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In This Issue

The Environment, Human Rights, and Conflicts in the South Caucasus and Turkey: Transboundary Water Cooperation as a Mean to Conflict Transformation

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This paper focuses on environmental issues as a human rights concern in the context of conflicts and tensions in the South Caucasus and Turkey. The main objective of the paper is to elaborate if environmental issues can become a tool for dialogue and conflict transformation. The authors of the paper believe it is key for conflict transformation to assess and seek solutions for environmental issues even in the absence of political resolutions to conflicts.

The paper starts off by surveying the international and regional legal frameworks within which the countries of the South Caucasus and Turkey operate when they (mis)manage environmental issues. It also reviews the projects implemented by different international agencies, institutions, and donors aimed at better cooperation on environmental protection in the region. The paper then discusses some cases of transboundary environmental issues in the context of human rights and conflicts in the region, concentrating on the Kura-Araks basin and the impact of hydropower plants, dams, and reservoirs on the basin and the environment at large with some cases of dire non-cooperation and some cases of relative success and collaboration. The paper also surveys the sources of water pollution in the region.

The paper finishes off with a set of recommendations for conflict transformation and dialogue with a focus on environmental rights. The authors believe that although conflicts may seem a hindering factor for cooperation, for the sake of the environment and human rights, routes for cooperation should be established.

Introduction

> "The impact of water on all aspects of development is undeniable: a safe drinking water supply, sanitation for health, management of water resources, and improvement of water productivity can help change the lives of millions", said Dr. Rajiv Shah, United States Agency for International Development (USAID) Administrator on World Water Day in 2011 (US Agency for International Development 2011).

This paper focuses on environmental issues as a human rights concern in the context of conflicts and tensions in the South Caucasus and Turkey. By referring to success stories from the region, we are seeking a framework for conflict transformation and dialogue with a focus on environmental rights. Our main objective is to elaborate if environmental issues can become a tool for dialogue and conflict transformation. We believe it is key for conflict transformation to assess and seek solutions for environmental issues even in the absence of political resolutions to conflicts.

From the perspective of conflict transformation, it is of particular interest to study the transboundary character of environmental issues. One such environmental issue that has both a transboundary character and is also very visible and tangible for people on the ground is the water issue, particularly its availability and quality necessary for sustaining flora, fauna, and humans' life. We, therefore, take water flow modification and pollution in rivers as the two main variables throughout the case studies of this paper.

We see environmental rights linked to basic human rights such as those to air, water, food, shelter, and land. Moreover, the most fundamental right to life cannot be realized without the basic right to clean water, air, and land. Adebowale et al. argue: "human rights, the right to life and the right to development cannot be realized in the absence of the right to a healthy environment" (Adebowale, et al. 2001). Thus, a clean and sustainable environment is people's right to possess as the freedom of speech or the right to education and work.

Studying the triangular relationship between conflicts, the environment, and human rights is the main focus of this paper. The conflicts in the South Caucasus, namely the Nagorno-Karabakh, Abkhazia, and South Ossetia conflicts, the tense or absent Turkey-Armenia relations[32], as well as other negative dynamics between the

[32] We discuss environmental issues in the context of conflicts for Turkey only in its relations to the South Caucasus.

countries, societies, and communities in the region affect the environment and ecology, including people's lives. These protracted conflicts in the South Caucasus and its neighborhood have led to the violation of environmental rights of the populations of the region. It is, therefore, important to first understand what environmental problems exist in the region; how they are exacerbated by the lack of cooperation; and whether further hazardous impact can be mitigated.

As a matter of fact, due to the conflicts in the South Caucasus and Turkey, hundreds of thousands of people were forced to flee their lands, which deprived them of their basic rights, including that to property. The rights to land and resources were one group of such violated rights and the most immediate to notice. However, the impact of conflicts on the environment and rights related to the environment go much beyond the rights to land and resources. As nature is not limited to borders, and the deterioration of the environment has cross-border implications, not only does environmental protection stem from the need to protect livelihoods, but it is also important for avoiding future conflicts or the exacerbation of current ones. As it is argued in Jensen et al., environmental issues, depending on how they are handled, have a tremendous potential either for peacebuilding or conflict exacerbation and escalation (Jensen, et al. 2013). In other words, cooperation around environmental protection can act not only as a tool for conflict transformation but also for conflict prevention.

The countries and societies in the South Caucasus, as well as the neighboring countries not only share borders and hence the environment but also a history of political conflicts. However, instead of viewing common environmental problems as areas to collaborate on, the governments often view these as another reason for blaming the "other side" and thus exacerbating conflicts. In addition, the environment suffers not only due to existing political conflicts, but also as a result of years of failed policies. For instance, there is no conflict between Armenia and Georgia, or Georgia and Azerbaijan, yet there seem to be no cooperation here either, and the polluted waters flow from Armenia to Georgia and then combined with polluted waters from Georgia, they flow to Azerbaijan, which is due to the overall lack of care towards the environment. We argue that for the sake of providing adequate standards of living for people as well as for securing biodiversity, it is within the interests and obligations of states to frame and implement actions aimed at the prevention of pollution and protection of the environment. Since common problems demand joint solutions, regional and international cooperation is central for addressing these issues.

Legal Frameworks and Projects Implemented in the Region

While discussing human rights and environmental protection, it is first necessary to put the subject into a legal framework. A brief look at the internationally accepted rules and norms protecting the environment from hazardous actions may provide some basis to cement human rights and the environment as two mutually inclusive notions. As environmental protection is also a state's responsibility, this conceptual part sheds light also on regional agreements and national policies. Studying the international dimension of environmental protection is important to develop regional and local management mechanisms for preventing the cross-border implications of ecological disasters.

The International Legal Framework

The rise of awareness about environmental issues propelled the establishment of a legal framework on the environment on the international level. International treaties and agreements are considered as major sources of international environmental law, and since the 1970s, plenty of environmental protection debate has been heavily articulated in international conventions (Ivanova and Escobar-Pemberthy 2017). First of all, the United Nations (UN) General Assembly founded the UN Environment Program (UNEP) in 1972 with the purpose of assisting countries in cooperating for environmental protection, providing general guidelines and policy recommendations (Samaan 2011).

The Stockholm Declaration on the Human Environment of 1972 and Rio Declaration on Environment and Development of 1992 are accepted as the cornerstones of international environmental law. The environment and human rights became connected through the basic principles outlined in these declarations, and other forthcoming multilateral agreements. As Guenther Handl argues, "The Stockholm Conference was the first taking stock of the global human impact on the environment – an attempt at forging an outlook on how to address the challenge of preserving and enhancing the human environment… [Whereas] by the time of the Rio Conference, the task for the international community became one of systematizing and restating existing normative expectations regarding the environment, […] [while] positing the legal and political underpinnings of sustainable development" (Handl 2012).

The underlying principle of the Stockholm Declaration is the "human's fundamental right to […] adequate conditions of life in an environment […] that permits a life of dignity and well-being" (Report of the United Nations Conference

on the Human Environment 1972). The Rio Declaration in turn claims that "human beings are entitled to a healthy and productive life in harmony with nature" (UN Conference on Environment and Development 1992). In addition, the most important provision of both declarations is establishing a state responsibility to ensure that its activities within own area do not cause damage to the environment outside of the national jurisdiction or in other countries (Handl 2012). It is also worth to mention that the latter provision is an important point of reference for this study.

