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Managing Environmental Water Use Conflicts: International Experience

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Abstract. In recent decades, there has been a considerable growth in the number of environmental conflicts worldwide, with environmental conflicts over water use standing out for their unique characteristics, causes, and challenges in resolution. Based on a number of examples from foreign (Western European and North American) conflict resolution and environmental mediation practices, the article proposes principles for an optimal model for the successful settlement and resolution of environmental conflicts related to water use through direct negotiations and mediation that takes into account the interests of all parties involved and seeks consensus (deliberative democracy). A clear and consistent state economic and environmental policy that combines effective interdepartmental coordination, reasonable cost distribution, and a broad dialogue between the state, business, and civil society helps to prevent and resolve environmental conflicts over water use. It is concluded that every interested party must participate in negotiations (or mediation) on equal terms in order for environmental water use conflicts to be managed as effectively as possible. All parties must also acknowledge the benefits of mediation over conflict escalation or litigation, have access to a qualified and reliable mediator, be willing to carry out the agreement reached over the long term, and have an efficient system in place to monitor the agreement's implementation.

Keywords: environmental conflicts, water use, water wars, negotiations, mediation, consensus building

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Управление экологическими конфликтами водопользования: международный опыт

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Аннотация. В последние десятилетия в мире наблюдается значительный рост числа экологических конфликтов, среди которых выделяются экологические конфликты водопользования, имеющие свои специфические характеристики, причины и трудности урегулирования. На основе ряда примеров из зарубежной (западноевропейской и североамериканской) практики конфликторазрешения и экологической медиации предлагаются принципы оптимальной модели успешного урегулирования и разрешения связанных с водопользованием экологических конфликтов посредством прямых переговоров и посредничества (медиации) на основе учета интересов всех сторон конфликта и поиска консенсуса (делиберативной демократии). Предотвращению и успешному урегулированию экологических конфликтов водопользования способствует ясная и последовательная государственная экономическая и экологическая политика, сочетающая эффективную межведомственную координацию, обоснованное распределение издержек, широкий диалог государства, бизнеса и гражданского общества. Наиболее эффективное управление подобными конфликтами обеспечивается при участии всех заинтересованных сторон конфликта в переговорах (или медиации) на условиях равенства; признании всеми сторонами конфликта преимуществ переговоров (медиации) по сравнению с дальнейшей эскалацией конфликта или судебным разбирательством; наличии квалифицированного и заслуживающего доверие всех участников конфликта медиатора (посредника); готовности участников переговоров в полной мере выполнять в долгосрочной перспективе принятые на себя по итогам переговоров и закрепленные в достигнутом соглашении обязательства; наличии действенной системы контроля выполнения сторонами взятых на себя обязательств.

Ключевые слова: экологические конфликты, водопользование, водные войны, переговоры, медиация, построение консенсуса

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Introduction

In recent decades, the world has seen a significant increase in the number of environmental conflicts.¹ most often over land use, water use, the ambient air quality (pollution by harmful emissions in the urban environment), and the management of various types of waste (solid municipal, toxic, radioactive, etc.). The degradation of environmental (renewable) resources—which include water—in areas affected by environmental conflicts is a consequence of human—primarily industrial—activity, with negative changes in many, if not most, cases becoming irreversible, negatively affecting the health of the local population.

The primary cause of environmental conflicts is the implementation or planning of actions connected to the use of renewable (environmental) natural resources, which lead to or may lead to failures in natural ecosystem restoration processes. Almost half a century ago, heated debates between economists, environmentalists, and public representatives erupted in the Soviet Union over the grandiose project of diverting large Siberian rivers (evasively referred to as “river flow transfer”) to Central Asia and establishing a pulp and paper mill on Lake Baikal.

