordance with the procedure set out in Annex IV).[198]

Compared to these model arrangements under the two universal instru-

ments and similar approaches adopted under numerous other river-basin and bilateral agreements, the choice of dispute settlement procedures agreed to in the Sino-Russian water regime is limited. All relevant instruments unvaryingly provide for dispute settlement either through negotiations (or consultations) or by reference to the respective joint institution. Thus, according to the 2008 Water Agreement, disputes concerning interpretation or implementation of the Agreement must be resolved by consultations between the parties (Article 7). Additionally, the Joint Commission (Article 4, para. 3.6) is entrusted, among its other responsibilities, with "assistance in the resolution of the issues of controversy between the parties." The 2006 Emergency Agreement, although not in force, is illustrative of the dominant tendency in the choice of procedure.[199]

What about other Sino-Russian instruments? There is no reference at all to dispute resolution in the 1994 Fisheries Agreement. However, according to its Article 8, the cooperation within its framework is to be realized by the Joint Commission, established in 1988 by the Fisheries Agreement between the USSR and China.[200] While the latter does not provide for any dispute settlement procedure either, it delegates to the Joint Commission the power to "consider all matters related to the implementation of this Agreement" (Article 5, para. 5). Similarly, the 2006 Boundary Regime Agreement does not contain any special provisions related to dispute resolution. Instead, the Statute of the Joint Boundary Commission (incorporated as an Annex) includes among the Commission's functions: "resolution of differences which may arise in connection with the interpretation of the articles of the Agreement in the course of its application."[201]

Thus, no means of dispute resolution other than negotiations and consultations, either directly or within their respective joint bodies, are envisaged by any Sino-Russian bilateral agreement, including on transboundary waters. This reflects the two countries' generally skeptical attitude towards third-party settlement, especially compulsory binding means, such as international arbitration or adjudication. Their obvious reluctance to even consider the possibility of third party involvement and the repeated reliance on bilateral arrangements is a common feature of state legal practice in the region of Eastern Europe and Southeast Asia. This attitude is aptly captured in the wording of Article 10 of the principal Sino-Russian document—the 2001 Treaty of Good-Neighborliness: "The Contracting Parties shall strengthen equal and trustworthy partnership and strategic interaction by using and improving the mechanism of regular meetings on different levels, first of all at the highest level,

and by regular exchange of views and bringing together positions on the matters of bilateral relations, and important and topical international problems of mutual interest."[202]

In the context of bilateral relations, a particular role is assigned to various institutional arrangements and structures, which constitute an integral part of any developed legal regime governing transboundary watercourses. The next section provides an overview of the evolving institutional framework of Sino-Russian transboundary water and environmental cooperation.

Institutional Mechanisms

International joint bodies, commissions, and other institutions are regarded as an essential component of many modern watercourse agreements and also as a means to implement the principle of cooperation. These joint river management institutions have a relatively long history: one of the first joint commissions was established by the 1909 Agreement between the UK (Canada) and the United States on their boundary waters.[203] Such institutions have become almost indispensable in recent and contemporary practice in this field. Currently there exist dozens of joint commissions or other institutional arrangements on shared water resources around the world.[204]

Such joint bodies are used as a focal point of interstate cooperation and, more specifically, as an important tool for identifying and managing competing interests, and thereby facilitating cooperation. In addition to their main function of coordinating the participating states' efforts in developing and managing their waters, institutional mechanisms contribute in many ways to dispute avoidance. They allow technical specialists to study a potentially controversial issue and make recommendations before the issue turns into a controversy requiring formal diplomatic involvement.

It must be noted that the 1997 UNWC recommends watercourse states to "consider the establishment" of joint bodies but leaves the particulars to be determined by the states concerned.[205] The 1992 UNECE TWC is much more specific in outlining what tasks such joint mechanisms should be entrusted with.[206] The practical experience gained from the work of numerous joint institutions has been analyzed and succinctly presented in the "Berlin Recommendations" adopted in September 1998 by the International Round Table on "Transboundary Water Management - Experience of International River and Lake Commissions."[207] The UNECE Study of various river and basin institutions in the Pan-European region[208] identifies three major types of interstate

agreements on transboundary waters from an institutional point of view: (a) those that do not include an institution to implement the agreement; (b) those that appoint plenipotentiaries (governmental representatives) as the main institutional mechanism; and (c) those that establish a joint commission responsible for the implementation of the agreement. Bilateral (and multilateral) commissions are the most popular institutional form of transboundary water cooperation. Their remit can include either a particular international watercourse (river basin) or all transboundary waters.

The range and scope of bilateral Sino-Russian institutions involved in the management of transboundary rivers and their water resources is impressive. The first such body—the Joint Commission—was established by the 1951 Navigation Agreement to deal with shipping and improvement of the conditions of navigation on the following boundary rivers: Amur, Ussuri, Argun, Sungacha and Lake Khanka.[209] The Joint Commission, among its other tasks, was entrusted with resolving accidents involving the collision of ships as well as other violations of the rules and conditions of navigation. It has the power to decide, on the basis of the principle of fairness and applicable national rules of navigation, issues of liability, determine the extent of damage caused, and the amount of compensation. The Joint Commission has successfully survived all the ups and downs in Sino-Russian relations and convened its 53rd meeting in April 2012.

The Sino-Russian Joint Fisheries Commission was created to support the implementation of the 1988 Fisheries Agreement[210] and subsequent instruments. Likewise, the Joint Boundary Commission is responsible for the application of the 2006 Boundary Regime Agreement.[211] The Commission is organized and functions in accordance with its Statute (Annex 17 to the Agreement).

Yet, it is the institutional mechanisms related to transboundary water resources management, use, and protection that are of particular interest here. These have evolved into a complex framework, consisting of several bodies with diverse mandates, powers, and functioning at different levels. They include:

- The (Soviet-Chinese) Commission for the Development of the Scheme for the comprehensive utilization of water resources of the Argun and Amur rivers, established in 1986;
- The Sino-Russian Joint Commission created under the 1994 Environmental Agreement;

- The Sub-commission on the protection of the environment of the Sino-Russian Commission for the regular meetings of the Heads of Government;
- The Sino-Russian Joint Water Commission established by the 2008 Water Agreement.

The Commission for the comprehensive utilization of water resources was formed upon the conclusion of a special agreement[212] as a result of considerably improved Sino-Russian relations. In fact, this was the second attempt of the two countries to jointly manage their shared water resources; the first was interrupted in the early 1960s. Under the 1986 Agreement, the Commission was to play the lead role in developing a "Scheme [Plan] for the comprehensive utilization of water resources" and to coordinate activities of various Soviet and Chinese research institutes and expert groups involved. The ultimate objective of the undertaking was to ensure the rational utilization of water resources in the boundary sections of the Amur and Argun rivers (hydropower production, flood control, navigation, water supply, etc.), as well as to ensure protection of water resources from pollution with a view to meeting the needs of the population and economy of the two countries.

The Commission had a mandate to study and approve the Scheme, and to recommend to the two governments the priority development projects. The geographical scope of the water management plan was enormous—the boundary stretch of the Argun River (850 km) and the stretch of the Amur River from the point of the confluence of the Argun and Shilka rivers to the mouth of the Ussuri River (1894 km), with a catchment area of 1.6 million km^2. Notwithstanding repeated references to rational use and protection, the main focus of the work was almost entirely on developing the hydropower potential and flood control. This was to be realized through the construction of several major dams and hydropower stations, often without due regard to the natural environment of the surrounding territories.[213]

The work on the Scheme revealed the divergent positions of the parties. According to one authority, while China, from the outset, gave priority to the interests of hydropower, the Russian side was more concerned about the socio-ecological aspects of water utilization, emphasizing the importance of protecting water quality, conservation of biodiversity, and other environmental issues.[214] The Draft Scheme was approved by the Commission in October 2000, albeit amid serious criticism from environmentalists because of its inclination towards hydropower and inadequate attention to the environmental impacts

of the planned projects.[215] So far, no serious steps to realize the Scheme have been made, although a number of hydropower projects in the basin are currently under consideration. However, with the growing influence of environmental NGOs in Russia it can be expected that the "conflict" between power generation and environmental concerns will become more pronounced. On the other hand, the devastating floods of the summer and autumn of 2013 may provide additional arguments in favor of regulating the flow of the Amur and its tributaries, *inter alia* through dam construction in the basin.

To ensure the continuity of the process the two states agreed to form a Russian-Chinese liaison group responsible for the exchange of information related to future cooperation in the joint management of shared waters. Additionally, it was proposed to conclude an agreement on the use of the boundary rivers, the draft of which was prepared by the Russian side and passed on to their Chinese counterparts in 1992.

The Joint Commission referred to in the 1994 Environmental Agreement has a much broader mandate. The Commission was intended to support bilateral cooperation on a wide range of environmental problems facing the two states; water being just one very important issue area.[216] Despite the high aspirations, the Commission exits mostly on paper. According to available information,[217] it was substituted, at least temporarily, by a Joint Working Group (JWG) on environmental protection. The JWG held two meetings in 2003 and 2004. Among other questions, it reviewed the on-going joint monitoring program of transboundary waters of the Amur and Ussuri rivers. The JWG agreed to develop a "Plan of cooperation in joint monitoring until 2009." [218]

However, it became clear to both nations that environmental matters should be dealt with at a much higher level, and such a decision was made in 2006.[219] The JWG was replaced by another body under the auspices of the Inter-Governmental Commission; a Sub-Commission on the protection of the environment was created in 1997 as a special mechanism to assist in the preparation of the annual meetings of the Heads of Government.[220] The Environmental Sub-Commission consists of the ministers of the environment and representatives of other relevant agencies, including water, and was made responsible for coordinating and enhancing environmental cooperation. [221]

The Sub-Commission has been very active; its seventh meeting took place in November 2012.[222] While the competence of the Sub-Commission includes all environmental matters of common interest, its focus has been mostly on water issues. The Sub-Commissions established three working groups responsible for: 1) the prevention of pollution and coordination of emergency re-

sponse;[223] 2) the monitoring of water quality and protection of water resources; and 3) specially protected natural areas and biodiversity.

Joint monitoring of transboundary waters has been a focal point of Sino-Russian collaboration, since water quality remains one of the most serious problems in their shared rivers.[224] The monitoring of transboundary waters is governed by a special Memorandum[225] adopted in 2006. Currently, two bodies are in charge of its operational aspects: the Joint Coordination Commission and the Joint Expert Group for Monitoring.

The last piece of the "institutional puzzle" of water cooperation is the Joint Commission, established under the 2008 Water Agreement. This body has a mandate: 1) to coordinate activities and appraise the results of the implementation of the Agreement; 2) to develop the joint schemes [plans] of the utilization and protection of transboundary waters with due account of the previous work in this sphere; 3) to develop common standards and criteria of water quality for transboundary waters; 4) to study methods of analysis and assessment of the significant transboundary impact caused by emergencies, and on this basis to develop measures of assistance to the State affected by transboundary impacts; 5) to develop plans of emergency preparedness, response and mitigation for transboundary waters; and 6) to assist in the settlement of contentious issues.[226] The Joint Commission has held five meetings from the time of its launch in 2008. The fifth meeting was convened in December 2012 in Moscow. The two sides reviewed the progress achieved, focusing in particular on joint monitoring of transboundary waters and on developing criteria which should apply to hydro-technical structures and related activities capable of causing significant transboundary impact.[227]

There are very few areas of interstate relations where a permanent institutional mechanism would be as important as in the area of transboundary waters. Any developed legal regime in this field has some kind of institutional mechanism, although they vary in terms of their mandate, powers, composition and structure. These bodies may be bilateral or multilateral; they may be in charge of a single watercourse or all transboundary waters; they may deal with a broad range of water-related activities or focus on specific uses; they may involve the highest (heads of state or government) level of interstate relations or be technical in nature; they may be used as a channel of communication or be entrusted with broader responsibilities, including dispute prevention and resolution. Cooperating states tend to rely on joint bodies as the most appropriate forum where potential conflicts over water can be diluted and disarmed by technical experts without involving diplomats or politicians.

Given that the place and functions of joint institutions are not static, they are well placed to react to changing socio-economic and natural conditions of the shared water resource.

The existing institutional architecture across Sino-Russian water cooperation is quite complex, comprising a suite of joint bodies, operating at different levels and involving various national agencies. Whereas the key environmental and water-related matters are periodically brought to the attention of the leaders of states or governments, the bulk of the work is done within the existing joint bodies. Subject to their mandate such joint institutions engage different national authorities, depending on their functional competence.

Russia, China, and their Neighbors: Towards a Multilateral Approach to Shared Waters?

Tumen River Basin: China, North Korea, and Russia

As was shown earlier, some basins shared by China and Russia extend beyond the territories of these two countries. The Tumen Basin is divided for the most part between China and North Korea, with a small portion of it located in Russia. The upper part of the Amur Basin is shared by the two countries with Mongolia. And as one of the major transboundary watercourses in this region, the Irtysh River flows from Mongolia and China into Russia across the territory of Kazakhstan. This collision of natural circumstances and geopolitical factors calls into question the adequacy of the existing normative and institutional arrangements governing the utilization and protection of the shared basins, which at present are based on bilateral agreements.

As regards the Tumen River, there are a few multilateral sub-regional agreements, which apply, among other things, to environmental protection and exploitation of natural resources, including water. Two documents, adopted in December 1995, relate to the Tumen River—the Agreement on the Establishment of the Consultative Commission for the Development of the Tumen River Economic Development Area and Northeast Asia,[228] and the Memorandum of Understanding on Environmental Principles Governing the Tumen River Economic Development Area and Northeast Asia.[229]

Yet, the reference to the Tumen River in their titles is misleading, as these are not typical basin agreements. In fact, the Tumen River is used as an axis of the Economic Development Area, which extends over a much greater part of Northeast Asia, reflected in these agreements whose aim is to promote regional economic development, initiated in 1995 by China, North Korea, and Russia. The MoU provides a legal foundation and a mechanism for economic cooperation in the form of a Consultative Commission. The non-basin states—South Korea and Mongolia—later joined the Commission as part of the regional economic undertaking.[230] The ultimate objective of these arrangements is to support the sustainable development in the Greater Tumen Region. More specifically, the member countries aim to "create a growth pole for development in the area around the Tumen River." In September 2005, the Changchun Agreement of the Member Countries of the Greater Tumen region[231] was

adopted, expanding the legal basis of cooperation as well as its geographical coverage.[232]

While the agreements on the Tumen River are not of direct relevance to water resources, the Greater Tumen Initiative (GTI)[233] covers a range of transnational issues under the broad headings of Energy, Trade and Investment, Transportation, Tourism and Environment.[234] The environmental portfolio includes activities related to water quality in line with the 1995 MoU commitment "to protect and enhance the environment of the Region and to conduct all development activities in the Region in a manner that does not damage the environment of any Contracting Party, of any other State or of areas beyond the limits of national jurisdiction."[235] Importantly, regional collaboration on water protection in Northeast Asia and specifically in the Greater Tumen Region is an important component of the GTI, which also includes a project "Feasibility Study on Tumen River Water Protection."[236]

While the Tumen River is at the heart of these legal and institutional frameworks, they contain very few provisions committing the three basin states to jointly managing and protecting their shared watercourse. It is also symptomatic of state practice in this region that, at present, North Korea is not participating in the GTI. However, there are two bilateral instruments that regulate the Russian-Korean boundary and by definition apply to the Tumen River. The most recent, signed in 2012, is a Treaty on the Regime of the Russian-Korean State Boundary.[237] The Treaty is not yet in force, but eventually it will replace a similar agreement between the Soviet Union and North Korea.[238]

Compared to its predecessor, the new Treaty is more detailed. It contains several provisions directly applicable to the Tumen River and is reminiscent of the Sino-Russian 2006 Boundary Regime Agreement.[239] Both boundary regime treaties, old and new, are limited in scope and lack any institutional framework (except for an ad hoc commission charged with occasional verification of the boundary line). On the other hand, the stretch of the river that forms the Russian-Korean boundary is too insignificant to justify a special regime governing its waters. This cannot be said about the rest of the Tumen River shared by China and North Korea.