Other international documents have linked the environment with development. Along with economic development and social development, environmental protection stands as one of the three main pillars of sustainable development identified in the 2002 Report of the World Summit on Sustainable Development (Report of the World Summit on Sustainable Development 2002). The UN Human Rights Council Resolution in 2005 recognized the link between human rights, environmental protection, and sustainable development (Boer and Boyle 2013). Environmental sustainability stands in parallel with poverty eradication and development as a core principle of the Sustainable Development Goals of the UN, adopted in 2015 (UN Sustainable Development Goals Knowledge Platform 2016).

On paper, these international environmental laws seem excitingly inspiring, but they are not without deficiencies, especially in regards with implementation since international organizations do not possess any authority of enforcement.

The Regional Legal Framework

The UN Economic Commission for Europe (UNECE), set up as one of the five regional commissions of the UN in 1947, has negotiated several environmental conventions. The Convention on the Protection and Use of the Transboundary Watercourses and International Lakes (referred to as the Water Convention), adopted in 1992 in Helsinki and entered into force in 1996, aims at strengthening transboundary water cooperation and measures for ecologically sound management, as well as fostering the implementation of integrated water resources management (Introduction. About the UNECE Water Convention n.d.). Furthermore, the Water Convention requires parties to prevent, control, and reduce transboundary impact, and parties bordering the same transboundary waters have to cooperate by entering into specific agreements and establishing joint bodies (Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Helsinki, 1992) 1992). Among the South Caucasus countries,

only Azerbaijan has thus far joined[33] the Water Convention (Status of the Water Convention 1992). It also joined the Water and Health Protocol. While Armenia and Georgia have only signed, yet not ratified the Protocol to the Convention (Status of Water and Health Protocol 1999). As the official web page of UNECE elaborates, this Convention promotes cooperation among countries with transboundary water issues through joint partnerships (Water Convention n.d.).

There are a few other important international agreements, which only one or two countries of the region have joined so far. Yet, these are important for the joint control of environmental issues particularly those of a transboundary character, and therefore the accession of the other countries to these agreements is important. The Espoo Convention (with the formal name "Convention on Environmental Impact Assessment"), adopted in 1991 and entered into force in 1997, sets out the obligations of parties to assess the environmental impact of certain activities at an early stage of planning and to notify and consult each other on all major projects that are likely to have a significant adverse environmental impact across boundaries (ESPOO Convention 1991). Both Armenia and Azerbaijan have joined the Convention, while Armenia has also ratified the Protocol to the Convention (Status of Protocol on SEA 2003). Georgia is not party to the Espoo Convention (Status of the ESPOO Convention 1991).

Another relevant treaty is the Aarhus Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters, adopted in 1998. This one is particularly relevant because it links environmental rights and human rights and imposes obligations on parties regarding access to information, public participation, and access to justice in environmental issues (Foundation for Democracy and Sustainable Development n.d.). It is the only Convention among the described ones that all three countries of the South Caucasus have joined (Status of the Aarhus Convention 1998). It means that all three countries ratified the Convention, but only Armenia and Georgia signed the Protocol (Status of the Protocol to Aarhus Convention 2003). Additionally, Armenia and Azerbaijan have joined the Convention on Transboundary Effect of Industrial Accidents (Convention on the Transboundary Effects of Industrial Accidents 1992), the aim of which is to help its members to cooperate and prevent industrial accidents that can have transboundary effects as well as to get prepared for such accidents in case they should occur. This convention also encourages

[33] There are several stages of joining a convention – signing and then ratification or accession (the latter two are referred to as "joining" in this paper). Other terms such as "acceptance" and "approval" are also used instead of "ratification" or "accession".

cooperation and joint research as well as information exchange. On the other hand, however, none of the countries of the region are signatory to the UN Watercourses Convention, adopted in 1997 and entered into force in 2014. This Convention in fact aims to foster cooperation for regular exchange of data and information, protecting ecosystems, preventing and reducing pollution including during armed conflict (Schulz 2014).

Additionally, the National Environmental Action Plans (NEAP) have been adopted by all three countries to reform national legislation in order to address environmental issues adequately. And yet, while Armenia and Georgia have chosen to renew their NEAPs, Azerbaijan decided to opt for other national environmental strategies and plans (Leonardelli 2016).

Like many other countries that incorporate environmental rights into their domestic legislations, Armenia, Azerbaijan, and Georgia as well accepted responsibility upon membership to the European Neighborhood Program in 2004 to initiate environmental reforms. Within another regional initiative of the EU, the Eastern Partnership (EaP), established in 2011, the member countries and the EU adopted a Roadmap in the Vilnius Summit in 2013, aimed at monitoring reforms including those in environmental matters. A flagship institute, the EU Shared Environmental Information System, was launched to strengthen environmental governance and partnership (European Commission 2016).

One of the most important regional environmental frameworks is the EU Water Framework Directive (WFD), which is the key operational tool of the EU Water Initiative (EUWI) that aims to provide water reform policies for the EU countries and beyond. Its objectives per the EUWI Report of 2016 include improving the institutional and regulatory framework and managing water in a way that contributes to water, food, and energy security and economic development (European Union Water Initiative 2016). The 2014 assessment report of the EUWI on National Policy Dialogues shows that Armenia, Azerbaijan, and Georgia have achieved significant improvements in adopting the principles of Integrated Water Resources Management (IWRM) in which the EU WFD and UNECE Water Convention serve as a framework to facilitate the transition, although transforming those frameworks into practice remains a challenge. There is a big gap between commitment and enforcement; enough attention is not paid to monitoring and inspection as well as engaging the regulated community and deterring violations, which weaken the effectiveness of environmental laws (UN Environmental Programme 2014). The lack of transparency and public awareness are also mentioned as grave concerns (Mardiste, et al. 2014).

In general, there is a serious lack of regional cooperation bringing all three countries under one legal umbrella. As the case studies below demonstrate, the region has complex transboundary water issues that cannot be properly addressed without such cooperation.

The Projects Implemented in the Region

There have been different capacity-building and sub-regional cooperation projects that include the South Caucasus countries, such as the project on Capacity Building in Eastern Europe, Caucasus and Central Asia in 2004-2008 (Subregional Cooperation and Capacity-Building 2017). The EUWI Plus for the Eastern Partnership (referred to as "EUWI+4 EaP" or " EUWI plus East") is another such program that aims to bring domestic legislation in line with the EU policy in water management, such as the EU WFD, specifically concentrating on transboundary water management, water quality, and equitable sharing of water at the basin level (EU Neighbours 2016). This project is not however the first of such initiatives. In the past years, other projects supported by donor organizations such as the United Nations Development Program (UNDP), the Swedish International Development Cooperation Agency (SIDA), the USAID, the EU Technical Assistance to the Commonwealth of Independent States (TACIS), the Organization for Security and Cooperation in Europe (OSCE), and the North Atlantic Treaty Organization (NATO), have taken place in the region aiming at legal, policy, and planning activities. For instance, USAID, in collaboration with Development Alternatives Inc. (DAI), implemented the South Caucasus Water Management project in 2000-2002 aimed, "at strengthening co-operation among water agencies at local, national and regional levels and demonstrate[ing] integrated water resources management" (UN Environmental Program 2002). And yet, even though there are bilateral agreements between Georgia-Azerbaijan (1997) and Georgia-Armenia (1998) regarding transboundary environmental protection, until now there is insufficient cooperation and lack of data exchange among these pairs of countries, which has been a major problem preventing productive water resource management so far (UN Water Activity Information System 2007).