Specifics of “Water Conflicts”

Environmental conflicts are difficult to manage because they involve a large number of participants, the conflict is fought over a wide range of issues, and it is extremely challenging, if not impossible, to quantify potential damage (including irreversible consequences of the conflict) in financial terms. Water-related conflicts are tricky and expensive to control and resolve. The dispute over water use in the United States (the state of Washington) involved around 40,000 landowners who filed nearly 4,000 lawsuits, with the resolution taking more than 30 years [Pharris, Wilson, Reichman 2002].

Since the boundaries of ecosystems (as well as the basins of many rivers) do not coincide with state borders, most environmental problems associated with water use (e.g., water pollution, reduced water runoff, etc.) are transboundary in nature, that is, they affect two or more neighboring states, which significantly complicates their solution, and this is potentially fraught with interstate conflicts, including armed ones.

According to one projected scenario, by the middle of the 21st century, increasing demand for water for agricultural and industrial production, as well as household consumption, will lead to a sharp increase in competition for access to water resources in almost all regions of the world, with the exception of only a small group of countries

¹ In this article, an environmental conflict is defined as the interaction of two or more parties who believe that their goals regarding changing (or maintaining) the state of the natural environment (life-supporting systems—ecosystems) are incompatible.

with large water reserves [Gleditsch et al. 2006]. Countries whose territory is located in the basins of large rivers can potentially unleash armed “water wars” [Gleditsch et al. 2006]. A number of modern states are directly dependent on water coming from the territory of neighboring states, which is associated with ensuring economic and food security, including providing the population with drinking water. “Water conflicts” threaten agriculture, and the pollution of water resources and especially the shortage of clean drinking water provokes the so-called “ecological migration”. In African countries, for this reason, people often move to another area or even to another country [Mbonile 2005].

In Africa, “water conflicts” are caused by the presence of different types of traditional and modern irrigation systems, as well as the use of water for other purposes (e.g., hydropower).

Environmental conflicts over water use have quantitative (lack of necessary volumes of water) and qualitative (purity of water) dimensions. Since water is necessary for the survival of humans and other biological species, sustainable water use in human society also has a psychological dimension associated with people’s perception of the reliability (“security”) of water supply of the required quality and volume. Conflicts may arise over water quality standards (what is considered normal), the maximum permissible concentration of water pollutants, etc.

Conflicts over the scale of water consumption are associated with the perception in a number of regions of the world (arid zones, above all) of water resources as limited and in acute shortage (unlike, for example, air), which are simultaneously claimed by several consumers. Economic development is impossible without water: it is required by agriculture, extractive and processing industries, and the energy sector. Water is equally necessary for the survival of natural ecosystems, as well as for recreational purposes. The quantity (volume) of water consumed is associated with its quality, since significant volumes of water minimize the effects of its pollution, and in conditions of water shortage, even an insignificant amount of harmful pollutants makes water unsuitable for consumption by living organisms.

At present, environmental conflicts over water use can occur due to differences in people’s ideas about how water resources should be distributed between sectors of the economy that need them, what volumes should be left untouched to support the life of ecosystems, how much should be allocated for domestic and recreational needs without risking sustainable water supply in the future.

Water use conflicts often arise in connection with the planning or implementation of large-scale projects for the construction of irrigation systems, hydroelectric power stations and various types of dams, land reclamation, the preservation of wetlands (threat of their drainage) and individual living organisms in the water, as well as the distribution of available volumes of water between different consumers.

Managing “Water Conflicts”: Choosing a Strategy

The selection and application of an optimal set of institutions and technologies for managing modern environmental water use conflicts should be made taking into account the specific features of each specific conflict (number of participants, essence of the problems, perception of the conflict by the parties, etc.), local, regional and national political and cultural context, as well as the capabilities and limitations (shortcomings) of conflict resolution technologies (direct negotiations, mediation, arbitration, court, direct or structural violence). The global trend in modern conditions is to manage environmental conflicts primarily through direct negotiations or mediation, based on the principles of consensus building (deliberative democracy).

The prevention and successful resolution of environmental conflicts over water use is facilitated by a clear and consistent state economic and environmental policy that combines effective interdepartmental coordination, reasonable distribution of costs, and a broad dialogue between the state, business, and civil society.