Shilka and Argun Transboundary Sub-Basins: China, Russia, and Mongolia

While the Amur is the longest contiguous river which serves as a boundary of just two states, a small portion of its basin (less than 2 percent) belongs to a third state—Mongolia. The territory of Mongolia includes part of the water-

shed of the two main source rivers of the Amur—the Onon-Shilka system and the Kerulen River–Lake Dalai (Hulun Nur)–Argun River system. In the case of the Onon River, the watercourse intersects the Mongolian-Russian boundary before joining the Shilka River. In the second case, the Kerulen River flows into Lake Dalai. The latter is connected by a channel with the Hailaer River, and their confluence forms the beginning of the Argun. Thus, at least in theory, the system of the Kerulen–Lake Dalai–Argun can be regarded as a successive watercourse shared by the three states of Mongolia, China, and Russia.

One can ask, therefore, whether there is a need for a formal tri-lateral legal and institutional framework in this situation, at least with respect to the portion of the Amur watershed within the territories of the three states. Alternatively, one could ask whether (or not) the existing system of bilateral agreements between the three countries can be scaffolded together to comprise an adequate legal framework to ensure rational use and protection of their waters? Given the hydrologic characteristics of the watercourses in question, the tri-lateral framework appears to be excessive. So far the existing bilateral arrangements seem to be functioning satisfactorily. The rather unusual hydrologic conditions of the Kerulen–Lake Dalai–Argun system does not make it a truly tri-lateral watercourse in its natural state, since the water flow from Kerulen–Lake Dalai into the Argun River is quite insignificant and irregular. However, this has changed with the recent construction of the Hailaer–Lake Dalai canal, which permanently links the two water systems.[240]

Nonetheless, there is one tri-lateral agreement in place, adopted in 1994 by the ministries of the environment of the three countries. Its aim was to establish the Dauria International Protected Area (DIPA)[241] administered by a specially created Joint Commission.[242] The agreement does not address transboundary water resources specifically and deals with them as an element of the regional ecosystem in the context of wetland protection and biodiversity conservation within DIPA.

Irtysh Basin: China, Kazakhstan, and Russia

The final watercourse referred to above as multilateral, but certainly not the least given its significance, is the Irtysh River. It falls into the category of successive international rivers, and its basin spreads over the territories of four countries—Russia (67%), Kazakhstan (29%), China (about 4%), and, with a very small portion, Mongolia.[243] The Irtysh is an increasingly important source of water for the three states, and offers an example of a multitude of compet-

ing uses (navigation, hydropower, irrigation, industrial and municipal water abstraction, exploitation of living resources). Pollution by heavy metals, phenols, and oil products poses a serious and persistent challenge, particularly downstream. The steadily growing water use and abstraction from the watercourse has the potential in the long term to exacerbate the already perceptible tensions between the riparian states.[244] While some commentators are very critical of China's activities on the Irtysh,[245] there is a need for a more balanced approach, which would take into account the hard choice interests of economic development and other productive uses of water as well as ecosystem protection. Certainly this is not the only successive river placed within such a demanding developmental context.

Nonetheless, from the Russian and Kazakh perspective, the current state of affairs in the Irtysh Basin is a cause of serious concerns.[246] The complexity of the hydrological and water utilization situations in the basin, especially as regards its transboundary aspect, requires a robust legal and institutional framework capable of addressing difficult existing and future challenges, including the delicate balancing of competing uses and interests across national sovereign borders. Thus, the question which must be answered is whether the existing normative regime governing the utilization of the Irtysh water resources can be considered fit for purpose.

What we have at present in the Irtysh River basin are two unrelated sets of bilateral arrangements between China and Kazakhstan, on the one hand, and between Russia and Kazakhstan, on the other. The Russian-Kazakh framework of cooperation is based on the Water Agreement,[247] which was concluded in 2010 and replaced their earlier bilateral treaty of 1992.[248] The 2010 Water Agreement is a coherent document that clearly defines substantive and procedural obligations of the parties.[249] The Agreement applies to all transboundary waters, surface and ground (described as "common" for the two states), and covers both qualitative and quantitative aspects of their use. The key obligation of the parties is articulated in Article 2: "the rational utilization and protection of transboundary water bodies and the responsibility to ensure that their activities do not cause damage to transboundary water bodies of another Party." Importantly, the parties agreed to respect their earlier agreements and past decisions "on the allocation of the water resources of transboundary water bodies" (Article 5). There are a number of procedural rules that provide for: 1) prior notification in the event of planned measures which may cause transboundary impact; 2) individual or joint EIA of the planned measures; 3) consultations concerning planned measures, during which the parties must

refrain from implementing them; 4) exchange of relevant information; 5) monitoring of transboundary water bodies and exchange of monitoring data; 6) preparedness, response, and assistance in the case of emergencies affecting transboundary waters; 7) compensation of transboundary harm caused by activities on transboundary water bodies.

The Agreement establishes a Joint Commission, which will replace the existing joint body, but with a much broader mandate. It is authorized, among other things, to determine the parameters of water flow and to modify the water allocation limits in transboundary watercourses on the basis of joint assessment of water requirements; to study planned measures capable of causing transboundary impact and procedures of joint EIA; to determine the amount of compensation for transboundary harm; and to assist in resolving controversies and disputes.

The Agreement applies to the basin of the Irtysh River only within the territories of these two states and, pursuant to the fundamental principles of the law of treaties, does not affect the manner in which the upper reaches are used.[250] Nonetheless, Kazakhstan must take into account its obligations vis-à-vis Russia when dealing with China.

Sino-Kazakh cooperation is based primarily on two water-related agreements concluded in 2001 and 2011.[251] The 2001 Water Agreement is a framework treaty that sets forth some basic principles, including the rule of equitable and reasonable use, and creates a Joint Commission with a broad mandate—"issues relevant to the implementation of the Agreement." The scope of the Agreement is more limited than in most similar documents: it applies to "transboundary rivers," rather than "waters." While the treaty provides that "in the use and protection of transboundary rivers, the Parties shall adhere to the principles of equity and rationality" (Article 2), it offers no guidance as to how these principles should be interpreted or applied. However, one provision is quite direct and stipulates that "taking into account mutual interests, no Party shall limit the other Party in the rational use and protection of the water resources of transboundary rivers" (Article 4). The latter provision is counterbalanced by the requirement to take appropriate measures "to prevent or mitigate serious harm" to another State, but only "as a result of flooding disasters and man-made accidents" (Article 3). This reading of the "no harm" rule is rather restrictive: it offers little protection against harm caused by normal (if excessive) uses of shared waters. Yet, the parties agreed to cooperate in studying trends related to future changes in the volume and quality of water in transboundary rivers.

The 2011 Water Quality Agreement focuses on the prevention of transboundary impact resulting from pollution only. Unlike the earlier treaty, it does not prescribe any substantive obligations but simply outlines the areas of cooperation, including the exchange of information and early warning of accidental pollution. The Agreement creates a Sino-Kazakh Joint Commission on the protection of the environment with two working groups: on monitoring, analysis, and assessment of the water quality in transboundary rivers, and on operational responses to emergencies and the prevention of pollution. The name of this new body may be misleading: while it implies its broad environmental remit, the agreement as such deals exclusively with transboundary rivers. Thus, currently bilateral cooperation on the Irtysh between China and Kazakhstan is being facilitated by two joint commissions functioning in parallel,[252] which may lead to duplication, incoherence, and overlap of competencies. While the framework for cooperation seems to be steadily evolving, the main challenge remains unanswered: the two states still have to agree on how to allocate limited water resources in their transboundary rivers, including the Irtysh. While the Kazakhs have been pressing for clarity on this matter, and despite continued meetings of the commissions, the matter remains unresolved to date, causing serious concern downstream in Kazakhstan.

This begs the further question of the status of the Sino-Russian legal relationship regarding the Irtysh waters. On the face of it, the 2008 Sino-Russian Water Agreement would not appear to apply to the Irtysh waters, which falls outside the narrow definition of "transboundary waters,"[253] as the two countries do not have a common boundary in this basin. Does this mean that China and Russia are not bound by any mutual obligations with respect to the Irtysh River? By all accounts we must answer this in the negative, most notably given the rules of customary international law that apply nonetheless. The governing legal principle of equitable and reasonable use and the rule of due diligence so as not to cause significant harm to other watercourse states apply to all states sharing the same watercourse regardless of their location. The "equitable and reasonable use" and the "no-harm" obligations are general rules supported by extensive state practice, legal authorities,[254] and international judicial decisions.[255] Additionally, the spirit (if not the letter) of the entire Sino-Russian water regulatory regime calls for cooperation based on such principles as "strategic partnership," "mutual understanding," and "equitable and reasonable utilization" of their shared waters, which should apply in this case as well.

However, the absence of a specific legal framework pertinent to the Irtysh

River is not helpful in achieving equitable and reasonable use of its water resources by all riparian states. The existing legal regime governing the utilization of the Irtysh water resources can be characterized as piecemeal and fragmented. The current legal architecture has evolved as a set of unrelated bilateral instruments between the riparian countries, with Kazakhstan serving as a link. It is obvious that such an arrangement is unable to address effectively serious problems that arise in the context of the utilization of increasingly limited water resources. The existing legal model is contrary to the very concept of IWRM, which demands a holistic management of water as a finite and vulnerable resource.[256] The Plan of Implementation of the 2002 World Summit on Sustainable Development calls for actions at all levels to "develop and implement national/regional strategies, plans and programmes with regard to integrated river basin, watershed and groundwater management."[257]

This is problematic since no combination of bilateral arrangements on a multinational watercourse can substitute a comprehensive basin-wide agreement, in the absence of which there is little hope of introducing and implementing the IWRM principles in the Irtysh River basin. Ideally, problems of water management and utilization in the basin should be addressed within a common legal and institutional framework including all three states concerned—that is, China, Kazakhstan, and Russia. It is worth noting that the situation in the Irtysh was discussed by Chinese and Russian representatives at the ministerial level in April 2005.[258] According to information available, the two sides agreed that there is a need for an international instrument governing the use of the Irtysh waters. The Russian delegation proposed to hold consultations involving the three riparian states with a view to concluding a trilateral agreement.[259] However, no further steps have been taken and the question remains open.

Observations and Future Challenges

The water resources jointly used by China and Russia are gradually diminishing in quality and quantity, raising the specter of water insecurity in Northeast Asia. The rapid economic growth, especially in China, within the basins of their shared rivers has resulted in an increased pressure on the water resources and related ecosystems. Both water pollution and inter-basin water transfers without proper consultations between the interested parties may cause transboundary damage and water shortages, thus leading to possible controversies and disagreements at different levels of interaction—local, basin, and interstate.

One important issue which will have to be addressed by the two countries is the impending development of the hydro-power potential of the shared basins. Both sides plan to expand their ties in the energy sector, with Russia being the net supplier of electricity to the power-thirsty urban and industrial centers in Northern China.[260] These plans, which include the proposal to create a trans-national power union "Russia-China," may require the construction of a multitude of "export" power plants in Russia.[261] One such project is the suggested new major dam on the Shilka River in the Amur basin, which has provoked criticism from Russian and international environmental groups.[262] Notwithstanding the "green" opposition, some hydro-power development in the shared basins is destined to go ahead, in order to increase the production of energy as well as to better control devastating floods which hit the region on a regular basis. However, unlike the earlier attempts to develop a comprehensive scheme of joint management of transboundary waters, this has to be done on the basis of the concept of IWRM, where both economic considerations and environmental concerns must be given equal weight.

According to some experts the risks are high that "China's swelling negative environmental impact on the Russian environment will spark a political conflict. This consideration might make protection of such transboundary territories a common long-term priority for the two neighboring countries."[263] Nonetheless, Brownlie's assessment of the interface between the principles of peaceful co-existence and evolving international legal practice resonates soundly in the two states' practice surveyed here.[264]

China and Russia continue to develop their portfolio of international agreements that govern the development and management of their trans-

boundary waters. Peaceful co-existence and cooperation is enhanced through their engagements at the multilateral level under the auspices of the CBD and Ramsar conventions, which provide an overarching framework for important water-related issues, such as aquatic ecosystems protection. At the bilateral level, clearly the main level of interaction between the two nations, Sino-Russian relations evolve on the basis of numerous agreements and institutional arrangements. When benchmarked against the two universal instruments in this field—the UNWC and the UNECE TWC—these bilateral arrangements may appear less sophisticated. However, in practice we have seen a marked alignment and overall consistency between Sino-Russian treaty practice and the key provisions of these global treaties. Nevertheless, it would be advisable for China to consider joining these instruments which in the long term may bring considerable political and reputational benefits. The UNECE TWC in particular, which is now open for universal participation, offers a unique opportunity to sign up to a well-established and fully functional international regime. Such a framework "provides a collective forum conducive to bilateral and multilateral cooperation, where experience and good practices are shared."[265] When joining an international regime states do not simply become the addressees of certain rights and obligations; they take advantage of the accumulated expertise and readily available institutional mechanisms as the best means of avoiding and disarming potential conflicts.

While this possibility seems unlikely at present, the same rationale of the advantages of collective action could be invoked in favor of China's more positive attitude towards a multilateral approach to water cooperation on its transboundary watercourses. Analysis carried out under different methodologies[266] demonstrate that it is only through coordinated management and use of such watercourses involving all concerned states could their optimal utilization be achieved. The piecemeal approach to cooperation will not ensure sustainable and fair use of a transboundary watercourse but, on the contrary, may result in the deterioration of relations between the parties and lack of water security regardless of their location in the shared basin—upstream, midstream or downstream.

At the local level, transboundary water resources in several instances have been directly influenced by sub-national and local constituencies, which reflects the increasingly prominent role that local stakeholders have, despite the waters being part of an international watercourse. This nested legal structure that stretches from the highest political level to local constituencies provides a significant and rather distinctive edifice that can be effectively built upon.

The multi-level portfolio of Sino-Russian transboundary water normative instruments is implemented through numerous joint bodies, which are a prominent feature of the bilateral engagement in this field. While on the one hand we can challenge these institutional mechanisms as operating in parallel, it must be noted that international practice reveals that successful transboundary water cooperation is achieved through operational institutions, created under international agreements. So, although many challenges remain, the critical building blocks of transboundary cooperation are in place—legal frameworks and institutional mechanisms.[267] This dynamic relationship between change, institutions, and scale are at the heart of transboundary water cooperation and conflict prevention, and comprise a paradigm for evaluating Sino-Russian relations in this field.[268]

International diplomacy is important for China and Russia and their shared water resources have provided one of the central focal points for engagement. Despite notable high-level rapprochement in recent times, China's new leader Xi Jinping has repeatedly reaffirmed the primacy of national interests, and clearly both countries prioritize economic development as integral pillars of national strategies. How the two countries will manage potential transboundary water controversies that may arise might be guided by the evolving legal and institutional practice surveyed above and should be considered within both the historical context and contemporary challenges.