In addition, between 2002 and 2007, NATO and the OSCE realized the South Caucasus River Monitoring Project, which is considered the only reliable data in the field and is highly valued by experts from all three countries (North Atlantic Treaty Organization 2011). Its general objectives were to establish the social and technical infrastructure for a joint international transboundary river water quality and quantity monitoring, data sharing, and watershed management system among Armenia, Azerbaijan, and Georgia. However, one of the general problems of such

projects is that there is little or no cooperation among organizations and agencies who carry out such projects, as despite the overlapping activities, they do not share or exchange information also due to the lack of legally binding data exchange requirements (Campana, et al. 2008).

Environmental protection has turned into an international issue for decades now. Environmental protection, development, and poverty reduction have become mutually inclusive matters in internationally accepted rules and norms, including Sustainable Development Goals (SDGs) of the UN. Additionally, there are regional initiatives in Europe, which cover the post-Soviet countries in the South Caucasus too. These regulations are expected to facilitate the management of environmental matters specifically with a transboundary impact. The overview of the international and regional legal frameworks demonstrates that regional cooperation has sufficient initial legal ground. However, existing problems, be it related to domestic governance or inter and intra-state conflicts, significantly reduce the prospects for cooperation, without which achieving visible impact to protect the environment is less likely. The case studies will, therefore, shed light on environmental issues to reveal deficiencies in the transition from policies to actions.

Transboundary Environmental Protection in the Context of Human Rights and Conflicts in the Region: Water Flow (Mis-)Management and Pollution

A General Overview

In the Soviet Union, the South Caucasus countries did not have any overt hostilities with each other concerning transboundary water management because the Kura-Araks river basin, which is considered the main source of water for these countries, was within the common borders of the Soviet Union. However, changing political dynamics between neighboring countries has been a big factor influencing the management of cross-border water issues (O'Hara 2000). As such, the lack of adequate cooperation stemming from the Nagorno-Karabakh conflict has caused a big hurdle for developing a viable and efficient multilateral water management system in the region. For example, there are no water related treaties among the three countries, a condition directly related to the political situation in the region (Campana, et al. 2008). The conflicts are further exacerbated by tensions related to transboundary water resources. These tensions are conditioned by factors such as the unequal distribution and reduction of water; the construction of uncoordinated water structures and irrigation systems; the use of water and water structures in conflict zones as provocation tools; pollution; weak cooperation between

governments, environmental structures, and NGOs; the lack of compatibility of water standards, etc. (Yildiz 2017).

However, a study by Campana based on in-depth interviews with environmental experts from the countries of the region demonstrate that the interviewees (93.3 percent) agreed that water resources cooperation among Armenia, Azerbaijan, and Georgia could lead to peace and improved welfare in the region (Campana, et al. 2008). For this to be realized, the countries are expected to sign, ratify, and implement regional and international agreements. And yet, as discussed above, there are several international agreements on addressing environmental issues that have been signed by the countries in the South Caucasus, but rarely all three have signed or ratified an agreement, which promotes regional cooperation based on mutual accountability and commitment. Although conflicts may seem a hindering factor for cooperation, for the sake of the environment and human rights, routes for cooperation should be established. It is therefore necessary that the South Caucasus countries sign and ratify environmental agreements to ensure coordinated management, accountability, and mutual exchange of statistical data on the environment.

The Kura-Araks Basin

In the regional context, the Kura-Araks (or Aras in Turkish) river basin, specifically the management of these rivers as well as their tributaries, is of most interest. The transboundary river basin area is about 190,110 km^2, and the majority of this is located in Azerbaijan (31.5 percent), Georgia (18.2 percent), and Armenia (15.7 percent). The rest is located in Iran (19.5 percent) and Turkey (15.1 percent) (UN Food and Agriculture Organization 2009). The main use of the Kura-Araks waters in is agriculture in Georgia and agriculture and industry in Armenia. In Azerbaijan, the Kura-Araks water is the primary source of fresh water, including 70 percent drinking water.

There are rigid problems related to the quality and quantity of water concerning the South Caucasus countries. In general, the Transboundary Diagnostic Analysis (TDA) indicates several common transboundary problems concerning the Kura-Araks basin – freshwater flow modifications, the pollution of drinking water, the loss of ecosystems, the exploitation of fisheries, the fluctuating climate, such as droughts and floods (UN Water Activity Information System 2007). To expand, Campana and et al.'s statement depicts the situation: "In general terms, Georgia has an oversupply of water, Armenia has some shortages based on poor management, and Azerbaijan has a lack of water. […] The basin is excessively polluted due to a lack of treatment for urban wastewater and agricultural return flows, pesticides

such as DDT that are used in Azerbaijan, and the recent resurgence of chemical and metallurgical industries in Georgia and Armenia" (Campana, et al. 2008). Almost 80 percent of the countries' wastewater loads are discharged into the surface waters of the Kura-Araks basin (Campana, et al. 2008).

In addition to pollution, a lot of water flow modification has taken place in the past years mainly due to the constructed water dams and reservoirs and hydropower stations on the rivers. According to 2009 data, more than 130 major dams and reservoirs exist on the tributaries of the Kura and Araks rivers, while two big ones exist on the rivers themselves (UN Food and Agriculture Organization 2009), the biggest being the Mingachevir dam in Azerbaijan (Kerres 2010). These dams and reservoirs are used for hydropower and irrigation, as well as for regulating the river flow and preventing floods (Kerres 2010). Although dams and reservoirs have an important socio-economic role, they also result in the reduction of hydrological flow in rivers which in its turn negatively affects the environment and humans downstream. As a result of human activities, it is calculated that 40 percent of the water in case of Kura and 27 percent of the water in case of Araks is not discharged to the Caspian Sea (Kerres 2010).

The pollution of rivers due to heavy metal extraction, mining, and other activities is also an issue that transcends borders in the region since the polluted water in one country flows into one of the major rivers, either Araks or Kura, that eventually end up in the Caspian Sea. Pesticides and fertilizers used in agriculture, as well as untreated wastewaters are yet another cause for river pollution. Although water treatment facilities were installed throughout the Kura-Araks basin during the Soviet times, few of those if any are operational today (Kerres 2010). Since all three countries use waters from the Kura-Araks basin for their agricultural needs, while for Azerbaijan these rivers are also a source of drinking water, from the human rights perspective, keeping these rivers clean stems from the obligation of all these states towards their citizens to provide them with adequate standards of living (Article 11), including high standard of physical and mental health (Article 12) and the right of everyone to the opportunity to gain living by work (in this case, agriculture as a source of living) (Article 6) (UN Office of the United Nations High Commissioner for Human Rights 1966). This is one of the clear manifestations of the interlink between a clean environment and socio-economic rights which are at stake when local and transboundary environmental damage is not addressed effectively. It is also important to highlight that the different studies regarding the already implemented regional projects assessing water quality from the early 2000s till 2010 show that these initiatives mainly cover the three South Caucasus countries

and do not include Iran or Turkey[34] which, however, also share a portion of the basin. This is one of the factors causing a lack of coordination and effective management at the wider regional level.

The Impact of Hydropower Stations

Hydropower generation is a major water user in the Kura-Araks basin, along with agriculture. Although it is considered a non-consumptive use of water, dams for hydropower generation store large amounts of water that cannot be used for a certain time. For example, in summers, when there is an increase of water needs for irrigation purposes in agriculture, water is still stored for electricity generation for winter. Meanwhile, water reduction in rivers has ecological consequences leading to the degradation of floodplain forests, the reduction of fish stock downstream, bank erosion, etc. (UN Water Activity Information System 2007). Some other causes of the flow reduction in rivers include the loss in water distribution systems for irrigation as well as deforestation (UN Water Activity Information System 2007).