Managing environmental water use conflicts through negotiations and mediation has a number of advantages (voluntary participation and equal opportunities for participants to influence the course and outcome of negotiations; confidential nature of negotiations; minimization of time and financial resources; no risk of “losing”, taking into account the interests of all parties to the conflict) and objective limitations (the potential to use negotiations and mediation to delay the conflict resolution process, and the principle of confidentiality to conceal important information from the general public) [Demchuk 2020c].

In Western European and North American countries, water use conflicts are regulated primarily through consensus-oriented negotiations (or mediation) within the framework of a combination of statutory decision-making procedures and a participatory style of public policy formation and implementation [Demchuk 2020a].

The choice of technologies and methods for managing water use conflicts in Asian and African countries depends on the historically established institutional and cultural context; the range of approaches is quite wide: from “command” decision-making “at the top” to consultative procedures and consensus-building techniques.

In the early 2000s, American researchers T. d'Estree and B. Colby [2004] conducted a study on the experience of regulating environmental conflicts over water use in the western states of the United States. The study was based on an analysis of publications in scientific literature and the press, interviews with conflictologists, and also participants in conflicts.

The experience of studying and systematizing successful methods of regulating environmental conflicts over water use was previously described in the work “Park City Principles”.² In 1991, three workshops on water use

² Western Governors Association. (1991). *Park City Principles (document produced following a series of three workshops developed by Western Governors Association and Western States Water Council)*. Park City, Utah.

issues were held in Park City, Utah, bringing together employees of the federal government, regional and municipal services from the western United States, representatives of indigenous peoples (Indian tribes), business structures and the academic community. The participants in the workshops developed principles of effective water use policy: formal recognition of divergent values and interests; a systems approach taking into account the needs and interests of all stakeholders in a conflict related to water use within a specific water basin (regardless of administrative boundaries); development of a common approach to policy formation that provides for predictability, flexibility and “feedback”; the principle of decentralization in decision-making; recognition of the important role of representatives of indigenous peoples; priority is given to standards of incentives and negotiations, rather than instructions “from above”; stimulation of broad participation of civil society in decision-making and implementation.

The first major environmental water use conflict in the United States to be resolved through mediation was the conflict over the choice of a site for the construction of a flood control dam on the Snoqualmie River in the state of Washington [Napier 1998]. The conflict arose among active supporters of the dam’s construction and opponents of the project, concerned about its environmental consequences, farmers who feared the prospect of a shortage of water for irrigating their lands, and representatives of the urban community, who spoke of the danger of chaotic urban expansion at the expense of rural areas.

Negotiations with mediators continued for almost a year. The parties eventually reached an agreement on the construction of the dam, flood measures and land use monitoring in areas adjacent to the dam, and the establishment of a coordinating council in the river basin.

Interest in managing environmental water use conflicts through negotiations was strengthened by the successful resolution of the long-running (1973 to 1979) Greylock Dam dispute, which arose during discussions about the construction of a thermal power plant for which the dam was planned to provide cooling, which, in turn, threatened to reduce the volume of water for the needs of farmers in the surrounding areas and could lead to the extinction of waterfowl on the river banks. Environmentalists and government officials insisted on minimizing the withdrawal of water from the river, filing a class action lawsuit against the U.S. Army Civil Engineers, responsible for the construction of dams, and the Rural Electrification Administration, accusing them of issuing an official permit for the construction of the dam without conducting an environmental impact assessment of the project.

At the initial stage of the conflict, the parties thought that the trial would drag on for a long time. The developers were eager to complete the dam within the planned time frame. During the negotiations, all ten interested parties (government agencies, environmental NGOs, and developers) came to a mutually

acceptable agreement on the construction of the dam, while simultaneously providing environmentalists and the Nebraska government with guarantees to maintain an acceptable level of river flow. Under the terms of the agreement, a fund was also created to support environmental projects (including preserving the habitat of cranes). The carefully verified agreement provided for a “cap” for the volume of water consumed by the thermal power plant, a minimum flow rate of the river at any time during the control measurement, the introduction of monitoring procedures and control over the parties’ compliance with the agreements reached.