Considered within this broader scenario connecting past and present, transboundary water cooperation between China and Russia must now move to the next level, to be galvanized in ways consistent with the rules of international law that have emerged under the aegis of the United Nations. The fundamental tenet at the heart of the law of nations, the "duty to cooperate," is a dynamic concept, which is operationalized through the substantive and procedural rules explored above. Now it is time for both Russia and China, together with their immediate neighbors, to gather around their shared waters and to jointly build a new future—one that is firmly based on the shared vision of cooperation.

Annex 1. Bilateral Water-Related Agreements between Russia (USSR) and China

Agreement between the USSR and the PR of China on the Navigation on the Boundary Rivers of Amur, Ussuri, Argun, Sungacha and Lake Khanka Lake (1951)

Agreement between the USSR and the PR of China on the joint study of the natural resources and production potential of the Amur and Argun basins (1956)

Agreement between the USSR and the PR of China on the Regime of Commercial Navigation on the Boundary and Adjacent Rivers and Lake Khanka (1957)

Agreement between the USSR and the PR of China on the Joint Soviet-Chinese Commission for the Development of the Scheme of Comprehensive Utilization of Water Resources of the Argun and Amur Rivers (1986)

Agreement between the USSR and the PR of China on Cooperation in the Field of Fisheries (1988)

Agreement between the USSR and the PR of China on the Soviet-Chinese State Boundary in its Eastern Part (1991)

Agreement on Cooperation in the Protection, Regulation and Reproduction of the Living Aquatic Resources in the Boundary Waters of the Rivers of Amur and Ussuri (1994)

Agreement on Cooperation in the Field of the Protection of the Environment (1994)

Agreement on the Natural Reserve "Lake Khanka/Xingkai" (1996)

Agreement on the Guiding Principles of the Joint Economic Use of Certain Islands and Adjacent Aquatic Areas of the Boundary Rivers (1997)

Agreement on the Joint Economic Use of Certain Islands and Adjacent Aquatic Areas of the Boundary Rivers (1999)

Treaty of Good-Neighborliness, Friendship and Cooperation (2001)

Additional Agreement on the Russian-Chinese State Boundary (2004)

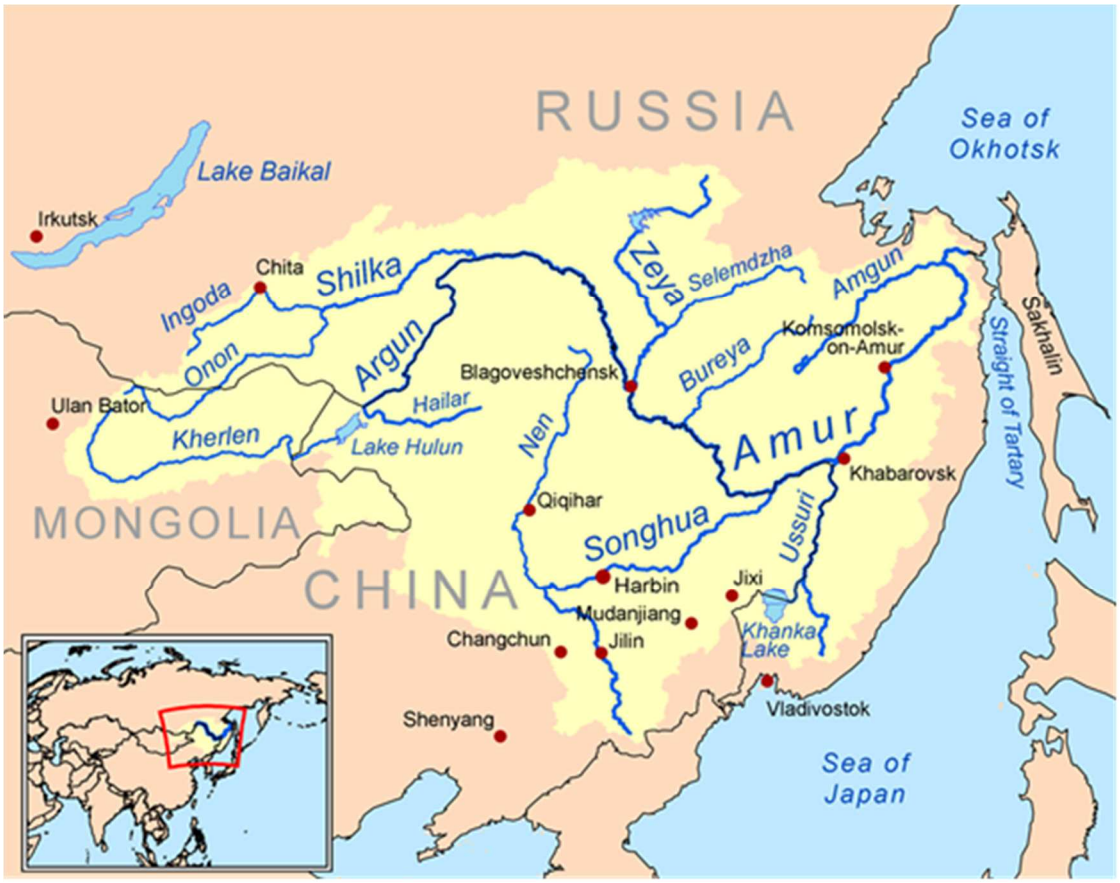
Agreement on the Regime of the Russian-Chinese State Boundary (2006)

Agreement on Cooperation in the Area of Prevention and Elimination of Emergency Situations (2006)

Agreement on the Rational Utilization and Protection of Transboundary Waters (2008)

Annex 2: Sino-Russian Institutional Mechanisms Organogram

Annex 3: Map of the Amur (Heilongjiang) River System[269]



Notes

[1] Ban Ki-moon, Address by the UN Secretary-General to the Session "Time Is Running Out on Water" of the Davos World Economic Forum, January 24, 2008, Davos, Switzerland, available at: http://www.un.org/apps/news/infocus/sgspeeches/search_full.asp?statID=177.

[2] According to John Beddington, UK Government Chief Scientific Adviser, the predicted "perfect storm" will be caused by the combined impact of the growing world population and increased competition for food, energy, and water. It is estimated that by 2030 the demand for energy and food will increase by 50 per cent, while the demand for freshwater will increase by 30 per cent. See C. McGourty, "Global Crisis 'to Strike by 2030,'" *BBC News*, March 19, 2009, http://news. bbc.co.uk/2/hi/uk_news/7951838.stm.

[3] See, for example, P. Wouters, *Water Security: Global, Regional and Local Challenges* (Institute for Public Policy Research, 2010); P. Wouters, S. Vinogradov, and B.-O. Magsig, "Water Security, Hydrosolidarity and International Law: A River Runs Through It…" *Yearbook of International Environmental Law* (2009), 97-138.

[4] International legal instruments and literature on the topic employ a variety of terms designed to define so-called "shared water resources," that is, water resources that cross international boundaries. They vary from traditional terms such as "international (or transboundary) rivers" and "international (transboundary) watercourses" to more comprehensive such as "international basins." However, in practice the differences between these terms are rather subtle and they are used interchangeably. One should add also that, according to S. McCaffrey, "Historically, a distinction has been drawn between 'contiguous' and 'successive' international watercourses. These terms refer respectively to watercourses that form or traverse boundaries between states." Contiguous rivers (watercourses) are often called boundary rivers. See: S. McCaffrey, *The Law of International Watercourses: Non-Navigational Uses* (2nd Ed. Oxford University Press 2007), 41.

[5] "China, Russia vow to further boost pragmatic cooperation," *English.news.cn*, December 6, 2012, http://news.xinhuanet.com/english/china/2012-12/06/c_132023983.htm. In this report, Chinese Vice-Premier Wang Qishan said that the China-Russia relationship was at its "historic best"; "China, Russia pledge closer security cooperation," *Global Times News*, January 9, 2013, http://www.globaltimes.cn/content/754786.shtml. The news story reports that China and Russia agreed to "…support each other's efforts to safeguard sovereignty, security and development interests."

[6] "Putin says China-Russia relations at highest level," *English.news.cn*, December 20, 2012, http://news.xinhuanet.com/english/china/2012-12/20/c_132053914.htm.

[7] Detailed information concerning these and other water systems in Northeast Asia can be found in: UN Economic Commission for Europe, *Second Assessment of Trans-*

boundary Rivers, Lakes and Groundwaters (ECE/MP.WAT/33, New York and Geneva, 2011), 99-107.

[8] Chinese name: 额尔古纳. The upper reaches of the Argun River are known as Hailaer River (海拉) in China. Its length is 1,620 km. It is worth mentioning that in years with high precipitation the Argun River receives water from the normally confined Lake Dalai (Hulun Nur), which overflows at its northern shore. The Lake is supplied by water from the Kerulen (Kherlen) River, which flows from Mongolia into China. The Argun River marks the border (established by the Treaty of Nerchinsk in 1689) Nerchinsk Treaty of Peace and Boundaries signed on August 27, 1689; G. P. Hertslet, *China Treaties,* vol. I, 3rd edition (London, 1908), 437.

[9] Chinese name: 黑龙江.

[10] Chinese name: 乌苏里江.

[11] It has a total length of 5052 km. The Amur forms the Russian-Chinese border for about 3000 km up to the point where it joins the Ussuri River, its right tributary, near the Russian city of Khabarovsk. There it ceases to define the border, flows northeasterly across Russian territory toward the Pacific Ocean, and discharges into the Strait of Tartary (Sea of Okhotsk). See: C. Hogan, "Amur River," in The Encyclopedia of Earth, http://www.eoearth.org/article/Amur_River?topic=78166.

[12] The Basin occupies 1855 thousand km². The average water flow in the Amur River is about 10 000 - 11 500 m³/s. For detailed information on the Amur River basin, its geographic and physical characteristics, economic uses and environmental problems see: Eugene A. Simonov and Thomas D. Dahmer (eds.), *Amur-Heilong River Basin Reader* (WWF Ecosystems Ltd., Hong Kong, 2008).

[13] Юлия Ковтун, Опыт Российской Федерации в совместном реагировании на чрезвычайные ситуации в международных водах, загрязнение реки Амур в 2005 году [Yu. Kovtun, The experience of the Russian Federation in jointly responding to emergencies on international waters: Pollution of the Amur River in 2005], http://www.unece.org/fileadmin/DAM/env/teia/doc/Slubice_09/19JuliaKovtun-RU.pdf.

[14] Chinese name: 松阿察河. The Ussuri River, which is approximately 900 km long and has a catchment area of 193 000 km², rises in the Sikhote-Alin mountain range and flows north until its confluence with the Amur.

[15] Chinese name: 兴凯湖. Lake Khanka belongs to the Ussuri River system and is divided between China and Russia. The lake is fed by 23 rivers (8 in China and 15 in Russia), but the only outflow of the lake is the Songacha River. The lake's catchment area is about 17 000 km², of which 97 percent is in Russia.

[16] G. P. Hertslet, s*upra* note 8.

[17] The Tumen River first forms the border between China and North Korea, and then, for a few kilometers, marks the border between North Korea and Russia before entering the Sea of Japan.

[18] Chinese name: *É'ěrqísī hé* / 额尔齐斯河. The river has its source in the western part of Mongolia, flows across China (the upstream part of the river is called Black Irtysh), then Kazakhstan and finally into Russia.
[19] See: *Second Assessment*, *supra* note 7, 91.
[20] See, for example, Han Zaisheng, R. Jayakumar, Liu Ke, Wang Hao, Chai Rui, "Review on transboundary aquifers in People's Republic of China with case study of Heilongjiang-Amur River Basin," in *Environmental Geology*, vol. 54, no. 7 (June 2008), 1411-12.
[21] An overview of transboundary environmental and water issues can be found in the proceedings of the conference *Status and Prospects of the Russian-Chinese Cooperation in Environment Conservation and Water Management*: *Materials of the international conference* (Moscow, September 27-28, 2007) – Moscow: MNR of Russia, 2007.
[22] For details see V. Kulakov et al., "Riverbank Filtration as an Alternative to Surface Water Abstraction for Safe Drinking Water Supply to the City of Khabarovsk, Russia," in C. Ray and M. Chamrukh (eds.), *Riverbank Filtration for Water Security in Desert Countries* (Springer, 2011), 286-87.
[23] L. M. Kondratieva, "Amur-Heilong River Pollution: A Downstream Perspective for Understanding and Managing Environmental Risks" in *Amur-Heilong River Basin Reader, supra* note 12, 322-24.
[24] *Ibid*.
[25] Zhong Ma, "Emergency Planning and Response for Accidental Release of Water Pollutants in China: Lessons from the Songhuajiang River Incident," World Bank Analytical and Advisory Assistance Program "China: Addressing Water Scarcity" Background Paper Series.
[26] *Ibid.*
[27] *Environmental Risks to Sino-Russian Transboundary Cooperation: From Brown Plans to a Green Strategy*, E. Simonov, E. Shvarts and L. Progunova (eds.), WWF's Trade and Investment Programme Report, (2011) [WWF Report].
[28] Press release of the Ministry of Natural Resources and Ecology of the Russian Federation, October 29, 2007, available at http://www.mnr.gov.ru/news/detail.php?ID=16378&sphrase_id=269349&print=Y.
[29] V. P. Karakin, "Transboundary water resources management on the Amur River: competition and cooperation," in WWF Report, *supra* note 27, 86.
[30] *Ibid.*
[31] "Water in a Changing World," *UN World Water Development Report* 3 (2009), 98.
[32] See for details Jian Xie et al., *Addressing China's Water Scarcity: Recommendations for Selected Water Resource Management Issues* (World Bank, 2009).
[33] *Ibid*.
[34] HSBC Reports, "Water Stress - Analyzing the Global Challenges" (2011); and "No Water, No Power - Is There Enough Water To Fuel China's Power Expansion?" Both highlight China's growing water problems, noting that 11 of China's provinces are

water scarce and close to one-half of the countries' coal reserves (very water intensive) are located in water scarce regions. See https://www.research.hsbc.com/midas/Res/RDV?ao=20&key=Cu58QjjSwz&n=342956.PDF; http://www.research.hsbc.com/midas/Res/RDV?ao=20&key=Fxjcu6AJgD&n=309614.PDF. The challenges are particularly acute in urban centers; see Jian Chen, "In Urbanizing China, Big Cities Get the Blues," *CaixinOnline*, January 8, 2013, http://english. caixin.com/2013-01-08/100480770_1.html.

[35] C. Yu, "China's water crisis needs more than words," *Nature*, February 17, 2011, 470(7334): 307; J. Qui, "China faces up to groundwater crisis," *Nature*, July 15, 2010, 466(7304): 308; See also P. Gleick, "China and Water," in *The World's Water 2008–2009*.