The Water Dams and Reservoirs on the River Araks in Turkey and Armenia

There are around 14 hydropower plants constructed or planned on the River Araks in Turkey. Five of these are complete (Aras Nehri [Aras River] n.d.). The location of one of the planned projects, the Tuzluca dam, is near the border with Armenia, and it has faced particular criticism and opposition for its environmentally destructive character. The environmentalists from Turkey have raised alarm that this project, planned as both a dam for irrigation and power generation, will destroy the River Araks Bird Sanctuary – an important nesting area and migratory route for about 240 bird species (Rivers Without Boundaries 2013). Additionally, there are five villages nearby which together with their agricultural lands will be submerged for the purposes of this project and some 2,000 people will be displaced (Environmental Justice Atlas 2017). As for the Armenian side, as mentioned in a recent interview by Ayser Ghazaryan, the deputy minister of nature protection of Armenia, the construction of many dams on a single river is not only going to be environmentally burdensome for the habitats downstream the river, but also the

[34] The review of the report prepared by the Regional Environmental Centre for the Caucasus with the support of the UNECE (Regional Environmental Center for the Caucasus 2011) gives a clear picture that multiple regional projects implemented have included the three South Caucasus countries in one project or as a part of a bigger project that covers the post-Soviet states, which means that Iran and Turkey are not part of those frameworks.

reduction of water flow in the river will force Armenians to rely even more heavily on water from Lake Sevan, which is already burdened with human activities (Econews 2018). In such circumstances, the role of the River Akhurian (or Arpachay in Turkish) flowing from the homonymous reservoir also increases, as it is not only a feeding source for the nearby habitats, but also a source for the River Araks. On the other hand, anthropogenic interference also affects the Akhurian reservoir as there are two dams on Lake Childir (Çıldır Gölü [Lake Childir] n.d.) and at least one more is being constructed on the River Kars (Karsmanset 2018). On the other hand, the Armenian side also impacts the flow into the River Akhurian with small hydropower plants. In 2014, environmentalists alarmed about the excess of small hydropower plants on the River Akhurian since two small hydropower plants were being planned to be constructed in addition to the three existing ones (Armenian Environmental Front 2014). Thus, hydropower plants on the River Araks in Turkey and some small ones on the River Akhurian in Armenia pose threats of degradation of agricultural lands due to a lack of irrigation water and the disturbance of the ecosystem.

The Akhurian/Arpachay Agreement

In the context studied in this paper, there is also a positive story to lean on as a point of reference albeit with its deficiencies. Despite the long-lasting absence of diplomatic relations between Armenia and Turkey, today the water intake from the Akhurian reservoir is still regulated by agreements dating back to the Soviet times when agreements were signed on water use and dam construction in 1927 and 1973. According to these agreements water intake is equally distributed between the two countries – 50 percent for each side (Government of Armenia 2011). However, the director of the Akhurian-Araks Intake Closed Joint-Stock Company (CJSC) Eduard Sargsyan says that when signing the agreement, the Turkish side was obliged to let 350 m^3 of water into the reservoir, and according to the agreement, there should have been no human interference with that amount. Yet, there are many dams now, and, as Sargsyan notes, the agreement is violated, and equal distribution is under question (Grigoryan 2013).

The Sarsang Reservoir

Several water dams and reservoirs in the South Caucasus are from the Soviet times. The Sarsang reservoir, a water infrastructure built on the Tartar river, is one of them situated in the zone of the Nagorno-Karabakh conflict. In the past, apart from providing local communities with potable water, this reservoir served as a water basin to irrigate lands in the surrounding regions, which extend beyond the conflict zone to south eastern and north eastern areas in Azerbaijan. On the other hand,

there is a hydropower plant on the Sarsang reservoir that remains the main source of energy for Nagorno-Karabakh (Artsakhpress 2018). The conflict is an obstacle for finding common methods to refurbish the dam and use water for drinking and irrigation purposes. Therefore, the Sarsang reservoir is an appropriate case to better understand the impact of conflicts on the environment, how local communities are constantly affected, and how authorities politicize environmental issues, which further reduces the chances for collaboration. Nevertheless, the Sarsang reservoir may seem a window for cooperation for Azerbaijanis and Armenians by targeting the environment as a common goal, despite growing divergences as a result of the Nagorno-Karabakh conflict.

Milica Markovich states that due to this conflict, hundreds of thousands of people have been deprived of quality drinking water, but also a hundred thousand hectares of fertile lands lack appropriate seasonal irrigation in six regions of Azerbaijan adjacent to the conflict zone (Markovic 2015). Lack of water supply to the frontier regions of Azerbaijan as well as security risks related to maintenance problems of the Sarsang reservoir were issues reported to the Parliamentary Assembly of the Council of Europe (PACE), who adopted a resolution in January 2016 calling for independent engineers to inspect the situation and asking the Armenian authorities to stop using water as a political tool (Markovic 2015). The Institute for War and Peace Reporting (IWPR) report, however, shows that the Armenian population in Nagorno-Karabakh and Azerbaijanis living in adjacent regions both suffer from lack of irrigation water from the Sarsang reservoir (Poghosyan, Novruz and Musaelyan 2016). In other words, due to the conflict, all local communities are affected although the degree of the negative impact and number of people affected may vary. To reclaim the main thesis of this work, it is the right of people living in conflict-affected communities to have access to clean water, which is clearly an issue as an outcome of this conflict in the South Caucasus.

Concerning the Sarsang reservoir and a potential humanitarian catastrophe, the Obama Administration called for arranging a meeting between technical experts from the sides to discuss water management and dam inspections (Mkrtchyan 2016). There is, however, no political will explicitly demonstrated by both authorities. For instance, back in 2013, the Nagorno-Karabakh authorities stated that they are ready to cooperate with Azerbaijan for maintenance and water management in the Sarsang reservoir (Asbarez 2013), yet Baku rejected the offer to negotiate with the Karabakh authorities (Meydan TV 2016) as only Armenia is accepted as a side to negotiate. Consequently, the authorities of Nagorno-Karabakh highlighted that the resolution by PACE reflects Azerbaijan's standpoint as the latter lacks will to negotiate (Asbarez 2016). Similar tones of resentment and

blaming are found in the official discourse in Azerbaijan as well, as its Foreign Ministry's spokesperson said: "the use of water resources as a tool for ecological terror and pressure is the state policy of Armenia" (Rashid 2017). It seems that the candid goal of both authorities is not to reach a resolution to address some urgent problems of the local communities, but rather use this issue as a mean to win on political terms by labeling the other as an aggressor or as non-cooperative. On the other hand, there are no legally binding requirements accepted by the countries in the region. Thus, there is a lack of information exchange between the government agencies, which in its turn creates a lack of trust in the data being unbiased. Leylekian states that Azerbaijan artificially perpetuates the Sarsang dam issue for political purposes, and the data is not reliable as it is politically biased (Leylekian 2016).

Phil Ghamagelyan, director of the Imagine Centre for Conflict Transformation, who was interviewed for this study, stated that based on the initial success of repairing the Zonkari dam by a third party to avoid a catastrophe, the Imagine Centre attempted to bring water engineers from the OSCE and the EU together for fixing the maintenance problems of the Sarsang reservoir. The attempt, however, ended in failure soon after it started as both Armenian and Azerbaijani authorities sought to politicize this process. Ghamagelyan noted: "The Armenian side tried to tie it in with some form of legitimization of the Nagorno-Karabakh authorities, while the Azerbaijani side continued to publicly blame the Armenian side for negligence, poisoning of water, and similar. It never gave the explicit green light to the EU experts". While comparing the Zonkari and Sarsang cases, he underlined that the former succeeded since the Georgian and South Ossetian colleagues agreed to depoliticize humanitarian and ecological issues, and this process did have no impact on the recognition or non-recognition of South Ossetia. On the other hand, the intensification of tensions in Nagorno-Karabakh in mid-2014 made the Azerbaijani experts retreat offering to wait for better times to resume to dialogue on this matter.