Similar conclusions can be drawn from the analysis of European experience in managing water use conflicts.

British history records a case in the 17th century when the drainage of swamps and other land improvement activities that were beneficial to landowners led to the upper reaches of the River Cam becoming silted up, which had a detrimental effect on the income of boatmen and traders in Cambridge. In 1702, the British Parliament passed a special resolution to create a society called the *Conservators of the River Cam* to maintain the normal passage of ships along the river and resolve disputes between boatmen and landowners living along the banks of the river.

In the late 20th century, a debate between anglers and canoeists seeking unimpeded access to water for recreational purposes, water management companies and coastal landowners sparked a broad discussion in the UK. In 1997, a specially organised conference brought together stakeholders to voice their views and attempt to find mutually beneficial solutions to two key issues—ensuring the right to free access to water for recreational purposes and the impact of increased water use on the state of water resources. Under UK law, landowners’ property rights extend to the water area along a coastal land plot from the water’s edge to the middle of the river, and the rights of passage of any kind of floating craft (vessels) are recognised only if the river has been considered navigable “since time immemorial”. Anglers who have bought licenses from coastal landowners to fish in “private properties” are convinced that they are following the letter of the law to the fullest extent. Since navigation rights do not extend to most small British rivers, it is an offence (trespassing) to land on the riverbank without the consent of the legal landowner, so the occasional British canoeist who lands on the riverbank is in practice committing an offence, thereby also coming into conflict with the ‘law-abiding’ fishermen who regard the canoeists as offenders.

All participants in the discussion agreed on the need to establish dialogue to prevent potential conflicts.

A representative of the landowners (hardly impartial, as he was interested in selling licences) offered to act as a mediator in the negotiations between the anglers and

canoeists, expressing optimism that a mutually acceptable agreement on shared water use could be reached and that all the parties' interests could be met. The negotiators agreed on the need to ensure sustainable water use. The Water Access Conference clearly identified two approaches to resolving environmental water use conflicts in the UK: participatory planning as a way of achieving consensus to prevent potential conflict, and mediation as the most effective method of managing and resolving conflict. The consensus-based approach to planning is based on the principle of planning *with* people, not just *for* people.

Environmental mediation has been successfully used to resolve international environmental water use conflicts on numerous occasions [Dryzek 1987]. An example is the conflict between the authorities of the Canadian province of British Columbia and the American city of Seattle. The city of Seattle planned to raise the water level of the dam on the Skagit River in order to increase the city's energy supply from a hydroelectric power station. The British Columbia leadership, not without reason, opposed such a project, drawing attention to the fact that after the water level in the river rose, significant areas of land in the Skagit Valley on Canadian territory would be flooded. A joint American-Canadian commission took part in the settlement of the dispute through mediation. During the discussions that lasted about a year, a plan was developed to resolve the problem, according to which British Columbia guaranteed the additional amount of electricity Seattle needed, transmitted from its territory, and the Seattle authorities agreed not to change the height of the dam [Demchuk 2020b].

Conclusion

Based on international experience in the settlement of environmental water use conflicts, it can be concluded that the most effective management of such conflicts is ensured by the participation of all interested parties to the conflict in negotiations (or mediation) on the basis of equality; recognition by all parties to the conflict of the advantages of negotiations (mediation) compared to further escalation of the conflict or litigation; the presence of a qualified mediator (intermediary) worthy of the trust of all parties to the conflict; the willingness of the parties to the negotiations to fully implement in the long term the obligations assumed as a result of the negotiations and enshrined in the agreement reached; the presence of an effective system for monitoring the fulfillment by the parties of the obligations assumed. Such a model should take various forms depending on the specifics of each conflict.

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