[36] China's Twelfth Five Year Plan (2011-2015), English version, http://cbi.typepad.com/china_direct/2011/05/chinas-twelfth-five-new-plan-the-full-english-version.html. See also HSBC Report, "China's Rising Climate Risk - The 20 Questions Investors Need to Ask" (October 6, 2011), 10, http://www.research.hsbc.com/midas/Res/RDV?ao=20&key=Fxjcu6AJgD&n=309614.PDF.

[37] China Water Risk asserts: "In China the tipping point has come. Li Keqiang, China's next Premier-to-be in March, said that China's limited water resources have become serious economic and social development constraints; saving water and improving water-use efficiency are priorities," http://chinawaterrisk.org/resources/analysis-reviews/2012-review-5-trends-for-2013/.

[38]"China to invest $608 b in water projects," *China Daily*, January 31, 2011, cited in HSBC Report, supra note 36.

[39] *Supra* note 32, 10.

[40] The Russian translation of the Plan can be found in the journal "Пространственная экономика" (Spatial Economics), 2009, no. 1, 62 et seq.

[41] For more details see *infra* note 240.

[42] "Water Strategy of the Russian Federation for the period until 2020," adopted by the Order of the Government of the Russian Federation no. 1235-p of 27 August 2009 [Russian text: "Водная стратегия Российской Федерации на период до 2020 года," Утверждена распоряжением Правительства Российской Федерации от 27 августа 2009 г. N 1235-р, available at: http://mnr.gov.ru/].The Russian Water Strategy emphasizes the importance of international cooperation on transboundary waters, which has to be developed through bilateral and multilateral normative frameworks governing joint utilization and protection of transboundary watercourses.

[43] *Ibid*.

[44] *Ibid*.

[45] In 1956 the USSR and the PRC concluded a special intergovernmental agreement on the joint study of the natural resources and production potential of the Amur and Argun basins, see *infra* note 119.

[46] Apart from its name, Amur Bay has no geographical connection with the Amur River. It is located in the northwestern part of Peter the Great Gulf and has no natural connection with the Amur Basin.

[47] For a very detailed overview of the work on the Scheme, see: В. И. Готванский, *Бассейн Амура: осваивая – сохранить*. Издание второе (Хабаровск, 2007) [V. I. Gotvanskiy, *The Amur River Basin: How to Protect While Using It*, 2nd ed. (Khabarovsk, 2007)].

[48] *Ibid*.

[49] 2001 Treaty of Good-Neighborliness, Friendship and Cooperation, *infra* note 116.

[50] Plan of Action for the implementation of the provisions of the Treaty of Good-Neighborliness, Friendship and Cooperation between the Russian Federation and the People's Republic of China (2005-2008), approved by President Vladimir Putin and Chairman Hu Jintao (Peking, 14 October 2004) [Russian text: План действий по реализации положений Договора о добрососедстве, дружбе и сотрудничестве между Российской Федерацией и Китайской Народной Республикой (2005-2008 годы). Утвержден Президентом Владимиром Путиным и Председателем Ху Цзиньтао 14 октября 2004 года в Пекине, http://archive.kremlin.ru/text/ docs/2004 /10/78193.shtml].

[51] See WWF Report, *supra* note 27, 34. The Strategy suggests improving the monitoring of transboundary environmental pollution, including water quality, bottom sediments, and fish, through expanding the range of indicators and establishing new observation posts on transboundary rivers.

[52] The Program of cooperation between the regions of the Far East and Eastern Siberia of the Russian Federation and the Northeast of the People's Republic of China (2009-2018) [Russian text: Программа сотрудничества между регио нами Дальнего Востока и Восточной Сибири Российской Федерации и Северо-Востока Китайской Народной Республики (2009 - 2018 годы)], which is on file with the authors. The Program of inter-regional cooperation provides for collaboration between the Amur Oblast' (Region) and Heilongjiang Province in the field of transboundary waters; between Zabaikalsky Krai and Inner Mongolia – on the protection of the water resources and biodiversity of the Argun Basin, as well as the implementation of the nature conservation project "Integrated management of the Amur (Heilongjiang) Basin"; between Khabarovsky Krai and Heilongjiang Province – on joint monitoring of the quality of surface waters and aquatic living resources, and the creation and proper functioning of joint conservation areas for the purpose of protection of transboundary water ecosystems.

[53] A. Dikarev and V. Dikarev, "Accountability of environmental factors in regional development strategies, programmes, and plans in Russia and China: a case study of the Russian Far East and Northeast China," in WWF Report, *supra* note 27, 35.

[54] See, for example, T. Dmitrakova, "Amur River floods more areas in Russian Far East," *Russia Beyond the Headlines*, September 3, 2013, http://rbth.ru/society/2013/09/03/amur_river_floods_more_areas_in_russian_far_east_29451.html.

[55] J. S. Kim and M. Murphy, "Transboundary River Tensions—Opportunities for Collaboration," *China Environment Series* (Woodrow Wilson International Center for Scholars, 2006), 211, http://www.wilsoncenter.org/publication/china-environment-series-8-2006-0.

[56] In January 2013, in a speech to the Communist Party's Politburo, Party chief Xi Jinping asserted that China will never compromise its sovereignty, security, or development interests, adding that "No foreign country should expect us to make a deal on our core interests…," Shanghai Daily.com, "Xi vows no compromises over China's sovereignty," *Xinhua,* January 30, 2013, http://www.shanghaidaily.com/nsp/National/2013/01/30/Xi%2Bvows%2Bno%2Bcompromises%2Bover%2BChinas%2Bsovereignty.

[57] This principle was articulated initially as Principle 21 of the 1972 Stockholm Declaration and later reiterated as Principle 2 of the Rio Declaration. See, respectively, Declaration of the United Nations Conference on the Human Environment, UN Doc. A/CONF/48/14/Rev. 1, and Declaration of the United Nations Conference on Environment and Development, UN Doc. A/CONF/151/26/Rev. 1.

[58] Ian Brownlie, "The Wang Tieya Lecture in Public International Law The Peaceful Settlement of International Disputes," *Chinese Journal of International Law*, vol. 8, No. 2, (2009), 267.

[59] Xue Hanqin, "China's Open Policy and International Law," *Chinese Journal of International Law*, vol. 4, No. 1, (2005), 138-39.

[60] See P. Wouters and Huiping Chen, "China's 'Soft-Path' to Transboundary Water Cooperation Examined in the Light of Two Global UN Water Conventions – Exploring the 'Chinese Way,'" 22 *Journal of Water Law* (2013), 232.

[61] Statement of the Chinese representative Mr. Gao Feng, UN General Assembly Fifty-first session, Official Records of the 99th Plenary Meeting (May 21, 1997), UN Doc. A/51/PV.99, 6.

[62] See, for example, E. Benvenisti, "Asian Traditions and Contemporary International Law on the Management of Natural Resources," *Chinese Journal of International Law*, vol. 7, No. 2, (2008), 273–283. Following his survey of Asian practice in this field, Benvenisti observes that: "Asian traditions do not provide us with useful examples of success stories in overcoming unilateralism. Also, they do not offer guidelines as to the proper course of development for international law" (282). On the other hand, the same author asserts that: "Asian traditions have also informed national courts in Asia on the contemporary applications of ancient concepts for the sustainable management of domestic natural resources to the benefit of future generations … These

applications can nurture the contemporary understanding of the right to water in international law" (283).

[63] S. McCaffrey, *supra* note 4, 399.

[64] H. A .Smith, *The Economic Uses of International Rivers* (London, 1931), 150-1.

[65] Adopted on April 28, 1967, by the Consultative Assembly of the Council of Europe (Recommendation 493 (1967)), and on May 26, 1967, by the Committee of Ministers (resolution (67) 10); text reproduced in *Yearbook of the UN International Law Commission*, 1974, vol. II (Part Two), 342-43, document A/CN.4/274, para. 373.

[66] *International Law -- Facilitating Transboundary Water Cooperation* (GWP TEC Background Paper No. 17, 2013); see also *Handbook for Integrated Water Resources Management in the Basins of Transboundary Rivers, Lakes and Aquifers* (GWP and INBO, 2012), http://www.gwp.org.

[67] United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses (UN, G.A. Res. 51/206, 51 U.N. GAOR Supp. No.49, at 341, UN Doc. A/51/49 (vol. I) (1996), http://untreaty.un.org/ilc/texts/instruments/english/conventions/8_3_1997.pdf.

[68] Article 8 "General obligation to cooperate" of the UNWC provides:

"1. Watercourse States shall cooperate on the basis of sovereign equality, territorial integrity, mutual benefit and good faith in order to attain optimal utilization and adequate protection of an international watercourse.

"2. In determining the manner of such cooperation, watercourse States may consider the establishment of joint mechanisms or commissions, as deemed necessary by them, to facilitate cooperation on relevant measures and procedures in the light of experience gained through cooperation in existing joint mechanisms and commissions in various regions."

[69] Commentary to the *Draft Articles on the Law of the Non-navigational Uses of International Watercourses, Adopted on Second Reading,* in *Report of the International Law Commission on the work of its forty-sixth session*, [1994] 2(2) *Yearbook of International Law Commission*, 105, http://untreaty.un.org/ilc/documentation/english/a_cn4_l493.pdf.

[70] See, for example, Article 3 (the process to be followed in concluding watercourse agreements, stressing the need to consult and include all riparian states that may be affected); Article 5 (2), which introduces the obligation to "participate in the use, development and protection of an international watercourse in an equitable and reasonable manner," which "includes both the right to utilize the watercourse *and the duty to cooperate i*n the protection and development thereof," the provisions on "Planned Measures" contained in Part III (Arts. 9, and 11-17); Article 14 (provision of data and information); Article 25 (regulation of flow); and Article 31 (good faith provision of information).

[71] UN Doc. A/RES/51/229 (1997).

[72] http://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXVII-12&chapter=27&lang=en#1.

[73] During the discussions of the Draft Articles in the UN Sixth Committee Meeting in 1996, China supported the primacy of the principle of equitable and reasonable use; see UN Doc. A/C.6/48/SR.25, 7-8; A/C.6/46/SR.28, 2-3; A/C.6/43/SR.42, 15. China considered Article 5 UNWC as "the cornerstone . . . set forth a general principle . . . and established a proper balance between the rights and responsibilities of each watercourse State"; see UN Doc. A/C.6/51/SR.15, 7.

[74] See Press Release, General Assembly adopts Convention on the Law of Non-Navigational Uses of International Watercourses, UN Doc. GA/9248 (May 21, 1997).

[75] *Ibid.*

[76] *Ibid.*

[77] During the voting in the Working Group of the Whole at the UN on the draft provision Article 33, China, Colombia, France, India, and Turkey voted against the provision. See UN Doc. A/C.6/51/NUW/L.3/AD1

[78] *Supra* note 74.

[79] S. McCaffrey, *supra* note 4, 444.

[80] Patricia Wouters, "The Legal Response to International Water Conflicts: The UN Watercourses Convention and Beyond," *German Yearbook of International Law* 42 (1999), 293-336.

[81] UN Economic Commission for Europe (UNECE) Convention on the Protection and Use of Transboundary Watercourses and International Lakes (March 17, 1992, Helsinki) *United Nations Treaty Series*, vol. 1936 (1996), 269; entered into force October 6, 1996, http://www.unece.org/env/water/pdf/watercon.pdf.

[82] For a comprehensive analysis of the evolving legal regime under the UNECE TWC, see: P. Wouters and S. Vinogradov, "Analyzing the ECE Water Convention: What Lessons for the Regional Management of Transboundary Water Resources," *Yearbook of International Cooperation on Environment & Development* (2003/2004), 55.

[83] For the current status of the Parties to the UNECE TWC and its amendment, see http://www.unece.org/env/water/status/legal1.html.

[84] On November 28, 2003, the Parties to the UNECE TWC adopted amendments to articles 25 and 26 which will allow accession to the Convention by states which are not members of the UNECE (see MP.WAT/2003/4). On November 8, 2012, the conditions for the entry into force of the above-mentioned amendments were met and they entered into force on February 6, 2013. See http://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXVII-5-b&chapter=27&lang=en.

[85] Convention on Wetlands of International Importance Especially as Waterfowl Habitat (Ramsar, February 2, 1971) (hereinafter the Ramsar Convention), *United Nations Treaty Series*, vol. 996, 1-14583 (1976), 247.

[86] Convention on Biological Diversity (Rio de Janeiro, June 5, 1992), *United Nations Treaty Series*, vol. 1760 (2001), 79, http://treaties.un.org/doc/Treaties/1992/06/ 19920605%2008-44%20PM/Ch_XXVII_08p.pdf.

[87] E. Brown Weiss suggests "that all peoples have a growing common concern in the availability and use of fresh water. The interest is in ensuring robust fresh water resources, which can be used for present and future generations to satisfy basic needs, to grow food, to satisfy industrial needs, to conserve ecosystems, and to meet other purposes." See E. Brown Weiss, "The Coming Water Crisis: A Common Concern of Humankind," *Transnational Environmental Law*, 1:1 (2012), 165. A more extensive study on this topic can be found in "Implementation of Multilateral Environmental Agreements for Efficient Water Management," based on a paper prepared by The Foundation for International Environmental Law and Development (FIELD), April 2005, manuscript on file with the authors. See also S. Brels, D. Coates, F. Loures, *Transboundary Water Resources Management: The Role of International Watercourse Agreements in Implementation of the CBD* (CBD Technical Series No. 40, Secretariat of the Convention on Biological Diversity, Montreal, Canada 2008), http://www.internationalwaterlaw.org/bibliography/WWF/cbd+iwl.pdf.

[88] The definition of "wise use" was formulated in Resolution IX.1 Annex A, 2005; see Ramsar Glossary, http://www.ramsar.org.

[89] Resolution VI.1 defines functions of wetlands as "activities or actions which occur naturally in wetlands as a product of interactions between the ecosystem structure and processes. Functions include flood water control; nutrient, sediment, and contaminant retention; food web support; shoreline stabilization and erosion controls; storm protection; and stabilization of local climatic conditions, particularly rainfall and temperature"; Ramsar Glossary, *ibid*.

[90] A close interface between wetlands management and river basins, including those that are transboundary, is reflected in the Ramsar handbooks for the wise use of wetlands (4th edition, 2010), e.g. *River basin management.* Integrating wetland conservation and wise use into river basin management (Handbook 9, Chapter 7: Integrating wetlands into river basin management: international cooperation and partnerships); *Water allocation and management.* Guidelines for the allocation and management of water for maintaining the ecological functions of wetlands (Handbook 10); *International cooperation*. Guidelines and other support for international cooperation under the Ramsar Convention on Wetlands (Handbook 20).

[91] The List of Wetlands of International Importance (March 7, 2013), http://www.ramsar.org/pdf/sitelist.pdf.

[92] In Russia, the Ramsar sites include: Khingano-Arkharinskaya Lowland (Amur Oblast), Lake Bolon & the mouths of the Selgon and Simmi Rivers (Khabarovsk Krai), Lake Khanka (Primorski Krai), Lake Udyl and the mouths of the Bichi, Bitki, and Pilda Rivers (Khabarovsk Krai), and Zeya-Bureya Plains (Amur Oblast); *ibid*.

[93] In China, the Ramsar sites include, for example, a number of important specially protected territories in the basin of the Heilongjiang (Amur River): Nanweng River National Nature Reserve, Qixing River National Nature Reserve, Zhenbaodao Wetland National Nature Reserve, Honghe National Nature Reserve, and San Jiang Na-

tional Nature Reserve, as well as Dalai Lake National Nature Reserve in Inner Mongolia; *ibid*.