This case demonstrates that it is necessary that sides commit to environmental protection without perceiving their actions as a political loss or victory. Allowing a third party to fix the maintenance problems or repair the irrigation canals to provide all with water with zero media coverage can work in practice, which in fact has a precedent in case of Georgia as the below discussion shows.

The Zonkar/i Reservoir

The Zonkar/i reservoir, situated in eastern Georgia, sits among three villages – Upper Zonkar/i, Lower Zonkar/i, and Atsriskhevi/Atsriskheu. It gets its water

supply from Little Liakhvi and has the capacity to contain 40 m^3 of water. According to some engineers, the reservoir has a potential to sustain a dam which could generate 8 megawatts of electricity a year (Alania Inform 2009). The Zonkar/i reservoir was built and put into exploitation in 1973 and was maintained by engineers assigned by the government of Georgia up until 2008. After the August 2008 War, the reservoir remained on the other side of the South Ossetia conflict divide and is no longer controlled by the government of Georgia, and the engineers assigned by the government of Georgia are not allowed to enter the reservoir territory for ongoing monitoring.

When the reservoir was functional, it was feeding two main local channels, Tiriphon/i and Vanati/Uanat, as the main source of water for the watering systems of about 60 villages, both Georgian and Ossetian. After 2008, the shields were closed during irrigation seasons for either side, which caused water accumulation. The South Ossetian authorities, after receiving recognition by Russia in 2008, wanted to cooperate with Georgia only on the condition where all the official documents would be sealed and signed by both as two sovereign parties. The Georgian government was unwilling to accept these terms. In 2011, the water inside reached an alarming level and became a danger for the surrounding three villages. The Georgian media reported that due to the dire technical condition, the reservoir could collapse failing to hold excess water, which would wash over villages populated by Georgians and Ossetians (Expert Club 2011). In November 2012, after the alarm from the local villagers, the Georgian technicians requested the visit to the reservoir to check its condition (Aptsiauri 2012). Politicians and diplomats gathered in Istanbul and Yerevan several times to discuss the issue of the reservoir crisis. "I confess that as a former minister of integration I also did not make enough steps for its resolution because I did not feel I was supported from the higher levels of the Georgian government", Paata Zakareishvili says in an interview conducted for this paper, "I think the Ossetian party was much closer to cooperation than the Georgian one but neither government had any clear vision of the solution. I felt weak during negotiations because I knew I would have problems with my own government later if I really did what I believed in". The eventual collaboration on the problem is a sign that at some point, the potential humanitarian disaster became apparent to all.

The final agreement was not the best outcome of the negotiations, but it was the minimum to avoid the worst. Without signing any document, Georgian experts were allowed to conduct maintenance only once to prevent a potential flood. The water reservoir shields were opened, and the accumulated water level yielded down. The cooperation did not result in more than this, and since then, the water

reservoir is not used for irrigation either by the Georgian or the Ossetian side. However, the parties involved in negotiations say that the Zonkar/i reservoir case was positive because it helped to avoid a flood, even though the negotiations were not fully utilized to achieve more mutual benefits. In an interview conducted for this paper, Gela Zaziashivili said that there is potential for further negotiations, although the talks on the issue did not take place for more than a year.

The Zonkar/i reservoir is now being operated by the de-facto South Ossetian government. They operate it in a manner opposite to the local needs: it is closed during the irrigation season and opened during winter, when irrigation water is not needed. The reservoir is in dire technical conditions. Since the government of Georgia is not able to use the Zonkar/i reservoir water for irrigation, it has installed a water pumping infrastructure to pump water from the River Big Liakhvi for irrigation. The infrastructure uses electricity for pumping, and its operation costs more than the use of the Zonkar/i reservoir would have been.

The Enguri Reservoir

The Enguri dam and hydropower plants that are in the zone of the Abkhazia conflict, has been a place for Georgian and Abkhazians to meet, talk, and cooperate. The war of 1992 put the divide between different parts of the largest hydropower facility in the Caucasus, with the dam on the Georgian side of the River Engur/i and the power plants on the Abkhazian side. The complex has strategic importance: this is the main source of electricity for both Georgians and Abkhazians. Since this strategic complex can only function as a whole, the conflicting parties have agreed on certain terms to maintain its constant operation for their energy security. The cooperation over the River Engur/i water resources was born out of economic and social necessity (Cohen and Garb 1999).

Regardless of the tense political relations between governments and authorities, the Georgian and Abkhazian staff have maintained relationships and have worked together without major disagreements. In other words, the power complex has forced the then-leaders Ardzinba and Shevardnadze, as well as the current Georgian and Abkhazian leaders to communicate via telephone or in person. These constructive conversations have facilitated the negotiations (Garb and Whitely 2001). Even during the short period of the closure of the complex for rehabilitation in Winter 2017, part of the energy to Abkhazia was provided by Russia, whereas the rest of it was supplied by the government of Georgia (Civil.ge 2017).

Despite the cooperation, there remain disagreements about energy distribution. Abkhazians, including the Gal/i residents (mostly ethnic Georgians), do not have electricity meters. The Abkhazian authorities started to install meters, but the

process is on halt for unknown reasons. The electricity monthly bill is fixed at 400 rubles per month by the Abkhazian authorities, although it is unclear how this figure was calculated. According to the last report published on the website of the electricity provider Engurhesi Ltd., the company has growing financial problems. If the situation does not change, the company will not be able to cover the debts only with payments from one side of River Engur/i pays (Geoworld 2011). By the last reporting[35] time of 2016 the company loss constituted 38,129 GEL. The report cites that the electricity given to the de-facto government of Abkhazia free of charge is one of the major problems which needs to be addressed immediately. Officials on both sides acknowledge that the demand for electricity in Abkhazia is rising which is a growing concern for officials in Georgia (Kokaia 2017) and think tanks in the energy sector (Margvelashvili 2017). In addition, the Georgian media reports about the dire circumstances of the power plant complex. In May 2018, the Georgian media reported that the main power generator of the plant was flooded, and the water stood 20 cm high inside (Georgian Broadcaster 2018). During the period of this technical problem, Georgia imported electricity from Turkey, Azerbaijan, and Armenia to meet the electricity demand in the country.

Similar to the Zonkar/i case, there remains unused room for cooperation in the case of the Engur/i complex.

Water Pollution in the Region

For Georgia, Armenia, and Azerbaijan, municipal, industrial, and agricultural sources are the main causes of the pollution in the Kura-Araks basin. As long as wastewater treatment systems are old and expensive to refurbish, urban and rural wastewater constitute the most important pollution sources.

The Sources of Water Pollution in Armenia

Water quality is another factor negatively impacting the ecosystem and habitats in and around the River Araks. According to the 2017 data from the Environment Impact Monitoring and Information Center, the River Voghji, which is another tributary of Araks, is classified as a 5th class river, which is the worst quality or heavily polluted[36] (Environmental Impact Monitoring and Information Center 2017). According to an earlier research, the mining industry had been identified as

[35] As of this writing, the company has moved its website, and the file is not available online to be cited for now.