[94] See: The Annotated Ramsar List: Russian Federation, at http://www.ramsar.org/cda/en/ramsar-pubs-notes-annotated-ramsar-16091/main/ramsar/1-30-168%5E16091_4000_0.

[95] *Supra* note 85. Article 5 of the Convention obliges the Contracting Parties to "consult each other about implementing obligations arising from the Convention especially in the case of wetlands extending over the territories of more than one Contracting Party or where the water system is shared by Contracting Parties. They shall at the same time endeavour to coordinate and support present and future policies and regulations concerning the conservation of wetlands and their flora and fauna."

[96] *International cooperation*. Guidelines and other support for international cooperation under the Ramsar Convention on Wetlands (Handbook 20); *supra* note 90 .

[97] See T. Minaeva, "Cooperation Prospects of the Russian Federation, China, and Mongolia under the Ramsar Convention," in *Status and Prospects of the Russian-Chinese Cooperation in Environment Conservation and Water Management, supra* note 21, 283-89.

[98] The principal focus of the Initiative is on wetlands of international importance: Torey lakes, Zeya-Bureya Plain, Khingano-Arkharinskaya Lowland, Lake Bolon and the mouths of the Selgon and Simmi Rivers, and Lake Khanka. In three of those Ramsar wetlands the emphasis is on enlarging existing national protected areas and establishing additional local reserves in their close neighborhood with a total planned expansion of about 3000 km^2. Udyl Wildlife Refuge will be managed by the Russian Ministry of Natural Resources and Ecology of the Russian Federation (Minpriroda Russia) and will receive support for protection infrastructure.

[99] *Supra* note 85.

[100] *Agreement between the Government of the Russian Federation and the Government of the People's Republic of China on the Natural Reserve "Lake Khanka"* (Peking, April 25, 1996) [Russian text: *Соглашение между Правительством Российской Федерации и Правительством Китайской Народной Республики о заповеднике «Озеро Ханка»* (г. Пекин, 25 апреля 1996 г., available at http://open.lexpro.ru/document/302218#63; Chinese text: 中俄《关于兴凯湖自然保护区协定》, http://www.hflib.gov.cn/law/law/falvfagui/GJTY/HJ/HJ1017.htm.]

[101] Transboundary Ramsar Sites, available at http://www.ramsar.org/cda/en/ramsar-documents-trss/main/ramsar/1-31-119_4000.

[102] *Supra* note 86.

[103] Under Article 1, the objectives of the Convention include "the conservation of biological diversity" and "the sustainable use of its components."

[104] Article 2 defines "biological diversity" as "the variability among living organisms from all sources including, inter alia, terrestrial, marine and other *aquatic ecosystems*

and the *ecological complexes of which they are part*; this includes diversity within species, between species and of ecosystems" (emphasis added).

[105] See *supra* note 57.

[106] Article 3, para. (b) reads "in the case of processes and activities, regardless of where their effects occur, carried out under its jurisdiction or control…"

[107] *Supra* note 86.

[108] *Ibid.*

[109] *Ibid*. Under Article 14, para. (a), the parties are obliged to undertake environmental impact assessment of proposed projects that may cause significant adverse effects on biological diversity. Whilst this provision does not indicate whether it applies to possible transboundary impacts or not, nothing in its wording can be construed as limiting the sphere of its application.

[110] S. Brels, D. Coates, and F. Loures, *Transboundary Water Resources Management: the Role of International Watercourse Agreements in Implementation of the CBD*, *supra* note 87, 19.

[111] For example, numerous references to "transboundary catchments, watersheds and river basins" are contained in the Revised programme of work on inland water biological diversity, which was approved by the Decision VII/4 "Biological diversity of inland water ecosystems," UNEP/CBD/COP/DEC/VII/4 (April 13, 2004). In particular, the program of work includes among its objectives the following: "integrated land and catchment/watershed/river basin management approaches that incorporate the ecosystem approach, and the conservation and sustainable use of inland water ecosystems, including transboundary catchments, watersheds and river basins" (Goal 1.1, objective (a)); and "where appropriate, transboundary, collaborative approaches to identifying, recognizing and managing protected inland water ecosystems are undertaken between neighbouring Parties" (Goal 1.2, objective (b)).

[112] This cooperation, for example, is endorsed in the Revised programme of work on inland water biological diversity, *supra* note 111.

[113] The recent Russian National Report submitted to Ramsar COP11, referred in particular to active work implemented in the Amur River basin between Russia, China, and Mongolia. The work is coordinated within bilateral and trilateral (Dauria) cooperation and implemented within WWF activities. Such cooperation was significantly enhanced by implementation and follow up of the UNEP project on Crane conservation (International Crane Foundation); see National Report on the Implementation of the Ramsar Convention on Wetlands to the 11th Meeting of the Conference of the Contracting Parties, Romania, June 2012, http://www.ramsar.org/pdf/cop11/nr/cop11-nr-russia.pdf.

[114] Luwei Ying and Xianlong Hou, "The accomplishment and strategy in developing transboundary waters in China," CE 397, Transboundary waters, http://www.caee.utexas.edu/prof/mckinney/ce397/Topics/China/China2(2012).pdf; see also Feng Yan, He Daming, "Transboundary Water Vulnerability and Its Drivers in China," *Journal*

of Geographical Sciences (2009) 19: 189-199; He Daming, Zhao Wenjuan, Feng Yan, "Research progress of international rivers in China," *Journal of Geographical Sciences* 14, supplement (2004), 21-8, http://www.lancang-mekong.org/Upload/upfile/2005630175927532.pdf.

[115] Vladimir Karakin provides a list of the transboundary water-related topics discussed over the past 100 years by China and Russia, see V. Karakin, "Transboundary Water Resources Management on the Amur River: Competition and Cooperation" in WWF Report, *supra* note 27, 87. The earliest border treaties between China and Russia can be found during the Qing Dynasty (17th century), the Treaty of Nerchinsk, which established an agreed frontier "a separation of sovereignties" along the Argun River and Stanovoy Mountains. See N. Maxwell, "How the Sino-Russia Boundary Conflict Was Finally Settled: From Nerchinsk 1689 to Vladivostok 2005 via Zhenbao Island 1969," http://src-hokudai-ac.jp/coe21/publish/no16_2_ses/02_maxwell.pdf. See also Nie Hongyi, Explaining Chinese Solutions to Territorial Disputes with Neighbour States, *Chinese Journal of International Politics*, vol. 2 (2009), 503-514.

[116] Treaty of Good-Neighbourliness, Friendship and Cooperation between the Russian Federation and the People's Republic of China (Moscow, 16 July 2001) [Russian text: Договор о добрососедстве, дружбе и сотрудничестве между Российской Федерацией и Китайской Народной Республикой (г. Москва, 16 июля 2001 г.) "Бюллетень международных договоров", 2002, №8, 56; Chinese text:《中俄睦邻友好合作条约》]. The English version is available at http://www.fmprc.gov.cn/eng/wjdt/2649/t15771.htm. The Agreement entered into force on February 28, 2002.

[117] *Agreement between the Government of the Union of Soviet Socialist Republics and the Government of the People's Republic of China on the Navigation on the Boundary Rivers of Amur, Ussuri, Argun, Sungacha and Khanka Lake and Establishment of Navigable Conditions on these Waterways* (Kharbin, 2 January 1951); [Russian text: *Соглашение между Правительством Союза Советских Социалистических Республик и Правительством Китайской Народной Республики о порядке плавания по пограничным рекам Амур, Уссури, Аргунь, Сунгача и оз. Ханка и об установлении судоходной обстановки на этих водных путях* (г. Харбин, 2 января 1951 г.), "Сборник действующих договоров, соглашений и конвенций, заключенных СССР с иностранными государствами", Вып. XIV, М., 1957, с. 333-6 (Collection of Treaties concluded by the USSR with Foreign States); Chinese text: 中苏《关于黑龙江、乌苏里江、额尔古纳河、松阿察河及兴凯湖之国境河流航行及建设协定, available at http://www.lawxp.com/statute/s1012721.html].

[118] *Agreement between the Government of the Union of Soviet Socialist Republics and the Government of the People's Republic of China on the Regime of Commercial Navigation on the Boundary and Adjacent Rivers and Lake Khanka* (Moscow, 21 December 1957) [Russian text: *Соглашение между Правительством Союза Советских Социалистических Республик и Правительством Китайской Народной Республики о режиме торгового*

судоходства на пограничных и смежныхс ними реках и озере Ханка (Москва, 21.12.1957 г.), available at http://base.consultant.ru/cons/cgi/online.cgi?req=doc;base=INT;n=4880].

[119] *Agreement between the Government of the Union of Soviet Socialist Republics and the Government of the People's Republic of China on the joint scientific research studies of the natural resources and production potential of the Amur River basin and engineering and design works for the development of the Scheme of the comprehensive utilisation of the Argun River and the upper reaches of the Amur River* (Peking, 18 August 1956) [Russian text: *Соглашение о проведении Союзом Советских Социалистических Республик и Китайской Народной Республикой совместных научно-исследовательских работ по выявлению природных ресурсов и перспектив развития производительных сил бассейна реки Амур и проектно-изыскательских работ по составлению схемы комплексного использования реки Аргунь и верхнего течения реки Амур* (г. Пекин, 18 августа 1956 г.) in *«Сборник действующих договоров, соглашений и конвенций, заключённых СССР с иностранными осударствами, вып. XVII и XVIII, Госполитиздат, 1960)*]. The 1956 Agreement was formally terminated in 1999.

[120] *Agreement between the Government of the Union of Soviet Socialist Republics and the Government of the People's Republic of China on the Joint Soviet-Chinese Commission for the Development of the Scheme of Comprehensive Utilisation of Water Resources of the Frontier Sections of the Argun and Amur Rivers* (Moscow, 23 October 1986) [Russian text: *Соглашение между Правительством Союза Советских Социалистических Республик и Правительством Китайской Народной Республики о создании Советско-Китайской комиссии для руководства разработкой Схемы комплексного использования водных ресурсов пограничных участков рек Аргунь и Амур* (г. Москва, 23 октября 1986 г.), available at http://russia.bestpravo.ru/fed1991/data02/tex13819.htm].

[121] *Agreement between the Government of the Union of Soviet Socialist Republics and the Government of the People's Republic of China on Cooperation in the Field of Fisheries* (Moscow, 4 October 1988) [Russian text: *Соглашение между Правительством Союза Советских Социалистических Республик и Правительством Китайской Народной Республики о сотрудничестве в области рыбного хозяйства* (г. Москва, 4 октября 1988 г.), http://lawsector.ru/data/dos10/txc10166.htm; Chinese text:《中苏渔业合作协定》, available at http://china.findlaw.cn/fagui/guojifa/gj/23/22300.html].

[122] *Agreement between the Union of Soviet Socialist Republics and the People's Republic of China on the Soviet-Chinese State Boundary in its Eastern Part* (16 May 1991) [Russian text: Соглашение между Союзом Советских Социалистических Республик и Китайской Народной Республикой о советско-китайской государственной границе на ее Восточной части (16 мая 1991 г.)].

[123] *Agreement between the Government of the Russian Federation and the Government of the People's Republic of China on Cooperation in the Protection, Regulation and Reproduction of the Living Resources in the Boundary Waters of the Rivers of Amur and Ussuri* (Peking, 27

May 1994); [Russian text: *Соглашение между Правительством Российской Федерации и Правительством Китайской Народной Республики о сотрудничестве по охране, регулированию и воспроизводству сырьевых водных ресурсов в пограничных водах рек Амур и Уссури* (г. Пекин, 27 мая 1994 г.), faolex.fao.org/docs/texts/bi-47950.doc; Chinese text: 中俄《关于黑龙江、乌苏里江边境水域开展渔业资源保护、调整和增殖议定书》, http://www.xunyu.com/html/xxbk/zcfg/wm/19940527.htm.]

[124] *Agreement between the Government of the Russian Federation and the Government of the People's Republic of China on Cooperation the Field of the Protection of the Environment* (Peking, 27 May 1994) [Russian text: *Соглашение между Правительством Российской Федерации и Правительством Китайской Народной Республики о сотрудничестве в области охраны окружающей среды* (г. Пекин, 27 мая 1994 г.); Chinese text:《中华人民共和国政府和俄罗斯联邦政府环境保护合作协定》].

[125] *Agreement between the Government of the Russian Federation and the Government of the People's Republic of China on the Guiding Principles of the Joint Economic Utilization of Certain Islands and Adjacent Aquatic Areas of the Boundary Rivers*, (Peking, 10 November 1997) [Russian text: *Соглашение между Правительством Российской Федерации и Правительством Китайской Народной Республики о руководящих принципах совместного хозяйственного использования отдельных островов и прилегающих к ним акваторий на пограничных реках* (г. Пекин,10 ноября 1997г.), "Бюллетень международных договоров", 2003, №11, 13, available at: LEX-FAOC028285; Chinese text: 中俄《关于对界河中个别岛屿及其附近水域进行共同经济利用的协定》, available at: http://sifaku.com/falvfagui/38/zcedppa15p0b.html].

[126] *Agreement between the Government of the Russian Federation and the Government of the People's Republic of China on the Joint Economic Use of Certain Islands and Adjacent Aquatic Areas of the Boundary Rivers* (Peking, 9 December 1999) [Russian text: *Соглашение между Правительством Российской Федерации и Правительством Китайской Народной Республики о совместном хозяйственном использовании отдельных островов и прилегающих к ним акваторий пограничных рек* (г. Пекин, 9 декабря 1999 г.), "Бюллетень международных договоров", 2004, № 8, 31-36]. The Agreement entered into force on January 19, 2000.

[127] *Agreement between the Government of the Russian Federation and the Government of the People's Republic of China on the Inventory of the Treaties between the USSR and PRC during the period from 1949 to 1991. Concluded by the Exchange of Notes* (Moscow, 28 April 1999) [Russian text: *Соглашение между РФ И КНР об инвентаризации договоров между СССР И КНР в период с 1949 по 1991 годы*. Обмен нотами состоялся (г. Москва, 28 апреля 1999 г.), "Сборник договоров России с 1949 по 1999" (03.12.2004)].

[128] Plan of Action for the implementation of the provisions of the Treaty of Good-Neighbourliness, Friendship and Cooperation between the Russian Federation and the People's Republic of China (2005-2008), *supra* note 50.

[129] *Постановление Правительства РФ от 07.05.97 N 555 о заключении Соглашения между Правительством Российской Федерации и Правительством Китайской Народной Республики о сотрудничестве в области охраны и рационального использования трансграничных вод* [*Decree of the Government of the Russian Federation No 555 of 07.05.97 on the conclusion of the Agreement between the Government of the Russian Federation and the Government of the People's Republic of China on Cooperation in the Field of Protection and Rational Utilization of Transboundary Waters* available at www.LawRussia.ru.].

[130] Memorandum of Understanding between the Ministry of Natural Resources and Ecology of the Russian Federation and the State Administration of Environmental Protection of the People's Republic of China on cooperation in joint monitoring of water quality in the transboundary waters (Moscow, 21 February 2006) [Russian text: Меморандум о взаимопонимании между Министерством природных ресурсов и экологии Российской Федерации и Государственной администрацией КНР по охране окружающей среды о сотрудничестве по вопросам совместного мониторинга качества воды трансграничных объектов (г. Москва, 21 февраля 2006 г.)]; on file with the authors.

[131] Yury Trutnev, the then Russian Minister of Natural Resources and Ecology, said in an interview to the Russian newspaper *Rossiyskaya Gazeta*: "The agreement makes the most of what could have been achieved at present. It is the result of a compromise between the two states … Russia persistently brought up the issue of joint protection of transboundary water bodies, and the Chinese government responded by pouring a lot of money into environmental protection, which helped cut the concentration of pollutants in transboundary water bodies almost by half … This agreement became possible only because the issue has become a top priority for China … Now we have an official channel for information exchange, mandatory at both ends … Additionally, any actions or inaction of the parties which lead to the deterioration of transboundary waters should be considered as a breach of the agreement." See T. Смольякова, "Россия и Китай договорились беречь дальневосточную природу," *Российская газета* (2 февраля 2008 г.) [T. Smolyakova, "Russia and China have agreed to protect the nature of the Far East," *Rossiyskaya Gazeta*, February 2, 2008, available at http://www.rg.ru/2008/02/02/priroda.html].

[132] *Agreement between the Government of the Russian Federation and the Government of the People's Republic of China on the Rational Utilisation and Protection of Transboundary Waters* (Peking, 29 January 2008) [Russian text: *Соглашение между Правительством Российской Федерации и Правительством Китайской Народной Республики о рациональном использовании и охране трансграничных вод* (г. Пекин, 29 января 2008 г.) "Бюллетень международных договоров", 2008, No. 12, 40, also http://mid.ru/bdomp/spd_md.nsf; Chinese text: 中俄《关于合理利用和保护跨界水的协定》, http://www.fmprc.gov.cn/chn/pds/ziliao/tytj/tyfg/t708160.htm.] The Agreement entered into force on May 23, 2008.

[133] *Additional Agreement between the Government of the Russian Federation and the Government of the People's Republic of China on the Russian-Chinese State Boundary in its Eastern Part* (Peking, 14 October 2004) [Russian text: *Дополнительное соглашение между Российской Федерацией и Китайской Народной Республикой о российско-китайской государственной границе на ее восточной части* (г. Пекин, 14 октября 2004 г.), "Бюллетень международных договоров," 2005, N 11, 76-79.] The Agreement entered into force on June 2, 2005.

[134] *Agreement between the Government of the Russian Federation and the Government of the People's Republic of China on the Regime of the Russian-Chinese State Boundary* [Russian text: *Соглашение между Правительством Российской Федерации и Правительством Китайской Народной Республики о режиме Российско-Китайской государственной границы* (г. Пекин, 9 ноября 2006 г.) "Бюллетень международных договоров," 2007, N 5, 40-78; http://www.rosgranitsa.ru/ru/node/3140; Chinese text:《关于中俄国界管理制度的协定》, http://www.fmprc.gov.cn/chn/gxh/zlb/tyfg/t708159.htm]. The Agreement entered into force on August 4, 2007.

[135] 2001 Treaty of Good-Neighborliness, *supra* note 116.

[136] 1994 Environmental Agreement, Article 2, *supra* note 124.

[137] 2006 Boundary Regime Agreement, *supra* note 134.

[138] 2008 Water Agreement, *supra* note 132.

[139] 1988 Fisheries Agreement, Article 1, *supra* note 121.

[140] 1994 Living Aquatic Resources Agreement, Preamble, *supra* note 123.

[141] 1997 Joint Use Agreement, Article 8, *supra* note 125; 1999 Joint Use Agreement, Article 6, *supra* note 126.

[142] See e.g. *Joint Statement of the Russian Federation and the Peoples' Republic of China on further development of the Russian-Chinese relations of comprehensive equal and trustworthy partnership and strategic cooperation* (Moscow, 5 June 2012) [Russian text: *Совместное заявление Российской Федерации и Китайской Народной Республики о дальнейшем углублении российско-китайских отношений всеобъемлющего равноправного доверительного партнерства и стратегического взаимодействия* (г. Москва, 5 июня 2012 г.), http://news.kremlin.ru/ref_notes/1230].

[143] For example, the Joint Statement of the Heads of State adopted in June 2009 provides *inter alia*: "The [interstate] interaction in the area of environmental protection is developing dynamically, having become an important element of the Russian-Chinese strategic partnership. The parties will deepen cooperation in the sphere of rational utilisation and protection of the transboundary waters. The Heads of State positively assessed the collaboration in the field of joint monitoring of water quality of transboundary water bodies, early notification and exchange of information in cases of transboundary environmental emergencies, conservation of biodiversity and transboundary specially protected areas," see: *Joint Russian-Chinese Statement on the Results of the High-Level Meeting* (Moscow, 17 June 2009) [Russian text: *Совместное*

Российско-Китайское заявление об итогах встречи на высшем уровне (г. Москва, 17 июня 2009 г.), available at http://kremlin.ru/transcripts/15552].

[144] *Joint Declaration of the Russian Federation and the People's Republic of China* (Peking, 21 March 2006) [Russian text: *Совместная декларация Российской Федерации и Китайской Народной Республики* (г. Пекин, 21 марта 2006), available at http://asiadata.ru/?lang=ru&id=2979].

[145] For more on water regimes, see S. Vinogradov, "Regime Building for Transboundary Waters: The Evolution of Legal and Institutional Frameworks in the EECCA Region," *Journal of Water Law* 18 (2007), 77-94.

[146] S. Krasner, "Structural Causes and Regime Consequences: Regimes as Intervening Variables," in S. D. Krasner (ed.), *International Regimes* (Ithaka, NY 1983), 2. See also E. B. Haas, "Regime Decay: Conflict Management and International Organizations, 1945-1981" *International Organization* 192 (1983).

[147] H. Haftendorn, "Water and International Conflict," *Third World Quarterly* 21 (2000), 51-68.

[148] See: P. Wouters, S. Vinogradov et al., "Sharing Transboundary Waters: An Integrated Assessment of Equitable Entitlement: The Legal Assessment Model" (Technical Documents in Hydrology No.74, UNESCO, Paris, 2005); S. Vinogradov, P. Wouters, and P. Jones, "Transforming Potential Conflict into Cooperation Potential: The Role of International Water Law" (UNESCO, 2003).

[149] *Supra* note 67.

[150] *Supra* note 81.

[151] 1997 UN Watercourses Convention (Article 2) provides the following definition of the terms "watercourse" and "international watercourse":

"(a) 'Watercourse' means a system of surface waters and groundwaters constituting by virtue of their physical relationship a unitary whole and normally flowing into a common terminus;

(b) 'International watercourse' means a watercourse, parts of which are situated in different States," *supra* note 67.

[152] *Agreement between the Government of the Russian Federation and the Government of Mongolia on the Protection and Utilisation of Transboundary Waters* (Ulan-Bator, 11 February, 1995) [Russian text: *Соглашение между Правительством Российской Федерации и Правительством Монголии по охране и использованию трансграничных вод* (г. Улан-Батор, 11 февраля 1995 г.), available at: http://voda.mnr.gov.ru/part/?act=more&id=302&pid=961].

[153] *Agreement between the Government of the Russian Federation and the Government of the Republic of Kazakhstan on Joint Utilisation and Protection of Transboundary Water Bodies* (Ust-Kamenogorsk, 7 September 2010) [Russian text: *Соглашение между Правительством Российской Федерации и Правительством Республики Казахстан о совместном использовании и охране трансграничных водных объектов* (г. Усть-

Каменогорск, 7 сентября 2010 г.)], available at http://voda.mnr.gov.ru/part/?act=more&id=5975&pid=961.

[154] See *supra* note 129. Article 1 of the proposed draft agreement.

[155] See, for example, The UN-Water Status Report on the Application of Integrated Approaches to Water Resources Management (UNEP, 2012).

[156] Paragraph 18.9, United Nations, Agenda 21 – *the United Nations Programme for Action from Rio,* paragraphs. 18.1-18.90, http://www.un.org/esa/dsd/agenda21/res_agenda21_18.shtml. The terms "basin" and "catchment" tend to be used synonymously.

[157] Dublin Statement on Water and Sustainable Development, Dublin, Ireland, January 31, 1992, reprinted in *Environmental Policy and Law* 22 (1992), 54.

[158] See on this S. Vinogradov, P. Wouters, and P. Jones, "Transforming Potential Conflict into Cooperation Potential: The Role of International Water Law," *supra* note 148, 50-51.

[159] *Supra* note 132.

[160] A. Aust, *Modern Treaty Law and Practice* (Cambridge: Cambridge University Press, 2000), 336-37.

[161] Article 4 (para. 1) reads: "The two Contracting Parties shall jointly protect the ecological system of the transboundary waters and develop and utilize transboundary waters in a manner which shall not be detrimental to the other side. Any development and utilization of transboundary waters shall follow the principle of fairness and equitableness without impeding any reasonable use of transboundary waters." See: *Agreement between the Government of the People's Republic of China and the Government of Mongolia on the Protection and Utilization of Transboundary Waters* (April 29, 1994). The Agreement entered into force on January 16, 1995. On file with the authors (unofficial translation from Chinese).

[162] A. Aust, *Modern Treaty Law and Practice*, *supra* note 160, 337.

[163] *Cf.*, for example, with the 1992 UNECE TWC, Article 1(2) of which provides the following definition of the term "transboundary impact": "'Transboundary impact' means any *significant* [emphasis added] adverse effect on the environment resulting from a change in the conditions of transboundary waters caused by a human activity, the physical origin of which is situated wholly or in part within an area under the jurisdiction of a Party, within an area under the jurisdiction of another Party," *supra* note 81.

[164] *Supra* note 132.

[165] *Ibid*.

[166] Article 7 of the 1997 UNWC "Obligation not to cause significant harm" provides the following: "1. Watercourse States shall, in utilising an international Watercourse in their territories, take all appropriate measures to prevent the causing of significant harm to other watercourse States. 2. Where significant harm nevertheless is caused

to another watercourse State, the States whose use causes such harm shall, in the absence of agreement to such use, take all appropriate measures - having due regard for the provisions of articles 5 and 6, in consultation with the affected State, to eliminate or mitigate such harm and, where appropriate, to discuss the question of compensation," *supra* note 67.

[167] Article 2 of the UNECE TWC reads "The Parties shall take all appropriate measures to prevent, control and reduce any transboundary impact," *supra* note 81.

[168] *Cf.*, 1995 Russian-Mongolian Water Agreement, *supra* note 152. The only relevant provision of this Agreement is its Article 4 which obliges each party to take "appropriate measures to prevent, control and reduce negative impacts on transboundary waters while conducting water-related economic activities and other measures on its territory."

[169] *Agreement between the Government of the Republic of Kazakhstan and the Government of the People's Republic of China on Cooperation in the Use and Protection of Transboundary Rivers* (Astana, 12 September 2001) [Russian text: *Соглашение между Правительством Республики Казахстан и Правительством Китайской Народной Республики о сотрудничестве в использовании и охране трансграничных рек* (г. Астана, 12 сентября 2001 г.) on file with the authors], and *Agreement between the Government of the Republic of and the Government of the People's Republic of China on the Protection of Water Quality of Transboundary Rivers* (Peking, 22 February 2011) [Russian text: *Соглашение между Правительством Республики Казахстан и Правительством Китайской Народной Республики об охране качества вод трансграничных рек* (г. Пекин, 22 февраля 2011 г.), http://online.prg.kz].

[170] 2010 Russian-Kazakh Water Agreement, *supra* note 153. Article 8 provides that if any measures carried out by one party cause damage to another party, the latter shall be liable for the compensation. In each case the amount of damage will be determined by the joint groups of experts which will be established by the Joint Commission.

[171] According to Article 2 the two states undertook *inter alia* to:

- Cooperate in the utilization and protection of transboundary waters, and in the exchange of technology, as well as promote the application of new technologies;
- Maintain the existing waterworks and other installations in a proper technical condition, take measures to stabilise river channels and prevent erosion;
- Develop and adopt necessary measures aimed at preventing and reducing transboundary impact on transboundary waters which result from discharges of pollutants, and exchange appropriate information;
- Cooperate in the field of hydrology, flood prevention and mitigation on transboundary waters;
- Conduct monitoring of transboundary waters in order to receive on a regular basis information on their quality in accordance with the programs adopted by the Joint Commission and bilateral agreements;

- Where necessary, undertake joint measures of the utilization and protection of transboundary waters;
- Inform each other in accordance with agreed procedures of any on-going or planned water-related measures on transboundary waters which may cause significant transboundary impact, and to take necessary measures in order to prevent, control and limit such impact;
- Prepare and implement joint measures aimed at preventing emergencies and responding to them;
- Take into account the traditional uses of natural resources by indigenous minority peoples when implementing joint water protection measures in the areas of their habitation;
- Inform the public in accordance with their national legislation on the conditions of transboundary waters and measures to protect them;
- Conduct joint scientific research and develop for transboundary waters common standards and criteria of water quality, and methods of monitoring;
- Cooperate in the scientific studies related to the utilization and protection of transboundary waters;
- Exchange the results of scientific studies in the field of utilization and protection of transboundary waters through joint academic conference and workshops and promote cooperation among scientific institutions and public organizations;
- Conduct studies of the sources of pollution that may cause significant transboundary impact on transboundary waters, and to take measures to prevent, control and limit transboundary impact.

[172] Article 8 establishes an obligation of the parties to adopt measures aimed at the implementation of the Agreement and to respect rights and interests of each other. Their competent authorities must undertake measures for the protection of the environment, prevention of soil erosion and other adverse consequences in the floodplains, as well as ensuring purity of boundary waters and prevention of manmade pollution. The parties are to jointly establish standards and methods of control of water quality based on the specific functions of water uses within different sections of their rivers. They will enter into appropriate agreements on environmental protection in the border areas.

[173] Article 10 regulates fishing activities in the boundary waters. It prohibits illegal fishing or the use of banned fishing means and methods, which may cause damage to the living resources. Fishing is completely prohibited during closed periods. Fishing activities should not create obstacles for navigation. Issues of conservation and reproduction of fisheries and other living aquatic resources must be regulated by separate agreements between the parties.

[174] Article 11 requires from the competent authorities to take measures to prevent erosion of river banks and the alteration of the boundary rivers' channels. When one

state undertakes engineering works to improve river banks on its territory it must avoid causing adverse effects of such works in the territory of another state and must inform the latter before beginning such works. The competent authorities of the parties must resolve all issues related to the river banks' improvement through "consultations, based on the principle of equality and mutual benefit." In the event one party finds it necessary to undertake river channel dredging and clearing works it must do so according to agreement with the competent authorities of another party. It is also stipulated that no party can change the location of the river bed without consent of the other.

[175] Article 12 requires the parties to adopt additional agreements regarding such matters as the construction, modification, or demolition of any structures or works, including transboundary, on the boundary rivers or their banks, which may change the location of the river bed or regime of the boundary waters, affect water utilization, navigation, migration of fish, cause damage to the environment, as well as other interests of the Parties.

[176] Article 13 provides that issues related to timber floating on navigable rivers and on the greed parts of the Argun River will be governed by additional agreements.