[36] Armenia has a government decision specifying water quality classification (Government of Armenia 2011).

the reason for such a heavy pollution of Voghji (Ողջի գետի աղտոտումն ու լեռնահանքային արդյունաբերությունը՝ փորձագիտական գնահատական [Voghji River Pollution and Mining Industry – Expert Evaluation] 2010). Norashenik is its main tributary, and it has also been identified with the 5th category, and this is no surprise considering its heavy influence by wastewater from the Artsvanik tailing dam, the biggest in the region. Overall, the heavy presence of mining industry in the region has impacted the increase of such metals as iron, manganese, zink, lead, cadmium, and others in the River Voghji (Gabrielyan, Shahnazaryan and Minasyan 2018).

The mining industry has been one of the major polluters in the Kura-Araks basin. Although it is reported that metallurgical and mining sites in Armenia and Turkey are especially concerning for the River Araks (Kerres 2010), in recent years, mining has also developed alongside the River Kura and its tributaries. As a result, the concentration of metals at the confluence of Araks and Kura exceeds permissible levels by up to nine times; the concentration of phenols is six times higher, and mineral oil and sulphates are two and three times higher, respectively (Kerres 2010). If years ago, the main source of pollution for the River Kura was untreated municipal wastewater, in recent years, the pollution from mining has added both from the Georgian and Armenian side (Bakradze, Kuchava and Shavliashvili 2017). It is worth a note that to stop further pollution of rivers in Armenia, a movement by environmental groups has been launched in the past years to halt another mining project in Amulsar, an area where two more rivers are located – Arpa and Vorotan, tributaries of the River Araks (Liakhov and Khudoyan 2018).

On the Armenian side, the River Debed, another tributary of Kura, also suffers particularly from mining activities. Again, according to the 2017 state monitoring data, water quality in the River Debed is in the 5th category at the border with Georgia. Its Akhtala and Shnogh tributaries are as well in a similar condition (Environmental Impact Monitoring and Information Center 2017). In all cases, the concentration of molybdenum together with other metals is high, which is indicative of the sort of metal mining that is taking place nearby. The River Shnogh is specifically impacted by copper-molybdenum mining in Teghout. Only within 3-4 years of construction and exploitation of this mine, the water quality in the River Shnogh changed from the "good" to the "bad" category (Minasyan 2015). The most recent reported case about leaks from the mine's tailing dam was at the beginning of 2018 (Teghout Tailing Dump Tails Flowing into Shnogh and Debed Rivers: Inspection Following Alarm Signal 2018). Ever since, the mine has stopped its operation. Various reasons have been mentioned, one of them being the tailing dams' instability. The company operating the mine has confirmed this in a letter

(Teghout CJSC Confessed: Teghout Tailing Dump Sustainability Indicators Don't Comply with Armenian Legislative and International Highest Criteria 2018).

The other tributary of Debed, Akhtala, is impacted by the activity of the Akhtala Mountain Enrichment Combine and its tailing dam (Akhtala River Resembling a Tailing Pipe Because of Accumulation of Akhtala ODC Dumps 2015). Some of the heavy metals found here in addition to molybdenum, are zync, copper, manganese, and cobalt (Environmental Impact Monitoring and Information Center 2017). The most recent reported case about leaks from the dam was at the beginning of 2018. Following the raised alarm, the Inspectorate for Nature Protection and Mineral Resources carried out an analysis and revealed a high concentration of heavy metals in the water of the River Debed. Although a penalty was set for the company, certain skepticism was expressed regarding the measures to stop the pollution (Arzumanyan 2018). The copper mine of the town of Alaverdi and particularly its dam is also reported to pollute the River Debed (through its tributary Madan) as a result of uncontrolled rain flows washing the surface of the dam and going into the river (Paremuzyan 2014).

The pollution of rivers along with the pollution of air and soil is not only an ecological issue, but directly affects human health and economic activity. Cases are periodically reported in Armenia regarding health problems in communities near mining zones (Paremuzyan 2014). The disruption of such economic activities as land cultivation and plant growing that is due to polluted waters from rivers near mines and tailing dams are also reported periodically (Nikoghosyan 2018). Therefore, a clean environment, apart from its importance for biodiversity, is directly linked with people's wellbeing and their economic and social rights.

The Sources of Water Pollution in Azerbaijan

To begin with, it is worth to mention that unlike in Armenia and Georgia, pollution deriving from oil extraction in the Caspian Sea is one of the main sources of pollution in Azerbaijan as the pollution from the oil industry constitutes more than 90 percent of air pollution in the country (Mustafaev and Yuzbashov 2001). The water quality in the Kura-Araks basin is a big issue in Azerbaijan since a significant portion of drinking water comes from that basin. Vibrio cholera, a globally spread gastrointestinal disease, is found in surface waters in Azerbaijan, including in rivers and the Caspian Sea, which is due to the insufficient treatment of water (Ahmadov, et al. 2013). In fact, as the report by Vogel et al. shows, although there are 16 wastewater treatment plants in the country, only some of them are functional (Vogel, et al. 2017). On the other hand, the deteriorating conditions in small mountain rivers in Azerbaijan is due to intensive water withdrawals for irrigation

and high pollution deriving from the mining industry in the Small Caucasus (Abbasov and Smakhtin 2009). To be more specific, the water pollution is due to several factors, such as untreated wastewater discharges from sewerage systems, both urban and industrial, and loads of agricultural fertilizers (Euwipluseast n.d.). Plants and mining centers discharge significant amounts of wastewaters to the tributary rivers in the Kura-Araks basin, such as the Rivers Agstafachay, Qoshgarchay, and Ganjachay in the north-western part of the basin.

In general, most of the pollutant materials include dissolved oxygen, iron, and other metals. For instance, Ganjachay is highly polluted with ammonium and nitrate, whereas Agstafachay is polluted with dissolved oxygen, oil products, and copper, the latter coming from Armenia (International Hydrological Program Association Report 2013). In addition, agricultural waste is also discharged to different tributaries in the basin, including the Rivers Tovuzchay and Zayamchay. In general, the heavy metal content in the soils in Azerbaijan exceeds world standards by 8 times for lead, 3 times for cadmium, twice for nickel, 50-60 times for zinc, and 10 times for copper (Ewing 2010). Such a level of soil contamination is likely to pollute the rivers as well. The lack of effective mechanisms for environmental water management in the South Caucasus have in their turn exacerbated the problem (Abbasov and Smakhtin 2009). Azerbaijan, therefore, faces the challenge of the low quality of water in rivers that is the result of both domestic and transboundary pollutants.

The Sources of Water Pollution in Georgia

As in Armenia and Azerbaijan, there are different sources of water pollution in Georgia. Mining is one of the causes of water pollution in Georgia. There have been major heavy metal pollution cases in the River Mashavera, that joins the River Kura. The official monitoring on surface water systems, conducted by the Agency of Natural Resources of Georgia, shows excess of some pollutants in certain points not only in the River Kura, but also in its tributaries, Kazretula and Mashavera, flowing nearby the mining company Rich Metals Group. In Fall-Winter 2016, manganum concentration exceeded the norm in several monitoring points in the Kura River. In the village of Kesalo, Gardabani municipality, the manganum concentration was higher than permitted by Georgian law (42.2 mg/l; threshold limit value – 1.1 mg/l). The sulphates concentration (1,218.52 mg/l; threshold limit value – 2.4 mg/l), and calcium concentration (297.74 mg/l; threshold limit value – 1.7 mg/l) as well exceeded in the same monitoring point (National Environmental Agency 2017).