[177] Article 14 obliges the competent authorities of the parties "to exchange, to the extent necessary, information about stream flow, level and quality of water, ice conditions in the boundary waters, and measures aimed at protecting boundary waters and preventing threats caused by floods and drifting ice floes."

[178] 1994 Living Aquatic Resources Agreement, Article 6, *supra* note 123.

[179] *Ibid*. Regulation 15 prohibits the discharge of industrial and municipal wastewater, industrial solid wastes, garbage, and other hazardous substances into the protected rivers; Regulation 16 requires the strict control the use of chemical fertilizers on the agricultural lands in the vicinity of water bodies used for fisheries; Regulation 18 prohibits draining of water bodies and their use for agricultural cultivation; according to Regulation 19 water extraction and transfer from the water bodies used for fisheries can be carried out only upon the permission of fishery authorities; Regulation 20 prohibits extraction of gravel and sand from the river channels used as spawning grounds; Regulation 21 prohibits cutting of trees and land cultivation in proximity to river banks within the limits established by the national legislation of the two countries; according to Regulation 22, companies engaged in the exploration, construction, and the use of explosives, must obtain permission from the fishery authorities. They must take measures aimed at preventing or limiting harm to fisheries, and, where such harm is caused, must compensate it in accordance with national legislation.

[180] See, for example, S. McCaffrey, *The Law of International Watercourses: Non-Navigational Uses*, *supra* note 4, 397.

[181] *Supra* note 81.

[182] Article 5 "Exchange of information" requires from the parties to reach understanding in consultation with each other on the substantive, quantitative, and temporal parameters of information exchange on transboundary waters. In the event if one party requests materials and data not envisaged in such agreement the other party must, as far as possible and on certain conditions, satisfy the request.
[183] Article 14 requires from the competent authorities to exchange, if necessary, information concerning the water flow, level and quality of water, and ice conditions in the boundary waters as well as measures related to the protection of the boundary waters for the purpose of prevention of threat of floods and ice flow.
[184] See, for example, "Russia queries China on Sungari river toluene spill," ICIS news (5 June 2006). It was reported that Russia requested information from China about toluene pollution of the Sungari River following an explosion at the Harbin paints plant, http://www.icis.com/Articles/2006/06/05/1067983/russia-queries-china-on-sungari-river-toluene-spill.html.
[185] *Agreement between the Government of the Russian Federation and the Government of the People's Republic of China on Cooperation in the Area of Prevention and Elimination of Emergency Situations* (Peking, 21 March 2006) [Russian text: *Соглашение между Правительством Российской Федерации и Правительством Китайской Народной Республики о сотрудничестве в области предупреждения и ликвидации чрезвычайных ситуаций* (г. Пекин, 21 марта 2006 г.), http://www.mid.ru]. The Agreement is not in force.
[186] The Agreement defines the term "emergency" as a "situation which has occurred on a particular territory as a result of an accident, dangerous natural event, catastrophe, natural or any other calamity, which may cause or have caused loss of life, harm to human health or to the environment, significant economic losses and disruption of the living conditions of the population" [unofficial translation from Russian]; *ibid.* (Article 1).
[187] *Ibid*. According to Article 5 (para. 8) the two countries agreed to cooperate in taking, if necessary, effective measures to prevent the spread of the impacts of emergencies from the territory of one party to the territory of another.
[188] 2008 Water Agreement, Article 6, *supra* note 132.
[189] РФ и КНР создают систему оперативного оповещения об экологических ЧС [RF and PRC create a system of early warning about emergency situations] see: РИА Новости /ria.ru/eco/20081112/154870768.html#ixzz2LGfTeIoW].
[190] Convention on Environmental Impact Assessment in a Transboundary Context (Espoo, 25 February 1991, http://www.unece.org/env/eia/eia.html. The EIA Convention, in particular, establishes a detailed system of EIA, prior notification and, if necessary, consultations concerning projects and activities that may cause transboundary impacts. These procedures are compulsory with regard to such water-related projects as the construction of trading ports and inland waterways, large dams and res-

ervoirs, and groundwater abstraction in cases where the annual volume of water to be abstracted amounts to 10 million cubic meters or more.

[191] 1994 Environmental Agreement, Article 4, *supra* note 124.

[192] 1997 Agreement on the Guiding Principles of the Joint Use, Article 10, *supra* note 125.

[193] 1999 Joint Use Agreement, Article 10, *supra* note 126. The parties are required to conduct consultations concerning the practical issues related to the application of the Agreement on a regular basis. Such consultations take place at least twice a year in turn on the territories of the two states.

[194] 2004 Additional Boundary Agreement, Article 5, *supra* note 133.

[195] 2006 Boundary Regime Agreement, Article 18, *supra* note 134.

[196] For more on transboundary water dispute settlement, see P. Wouters, "Universal and Regional Approaches to Resolving International Water Disputes: What Lessons Learned from State Practice?" in International Bureau of the Permanent Court of Arbitration (ed.), *Resolution of International Water Disputes* (Kluwer Law International, 2003), 111-154.

[197] 1997 UNWC, *supra* note 67. Article 33 offers a wide range of dispute settlement procedures, including direct negotiations and, if agreement cannot be reached, resolution with the help of a third party—good offices, mediation, conciliation, use of joint commissions. Finally, any party may resort to an impartial fact-finding mechanism, the details of which are spelled out in Article 33 (paras. 4-9). They may agree also to submit the matter to arbitration or bring it before the ICJ. An Annex sets forth the arbitral procedure.

[198] 1992 UNECE TWC, Article 22, *supra* note 81.

[199] 2006 Emergency Agreement, *supra* note 185. Article 13 reads: "Disputes arising with regard to interpretation and application of this Agreement shall be resolved through consultations and negotiations between the Parties" (unofficial translation from Russian).

[200] 1988 Fisheries Agreement, Article 5, *supra* note 121.

[201] Statute of the Joint Russian-Chinese Boundary Commission, Section II, *supra* note 134.

[202] 2001 Treaty of Good-Neighborliness, *supra* note 116.

[203] Treaty between the United States and Great Britain Relating to Boundary Waters, and Questions arising between the United States and Canada (Washington, 11 January 1909), in force May 5, 1910, 36 Stat. 2448. The Treaty was concluded by the UK on behalf of its Dominion of Canada.

[204] GWP and INBO 2012. *Handbook for Integrated Water Resources Management in Transboundary Basins of Rivers, Lakes and Aquifers*, http://www.gwp.org/Global/About%20GWP/Publications/INBO-GWP%20Transboundary%20Handbook/MGIREB-UK-2012_Web.pdf.

[205] 1997 UNWC, Article 8, *supra* note 67.

[206] 1992 UNECE TWC, Article 9 (para. 2), *supra* note 81. UNECE TWC recommends that the joint bodies shall *inter alia* be responsible for the following:
(a) To collect, compile and evaluate data in order to identify pollution sources likely to cause transboundary impact;
(b) To elaborate joint monitoring programmes concerning water quality and quantity;
(c) To draw up inventories and exchange information on the pollution sources;
(d) To elaborate emission limits for waste water and evaluate the effectiveness of control
programmes;
(e) To elaborate joint water-quality objectives and criteria, and to propose relevant measures for maintaining and, where necessary, improving the existing water quality;
(f) To develop concerted action programmes for the reduction of pollution loads from both point sources (e.g. municipal and industrial sources) and diffuse sources (particularly from agriculture);
(g) To establish warning and alarm procedures;
(h) To serve as a forum for the exchange of information on existing and planned uses of water and related installations that are likely to cause transboundary impact;
(i) To promote cooperation and exchange of information on the best available technology, as well as to encourage cooperation in scientific research programmes;
(j) To participate in the implementation of environmental impact assessments relating to transboundary waters, in accordance with appropriate international regulations.
[207] "Berlin Recommendations: Lessons Learned, Challenges and Issues for the Future" adopted by the International Round Table: Transboundary Water Management - Experience of International River and Lake Commissions (Berlin, 27-30 September 1998), http://www.bmu.de/files/pdfs/allgemein/application/pdf/petersberg_berlin_recommendations1998.pdf.
[208] "River Basin Commissions and Other Institutions for Transboundary Water Cooperation", Capacity for Water Cooperation in Eastern Europe, Caucasus and Central Asia, UNECE (New York and Geneva, 2009), 1.
[209] 1951 Navigation Agreement, *supra* note 117.
[210] 1988 Fisheries Agreement, Article 5, *supra* note 121.
[211] 2006 Boundary Regime Agreement, Article 50 and Annex 17, *supra* note 134.
[212] 1986 Agreement, *supra* note 125.
[213] V. I. Gotvanskiy, *The Amur River Basin: How to Protect While Using It*, *supra* note 48.
[214] *Ibid*., 35.
[215] *Ibid*.

[216] The 1994 Environmental Agreement (Article 2) includes among the areas of cooperation *inter alia* protection of the atmosphere from emissions of hazardous substances with due account of transboundary pollution; protection and comprehensive utilization of water resources with due account of pollution of transboundary watercourses; development and implementation of joint programs in the area of utilization of natural resources, environmental protection and ecological security; protection, regulation and control of the marine environment and natural resources; transportation, management and utilization of toxic and dangerous waste, recycling and re-use; development of environmental norms, rules and standards for the utilization of natural resources and environmental protection; monitoring, assessment and forecast of the status of the environment; creation of the specially protected areas including in transboundary areas, and other areas.

[217] Проект ЮНЕП/ГЭФ «Амур», Сотрудничество в области охраны окружающей среды между Российской Федерацией и Китайской Народной Республикой (сентябрь 2006 г.) [UNEP/GEF Project "Amur", Cooperation in the field of environmental protection between the Russian Federation and the People's Republic of China (September 2006) at http://www.ecoinfo.ru/amur/cooperation/international_cooperation_sprav.htm].

[218] Протокол расширенного заседания совместной рабочей группы представителей Хабаровского края, Еврейской автономной области (Российская Федерация) и провинции Хейлунцзян (Китайская Народная Республика) по вопросам охраны окружающей среды и рационального использования природных ресурсов (г. Хабаровск, 2 сентября 2004 г.) [Minutes of the meeting of the Joint Working Group (Khabarovsk, 2 September 2004)]; on file with the authors.

[219] Протокол девятого заседания Российско-Китайской Комиссии (12 мая 2006 г.) [Minutes of the Ninth Meeting of the Russian-Chinese Commission (12 May 2006)], http://www.crc.mofcom.gov.cn/crweb/rcc/info/Article.jsp?a_no=30108&col_no=32.

[220] *Agreement between the Government of the Russian Federation and the Government of the People's Republic of China on the Establishment and Organisational Basis of the Mechanism of the Regular Meetings of the Heads of Government* (Peking, 27 June 1997) [Russian text: *Соглашение между Правительством Российской Федерации и Правительством Китайской Народной Республики о создании и организационных основах механизма регулярных встреч глав правительств России и Китая* (г. Пекин, 27 июня 1997 г.) "Бюллетень международных договоров", 1997 г., № 10, с. 69, The Agreement entered into force on June 27, 1997.

[221] *Протокол к Соглашению между Правительством Российской Федерации и Правительством Китайской Народной Республики о создании и организационных основах механизма регулярных встреч глав правительств России и Китая* (21 февраля 2006 г.) [*Protocol to the Agreement between the Government of the Russian Federation and the Government of the People's Republic of China on the Establishment and Or-*

ganizational Basis of the Mechanism of the Regular Meetings of the Heads of Government (21 February 2006)], on file with the authors.

[222] VII заседание Подкомиссии по сотрудничеству в области охраны окружающей среды Российско-Китайской комиссии по подготовке регулярных встреч глав правительств (20 ноября 2012 г.) [VII Meeting of the Sub-Commission on cooperation in the field of protection of the environment of the Russian-Chinese Commission for the preparation of the regular meetings of the Heads of Government (November 20, 2012)], http://www.mnr.gov.ru/news/detail.php?ID=129580&spetial=Y.

[223] The sixth meeting of the Working group took place in Moscow in April 2012. The Chinese side presented information about recent activities aimed at preventing pollution of the Sungari and Amur rivers. The Russian experts for their part confirmed that the results of the joint monitoring show an improvement of water quality in the rivers; http://www.mnr.gov.ru/news/detail.php?ID=128546.

[224] See, for example, "China, Russia Conduct Annual 'Physical Examination' for Cross-border Rivers," Official website of the Chinese Central Government, http://www.gov.cn/misc/2008-03/06/content_911809.htm.

[225] *Supra* note 130.

[226] 2008 Water Agreement, Article 4 "Mechanisms of application," *supra* note 132.

[227] О V заседании совместной Российско-Китайской комиссии по рациональному использованию и охране трансграничных вод (14 декабря 2012 г.) [On the 5th Meeting of the Joint Russian-Chinese Commission on the rational utilisation and protection of transboundary waters (December 14 2012)], http:// voda.mnr.gov.ru/part/?act=more&id=8458&pid=108.

[228] *Agreement on the Establishment of the Consultative Commission for the Development of the Tumen River Economic Development Area and Northeast Asia* (New York, 6 December 1995), http://www.mofa.go.kr/incboard/faimsif/mltltrl_popup.jsp?KOEN _ID=3F5522A290DE75DD492573D30007C957&ITEM_PARENT_ID=A349DD4BF38DF12E492565EE002737EC.

[229] *Memorandum of Understanding on Environmental Principles Governing the Tumen River Economic Development Area and Northeast Asia* (New York, 6 December 1995), http://www.mofa.go.kr/incboard/faimsif/mltltrl_popup.jsp?KOEN_ID=0F07E0E6324D5A3E492573E2001B463C&ITEM_PARENT_ID=BCF95794421C0C1C492565EE00276BAC.

[230] See for more detail in S. Marsden, "Developing Approaches to Transboundary Environmental Impact Assessment in China: Co-operation through the Greater Tumen Initiative and in the Pearl River Delta Region," *Chinese Journal of International Law* 9 (2010), 400.

[231] *Changchun Agreement of the Member Countries of the Greater Tumen Initiative* (Changchun, 2 September 2005), http://www.tumenprogramme.org/news.php?id=500.

[232] According to the Changchun Agreement, the Greater Tumen Region includes three Northeast provinces and Inner Mongolia of China, the Rason Economic and Trade Zone of DPRK, Eastern provinces of Mongolia, Eastern port cities of ROK and part of the Primorsky Territory of Russia.

[233] The Greater Tumen Initiative (GTI) superseded the Tumen River Area Development Programme (Tumen Programme), which was re-branded in order to serve better the common goals. Currently it has four member countries: China, Mongolia, the Republic of Korea, and the Russian Federation. It is supported by the UN Development Programme (UNDP) and other donors. The GTI functions as a joint mechanism and "provides a unique multilateral forum for the member countries to identify and implement regional initiatives that encourage economic growth, improve living standards and contribute to peace and stability in North-East Asia." See GTI website http://www.tumenprogramme.org/. For the latest GTI Strategic Action Plan for the Period 2006 to 2015 see: http://tumenprogramme.org/UploadFiles/pdf/Documents/Strategic%20Action%20Plan%202012-2015.pdf.

[234] According to the GTI Strategic Action Plan for the Period 2006 to 2015, the environment was one of the earliest areas of concentration of the Tumen Program, and as of 2004, had attracted 85 percent of total program funding. It will remain the cross-cutting sector for the priority sectors of the GTI Strategic Action Program that "aims to elaborate regional policy priorities and national action commitments, particularly in the areas of *biodiversity loss and water issues* [emphasis added]." See: GTI Strategic Action Plan for the Period 2006 to 2015, *supra* note 233. A special body of the Consultative Commission - the Environment Board – was created at the 9th GTI Commission meeting in 2007 as the implementing mechanism for environmental cooperation.

[235] *Supra* note 229.

[236] See "GTI Strengthens Coordinated Efforts to Protect the Tumen River," http://www.tumenprogramme.org/news.php?id=1014.

[237] *Treaty between the Government of the Russian Federation and the Government of the People's Democratic Republic of Korea on the Regime of the Russian-Korean State Boundary* (Moscow, 5 July 5 2012) [Russian text: *Договор между правительством Российской Федерации и Правительством Корейской Народно-Демократической Республики о режиме российско-корейской государственной границы* (г. Москва, 5 июля 2012 г.), http://www.mid.ru].

[238] *Agreement between the Union of Soviet Socialist Republics and the Democratic People's Republic of Korea on the Soviet-Korean State Boundary* (Pyongyang, 3 September 1990) [Russian text: *Договор между Правительством Союза Советских Социалистических Республик и Правительством Корейской Народно-Демократической Республики о*

режиме советско-корейской государственной границы (г. Пхеньян, 3 сентября 1990 г.), http://www.mid.ru].

[239] The Treaty stipulates that the two States have equal rights to use its waters and requires from their competent authorities to take appropriate measures to ensure that these rights are respected. The Treaty imposes restrictions and requirements with respect to works aimed at altering the river channel, improving the river banks, maintenance, construction and demolition of hydro- technical installations and prevention of pollution by chemical and other substances (Article 17). It addresses such issues as navigation and exploitation and conservation of fisheries and other aquatic living resources (Article 19). It also provides that the parties will conclude a separate agreement concerning economic uses of the Tumen waters (Article 20).

[240] The Hailaer River–Lake Dalai (Hulun) project envisages the water transfer of around 1.05 km^3 annually (or 30 percent of the flow of the Argun River). It is expected that Chinese water withdrawal from the Argun system will increase four-fold by 2030 compared to 2000. See: *Second Assessment*, *supra* note 7, 10; a WWF report describes water transfers as a serious new challenge which may affect bilateral relations: "'Uncoordinated water transfer from Argun (Hailaer) River to Dalainor (Hulun) Lake via a canal built by 2009 despite objections from the Russian side can lead to a dramatic deterioration of the environmental situation in the upper Amur and set a bad precedent in the field of transboundary water resources management." See WWF Report, *supra* note 27, 9.

[241] DIPA was created by Mongolia, China, and the Russian Federation in 1994 to protect and study ecosystems of the region. See V. Kiriliuks and O. Goroshko, DIPA -10 years of cooperation (Chita, 2006); E. Simonov, et al, "Transboundary conservation of wetlands in Dauria and adaptation to climate change," International Congress for Conservation Biology: Report at Wetlands Conservation Section (Beijing, July 2009); Wetlands of the Amur River Basin. Compiled by A. Markina, T. Minaeva, and S. Titova, WWF (Vladivostok, 2008); E. Simonov and T. Dahmer, *Amur-Heilong River Basin Reader*, *supra* note 12. On the on-going Dauria pilot project on adaptation to climate change in transboundary basins under the UNECE TWC, see: Dauria Going Dry: adaptation to climate change in transboundary headwaters of the Amur River Basin, http://www1.unece.org/ehlm/platform/display/Climate Change/Dauria+going +dry.

[242] Regulations of the Joint Russian-Mongolian-Chinese Commission of the *Dauria* International Protected Area; on file with the authors.

[243] *Second Assessment, supra* note 7, 91.

[244] See, for example, the opinion of Muratshina: "In the future, during the development of its western provinces, China plans to build new canals, reservoirs, dams, hydroelectric power stations on the Irtysh River and on other smaller sources of transboundary rivers, which threatens an environmental catastrophe for Eastern and

Central Kazakhstan." K. Muratshina, "The Irtysh River in the Hydro Policy of Russia, Kazakhstan and China" (May 29, 2012), http://russiancouncil.ru/en/inner/?id_4=437; see also G. Saidazimova, "Kazakhstan: Environmentalists Say China Misusing Cross-Border Rivers" (July 13, 2006), http://www.rferl.org/content/article/1069833.html. Some Russian environmentalists also claim that the abstraction of water for irrigation from the Black Irtysh is already being felt in certain Russian regions.

[245] See e.g. E. Sievers, "Transboundary Jurisdiction and Watercourse Law: China, Kazakhstan, and the Irtysh," *Texas International Law Journal*, vol. 37(1), 1-42. Sievers argues, "…that China's project, a 'totalitarian, gigomaniac monument which is against nature,' violates customary international law both in its conception and in China's dealings with co-riparians. Yet, ironically, the emerging international law of watercourses may, in time, support China because of structural weaknesses in this law," at 2. He advocates that the way forward would involve dispute settlement mechanisms: "Specifically , beyond more effective international institutions, such an effort would involve recapturing the original role of scholars in the development of international law and recognizing recent development s in international law as urging acceptance of a mechanism of transboundary jurisdiction for some watercourse disputes," at 2.

[246] "Russia Wary of Possible Water Dispute with China," *Eurasia Daily Monitor* (September 26, 2005), http://www.jamestown.org/single/?no_cache=1&tx_ttnews[tt_news]=30900. In this news story Sergei Blagov reported, "Russian regional officials, water management experts, and media have reiterated their earlier warnings that Russia could suffer economic and ecological damage as a result of Beijing's plans to siphon off some of the waters of the Irtysh River into western China. … China's planned project to divert waters from the Irtysh River could have "catastrophic consequences for several Siberian regions," according to the newspaper *Izvestiya* (September 14, 2005): "More than one million people in Russia could be left without adequate water supplies in case of uncontrolled water diversion from the Irtysh, argued Alexander Scherbakov, head of Rosprirodnadzor in Omsk region."

[247] 2010 Russian-Kazakh Water Agreement, *supra* note 153.

[248] *Agreement between the Government of the Russian Federation and the Government of the Republic of Kazakhstan on Joint Utilisation and Protection of Transboundary Water Bodies* (Orenburg, 27 August 1992) [Russian text: *Соглашение между Правительством Российской Федерации и Правительством Республики Казахстан о совместном использовании и охране трансграничных водных объектов* (г. Оренбург, 27 августа 1992 г.); on file with the authors].

[249] The parties *inter alia* agreed to prevent transboundary impact by refraining from activities which may cause deterioration of the hydrological and hydro-chemical regime of transboundary waters and related ecosystems; taking measures to control and eliminate pollution, and mitigating negative effects of natural phenomena, such

as floods and erosion; taking measures which ensure proper maintenance of hydrotechnical installations and waste treatment facilities (Article 3).

[250] According to the Vienna Convention on the Law of Treaties (Article 34), "A treaty does not create either obligations or rights for a third State without its consent"; Vienna Convention on the Law of Treaties 1969, *United Nations Treaty Series*, vol. 1155, 331. This general requirement of the Vienna Convention is supported by a more specific provision of the UNWC (Article 3, para. 6): "Where some but not all watercourse States to a particular international watercourse are parties to an agreement, nothing in such agreement shall affect the rights or obligations under the present Convention of watercourse States that are not parties to such an agreement."

[251] *Supra* note 169.

[252] One possible explanation of this situation is that the first Commission is composed of the representatives of the national agencies responsible for water resources, whereas the second is comprised of the respective ministries of the environment.

[253] "Transboundary waters" are defined in the 2008 Agreement "as rivers, lakes, streams, and marshes, located on the boundary of the Russian Federation and the Peoples' Republic of China or crossing this boundary" (Article 1); see *supra* note 132.

[254] On the legal status of the principle of equitable utilization as the fundamental norm in the field see, for example, S. McCaffrey, Second Report, [1986] *Yearbook of International Law Commission*, vol. 2, 103-130.

[255] For instance, *Case concerning the Gabcikovo-Nagymaros Project* (Hungary/Slovakia), 1997 ICJ 7, Judgment of 25 Sept. 1997, paras. 78, 85, 147, 150.

[256] For example, the International Network of Basin Organizations (INBO) proposes an approach on the scale of hydrographic units that are river/aquifer basins: catchment areas for surface waters, aquifers for groundwater. It especially recommended that the agreements and strategies, programs, financing arrangements, and controls are designed at the basin level and that cooperation agreements are signed by the riparian countries for large shared rivers, lakes, or aquifers; see, for instance, *Handbook for Integrated Water Resources Management in the Basins of Transboundary Rivers, Lakes and Aquifers, supra* note 66, 13. Hooper and Lloyd include "clear and strong institutional arrangements, supported by clear regulations, decrees, or agreements and with well-defined implementing procedures" among the five main attributes or features crucial for good integrated river basin management, see B. P. Hooper and G. J. Lloyd, *Report on IWRM in Transboundary Basins* (UNEP-DHI Centre for Water and Environment, 2011), 7.

[257] Plan of Implementation of the World Summit on Sustainable Development in *Report of the World Summit on Sustainable Development* (Johannesburg, August 26-September 4, 2002) A/CONF.199/20* (UN, New York, 2002), para. 26 (a).

[258] Working meeting in Peking between the Russian Minister of Natural Resources and the Chinese Minister of Water Resources on April 7, 2005, Press release of the

Ministry of Natural Resources and Ecology of the Russian Federation [Russian text: "7 апреля 2005 г. Министр природных ресурсов Российской Федерации Юрий Трутнев в рамках визита в Пекин провел рабочую встречу с Министром водного хозяйства КНР Ван Шученом," http://www.mnr.gov.ru/news/detail.php?ID=14391&sphrase_id=269366].

[259] *Ibid.*

[260] For a detailed discussion see K. V. Tattsenko, "Analysis of the prospects of Russian Far East and Northwestern Chinese economic transboundary cooperation within the power industry" in WWF Report, supra note 27, 80-87.

[261] *Ibid*., 87.

[262] See, for example, "The Thirsty Dragon: Activists Take on Planned Russian Dams Intending to Quench China's Thirst for Power," *Water Politics* (April 4, 2013), http://www.waterpolitics.com/2013/04/04/the-thirsty-dragon-activists-take-on-planned-russian-dams-intending-to-quench-chinas-thirst-for-power/. The coalition group "Rivers Without Boundaries," which includes Russian, Chinese, Mongolian, and other environmental groups, has been connecting with Chinese banks and other investors, trying to persuade them not to support what they claim haphazard proposals for quick hydropower development in Russia. According to environmental groups, the proposed Trans-Siberian hydro project does not follow any national or international sustainable development principles.

[263] V. P. Karakin, "Approaches to ensuring environmental safety in shared ecosystems along the eastern section of the Sino-Russian border," in WWF Report, *supra* note 27, 56.

[264] I. Brownlie, *supra* note 58, 267.

[265] See: Guide to Implementing the Water Convention (UN, New York and Geneva, 2013), 3; http://www.unece.org/fileadmin/DAM/env/water/publications/WAT_Guide_to_implementing_the_WC/ECE_MP.WAT_39_Guide_to_implementing_water_convention_small_size_ENG.pdf.

[266] See e.g. E. Benvenisti, "Collective Action in the Utilization of Shared Freshwater: The Challenges of International Water Resources Law," *American Journal of International Law*, vol. 90, N 3 (1996), 384-415.

[267] For example, as was noted in one study, "In recent years … despite endless rounds of Russian-Chinese bi-lateral negotiations relating to environmental protection, old problems have not been fully solved and new even more challenging problems have emerged"; WWF Report, *supra* note 27, 9.

[268] J. D. Petersen-Perlman, J. C. Veilleux, M. Zentner, and A. T. Wolf, "Case Studies on Water Security: Analysis of System Complexity and the Role of Institutions," Universities Council on Water Resources, *Journal of Contemporary Water Research & Education*, Issue 149 (December 2012), 5. The authors explain that: "Examining the roots of water resources conflicts suggests a relationship between change, institutions, and scale. These types of conflicts tend to occur where the rate of change with-

in a basin exceeds its institutional capacity to absorb that change … Institutional capacity goes beyond the formal water management institutions to include all facets that contribute to water governance, including economy, military, and infrastructure."

[269] Source: http://www.google.com/imgres?start=261&um=1&hl=zh-CN&sa=X&tbo=d&tbm=isch&tbnid=WOMGxT0wRxclAM:&imgrefurl=http://jeziorki.blogspot.com/2009_08_01_archive.html&docid=95W4rqEyKA3HBM&imgurl=http://upload.wikimedia.org/wikipedia/commons/f/fa/Amurrivermap.png&w=989&h=779&ei=DJixUOrULsjgyQGK_ICQDA&zoom=1&iact=hc&vpx=386&vpy=402&dur=57&hovh=199&hovw=253&tx=139&ty=143&sig=106510550887756129274&page=10&tbnh=131&tbnw=167&ndsp=30&ved=1t:429,r:63,s:200,i:193&biw=1280&bih=715.

About the Authors

Dr Sergei Vinogradov (LL.B., Ph.D. Moscow) is a Senior Lecturer at the Centre for Energy, Petroleum and Mineral Law and Policy, University of Dundee, Scotland, UK. His main area of expertise is international law of natural resources. Dr Vinogradov has published extensively on issues related to transboundary watercourses, environmental regulation of petroleum activities, cross-border pipelines, and protection of the marine environment. He is a member of the International Council of Environmental Law and Commission on Environmental Law of the IUCN/World Conservation Union. He has been involved as a legal consultant on numerous international projects and activities under the auspices of the UN Economic Commission for Europe, the Energy Charter Secretariat, UNESCO, UNEP, UNDP/GEF, and the World Bank. Dr Vinogradov was involved in drafting and negotiating numerous international agreements for the Black and Caspian seas, Dniester, Kura, and other transboundary river basins, and provided legal advice to the Mekong River Commission, International Fund for the Aral Sea, the governments of Azerbaijan, Kazakhstan, Kyrgyz Republic, Mozambique, and Namibia, among others, as well as various national development agencies. He can be contacted at: s.v.vinogradov@dundee.ac.uk.

Professor Patricia Wouters (B.A., LL.B, University of Ottawa; LL.M, University of California, Berkeley; DES, Ph.D., Graduate Institute of International Studies and University of Geneva), founding Director of the Dundee UNESCO Centre for Water Law, Policy and Science and now heads up the China International Water Law programme at Xiamen Law School, China (www.chinainternationalwaterlaw.org), appointed under the Chinese Government Thousand Talents programme. She has published, lectured and advised extensively (UN, World Bank, Asian Development Bank, Mekong River Commission) on issues related to the rules of international law that govern transboundary water resources. Professor Wouters has served on numerous global advisory panels and currently chairs the International Advisory Committee of the UN University Institute of Water, Environment and Health (UNU-INWEH) and serves on the Global Water Partnership Technical Experts Committee (GWP-TEC). She continues to supervise Ph.D. and graduate students from around the world, contributing to the development of a new generation of local water leaders with expertise in international water law. She can be contacted at the following email address: pkwoutersxiamen@hotmail.com. Her research profile is also available at: http://dundee.academia.edu/ PatriciaWouters.