Moreover, the amount of ammonium nitrates was higher than permitted in the Borjomi municipality, ranging from 0.163-1.757 mg/l, whereas the threshold limit value is 1.4 mg/l. The ammonium nitrate concentration was higher in five samples in the Kareli municipality and in Tbilisi near the Zahesi dam. In one sample, the oxygen concentration near the Vakhushti bridge was also lower than regulated by the law. In the River Kazretula, which flows by the mining company Rich Metals Group, and later joins the River Mashavera, ammonium nitrate exceeded the maximum permissible value in case of 20 samples out of 23. For example, the calcium concentration was 73.18-260.75 mg/l with the threshold limit value being 1.4 mg/l. The River Poladauri also had a slight excess of such heavy metals as barium and cadmium (National Environmental Agency 2017).

Sewage is another source of pollution for rivers. 11.7 percent of the Georgian population are still connected to a wastewater collecting system without subsequent treatment (National Statistics Office of Georgia 2017). On the other hand, while about 70 percent of the urban sewage collecting systems are directly connected to sewage collecting systems, rural households are still polluting the environment (European Union Water Initiative 2012). In addition, illegal waste landfills, dump sites, including those of construction waste are also a major issue affecting the water quality along the River Kura. Such waste sites found in the river basin, made by common people, do not meet any standards; they do not have bottom sealing or leachate collecting systems. Consequently, hazardous substances pollute not only groundwater, but also the river since they are mostly stored on riverbanks and are flushed away during floods, polluting rivers by organic material and plastic waste (European Union Water Initiative 2012).

In Georgia, one major hotspot with respect to transboundary water management is represented by the wastewater treatment plant in Gardabani, located close to the border with Azerbaijan. It is the only operating wastewater treatment plant in Georgia, and it collects and treats municipal wastewater from Tbilisi and Rustavi, although it ensures only mechanical treatment and discharges partially untreated wastewater in the River Kura, which flows to Azerbaijan. Seemingly, there is a lack of proper infrastructure to manage wastewaters across the borders, and the sources of water pollution are multiple, mainly being sewage and heavy metal concentration from mining (European Union Water Initiative 2012).

Conclusion

This paper sought to examine the existing environmental problems in the South Caucasus region, specifically the Kura-Araks basin, which is a common environmental denominator for the South Caucasus countries as well as Iran and

Turkey. We have argued that access to potable water and water sources to irrigate lands to produce goods for living are the rights of people in local communities affected by the conflicts in the region.

The focus has been primarily on transboundary water management and two different problems deriving from it: water flow and pollution. Our review of regional and international legal frameworks shows that while there are several environmental agreements binding one or two of the South Caucasus countries, there is always a missing party that reduces the coordination and management of transboundary water issues. In addition, there is not a single trilateral agreement signed between Georgia, Azerbaijan, and Armenia that would force them all to commit to obligations to protect the environment. Also, the regional projects are mainly initiated by foreign donors and implementing organizations, such as USAID, UNEP, and EU institutions, but they rarely include Iran or Turkey as riparian states in those projects. On the other hand, the pollution of waters seems a significant issue in all three countries, but there is a lack of a mechanism to exchange data between the sides and take responsibilities to reduce pollution. The data from all three countries show that the sources of pollution are mainly wastewaters from sewage, agriculture, and the mining industry. The upstream pollution, doubled with downstream pollution, considerably damages the environment as waters become more polluted, which is a grave concern in regards with Azerbaijan where most of the drinking water comes from rivers in the Kura-Araks basin unlike Armenia and Georgia that use underground water for drinking. Also, Kura is the second largest river flowing into the Caspian Sea providing around 10 percent of the total inflow, and it thus might provide an even greater share of the Caspian's pollutants (UN Water Activity Information System 2007).

The politicization of environmental problems is another issue hurting any potential for non-political engagements on environmental protection. In other words, some of the water reservoirs happen to be in conflict zones, which cause an additional challenge to manage waters, be it for irrigation or drinking. Therefore, local communities on both sides suffer from lack of the unresolved conflicts and the non-cooperation on environmental matters.

Positive collaboration stories, such as that of the Zonkar/i reservoir demonstrate that there is always an opportunity for mutually beneficial decisions. The same argument can be claimed about the deal between Turkey and Armenia, regarding the Akhurian reservoir. However, it is clear that not all expectations can be fulfilled when partnerships take place, which is the case with the Enguri dam, but it is much better to have some deal than nothing at all as it is the case with the Sarsang dam in the context of the Nagorno-Karabakh conflict. In this case, there is lack of trust

and shortage of reliable data. Also, the actions of all sides are politicized, which reduces the chances for cooperation in non-political matters without taking steps politically. The politicization of environmental issues is paralleled with active media coverage, the objectivity of statements in which are difficult to verify. One solution offered so far could be the involvement of local district officials of Azerbaijan and the authorities in Nagorno-Karabakh with relevant representatives of water management agencies and even NGOs to work out the terms of equitable distribution as well as prevention of floods and contamination of water resources (Huseynov and Poghosyan 2012).

It is worth also to mention that most of the environmental issues are legacies of the Soviet period, but significantly exacerbated since the 1990s. On paper, all three countries have adopted domestic laws corresponding to international norms. However, as it was mentioned previously, domestic institutions are often inept in putting those rules into practice. In addition, at this stage, the type and magnitude of transboundary issues are still poorly understood. For instance, while it can be inferred that pollution in an upstream country is very likely to affect downstream countries, no actual measurement has been undertaken at the borders so far. Thus, no actual data is available, for example, on the type and quantities of pollutants passing from one country to the other nor on the actual contribution of erosion in an upstream country to floods in downstream countries (European Union Water Initiative 2012).

Recommendations

In our opinion, it is of utmost importance that governments perceive domestic and transborder environmental issues and human rights as mutually inclusive, for which the needs and interests of the local communities should be prioritized. This process must, however, begin with an effort by the conflicting sides to detach the prevailing environmental problems from the conflicts. The sides must avoid seeing environmental problems as a tool to make political gains. It reduces trust and sparks further antagonism.

The sides must take very local and small-scale attempts, if necessary, with no media coverage, to exchange visits to observe the conditions of the reservoirs. It is to be understood that much longer time and resources are necessary to succeed in achieving tangible outcomes. On the other hand, the sides should take the short-term needs of local communities into account to ensure they are not deprived of their rights to access to water and a clean environment. This is possible if the sides understand that these measures should be taken to preempt certain humanitarian catastrophes, which was successfully done in the Zonkar/i case. In this regard, one

of the important steps will be engaging some representatives of local communities that are directly affected by environmental problems.

There are several environmental agreements that must be signed by all three countries for building a legal ground for trilateral cooperation. It will facilitate data exchange, which is one of the serious problems causing a lack of trust. International agreements are important, and yet without external and internal incentives, the implementation of responsibilities envisioned by local laws and international agreements can take more time than humans and nature can afford. It is important that there is support and guidance as well as demand from international institutions and states to solve transboundary issues such as the prevention of pollution of the Kura-Araks basin.

The role of foreign actors, such as those from the UN and European agencies in monitoring the situation on the ground in cooperation with the local agencies is vital. Monitoring should be done in all states as well as in conflict zones. Such monitoring will help to make a working action plan for pollution prevention in the whole region. Moreover, monitoring in conflict areas will also disperse uncertainty regarding the state of environment there, which often becomes a source of myth making in conflict rhetoric and therefore additional ground for conflict exacerbation.

The five littoral countries of the Caspian Sea (Russia, Kazakhstan, Turkmenistan, Iran, and Azerbaijan) should pay additional attention to the protection of the river basins feeding the sea, including the Kura-Araks basin, in addition to controlling other industrial activities in the sea such as oil extraction. This policy recommendation is in addition to the suggestion directed at regional institutions to be inclusive in their projects, implementing them in the so-called "three plus two" format, alluding to the South Caucasus countries, as well as Iran and Turkey.

Finally, it is a must for each state to make a sober assessment of losses caused by the pollution of water, soil, and air that extends from issues such as the loss of biodiversity to issues such as economic losses due to decreased agricultural potential, budget expenditures due to pressure from the healthcare sector, migration from polluted areas, and even potential of conflict exacerbation due to transboundary pollution. This data must then be compared with the perspectives of developing green economy with nature- and human-friendly policies. Once the losses and benefits are clear, there are higher chances for harmonized coexistence of humans and nature, and one less reason for conflicts between neighbors.

Bibliography

Abbasov, Rovshan, and Vladimir Smakhtin. 2009. "Introducing Environmental Thresholds into Water Withdrawal Management of Mountain Streams in the Kura River Basin, Azerbaijan." *Hydrological Sciences Journal.*

Adebowale, Maria, Chris Church, Beatrice Nduta Kairie, Boris Vasylkivsky, and Yelena Panina. 2001. *Environment and Human Rights: A New Approach to Sustainable Development.* Accessed November 25, 2018. http://pubs.iied.org/pdfs/11016IIED.pdf.

Ahmadov, Rashid, Mukhtar Rajabov, Bradd Haley, and Sevinj Ahmadova. 2013. "Detection of Vibrio Cholerae in Environmental Waters Including Drinking Water Reservoirs of Azerbaijan." *Environmental Microbiology Reports.*

2015. "Akhtala River Resembling a Tailing Pipe Because of Accumulation of Akhtala ODC Dumps." *Ecolur.* Accessed August 22, 2018. http://ecolur.org/en/news/sos/akhtala-river-resembling-a-tailing-pipe-because-of-accumulation-of-akhtala-odc-dumps/7244/.

Alania Inform. 2009. *Южная Осетия может обеспечить себя электроэнергией и экспортировать ее [South Ossetia May Generate and Export Hydro Energy].* Accessed November 25, 2018. http://osinform.org/12492-juzhnaja-osetija-mozhet-obespechit-sebja.html.

Aptsiauri, Goga. 2012. *ოსურ და ქართულ სოფლებს საფრთხე ნაწილობრივ მოეხსნათ [The Problems of Georgian and Ossetian Villages' are Partly Solved].* Accessed November 25, 2018. https://www.radiotavisupleba.ge/a/zonkari-dam/24765935.html.

n.d. "Aras Nehri [Aras River]." *Enerji Atlasi.* Accessed August 21, 2018. http://www.enerjiatlasi.com/akarsular/aras-nehri.html.

Armenian Environmental Front. 2014. *Ախուրյան գետն էլ փոքր ՀԷԿ-երի զոհ [River Akhuryan Also Victim of Small HPPs].* Accessed August 21, 2018. http://www.armecofront.net/lrahos/akhuryan-get/.

Artsakhpress. 2018. *The Volume of Produced Electricity Has Increased by 120%. Director of "Artsakh HPP".* Accessed November 25, 2018. https://artsakhpress.am/eng/news/96336/the-volume-of-produced-electricity-has-increased-by-120-director-of-%E2%80%9Cartsakh-hpp%E2%80%99%E2%80%99.html.

Arzumanyan, Eduard. 2018. *Դեբեդ գետում հայտնաբերվել են ծանր մետաղներ. պատիժը՝ տուգանք [Heavy Metals Have Been Found in the Debed River. Penalty].* February 9. Accessed August 22, 2018. http://www.armtimes.com/hy/article/130969.

Asbarez. 2013. *Karabakh Extends Hand to Azerbaijan.* Accessed November 25, 2018. http://asbarez.com/112858/karabakh-extends-a-hand-to-azerbaijan/.

—. 2016. *Sarsang Reservoir Resolution Hurts Karabakh Negotiations.* Accessed November 25, 2018. http://asbarez.com/145396/sarsang-reservoir-resolution-hurts-karabakh-negotiations/.

Bakradze, Elina, Gulchina Kuchava, and Lali Shavliashvili. 2017. *Study of Contamination of the Transboundary River Kura in Georgia.* Accessed August 22, 2018. https://www.ewra.net/ew/pdf/EW_2017_58_54.pdf.

Boer, Ben, and Alan Boyle. 2013. *Human Rights and the Environment – Background Paper for the 13th Informal ASEM Seminar on Human Rights.* Accessed November 25, 2018. http://ssrn.com/abstract=2393753.

Campana, Michael, Nodar Kekelidze, Berrin Basak Vener, and Bahruz Suleymanov. 2008. *Science for Peace: Monitoring Water Quality and Quantity in the Kura-Araks Basin of the South Caucasus.* Accessed November 25, 2018. https://www.researchgate.net/publication/226134632_Science_for_Peace_Monitoring_Water_Quality_and_Quantity_in_the_Kura-Araks_Basin_of_the_South_Caucasus.

n.d. "Çıldır Gölü [Lake Childir]." *Enerji Atlasi.* Accessed August 21, 2018. http://www.enerjiatlasi.com/akarsular/cildir-golu.html.

Civil.ge. 2017. *აფხაზეთს ელექტროენერგიას მოსკოვი და თბილისი მიაწვდიან [Moscow and Tbilisi will Provide Abkhazia with Electricity].* February 1. Accessed November 25, 2018. https://old.civil.ge/geo/article.php?id=30995.

Cohen, Jonathan, and Paula Garb. 1999. *A Question of Sovereignty: The Georgia–Abkhazia Peace Process.* Accessed November 25, 2018. https://www.c-r.org/accord-article/economic-dimensions-incentive-or-obstacle.

1992. "Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Helsinki, 1992)." *UN Economic Commission for Europe.* Accessed November 25, 2018. https://europa.eu/capacity4dev/public-environment-climate/document/convention-protection-and-use-transboundary-watercourses-and-international-lakes-helsinki-1.

1992. "Convention on the Transboundary Effects of Industrial Accidents." *UN Treaty Collection.* Accessed August 23, 2018. https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXVII-6&chapter=27&clang=_en.

Econews. 2018. *Հիմա մենք պետք է փոխհատուցենք անտառին, քանի որ այն մեզ փրկել է. Այսեր Ղազարյան (տեսանյութ) [Now We Have to Compensate for the Forest Because it Has Saved Us. Aster Ghazaryan (Video)].* Accessed August 21, 2018. https://econews.am/?p=10230&l=am.

Environmental Impact Monitoring and Information Center. 2017. *Մակերևութային ջրեր [Surface Waters].* Accessed August 22, 2018. http://old.armmonitoring.am/index.php?page_name=5.

Environmental Justice Atlas. 2017. *Tuzluca Dam, Turkey.* Accessed August 21, 2018. https://ejatlas.org/conflict/tuzluca-dam-turkey.

1991. "ESPOO Convention." *UN Economic Commission for Europe.* Accessed November 25, 2018. https://www.unece.org/environmental-policy/conventions/environmental-assessment/about-us/espoo-convention/enveiaeia/more.html.

EU Neighbours. 2016. *European Union Water Initiative Plus for the Eastern Partnership (EUWI+4 EaP).* Accessed August 23, 2018. https://www.euneighbours.eu/en/east/stay-informed/projects/european-union-water-initiative-plus-eastern-partnership-euwi-4-eap.

European Commission. 2016. *Environment. Eastern Partnership.* Accessed November 25, 2018. http://ec.europa.eu/environment/international_issues/eastneighbours_en.htm.

European Union Water Initiative. 2012. *Strengthening the Economic and Financial Dimension of Integrated Water Resources Management in Azerbaijan, Georgia and Armenia.* Accessed November 25, 2018. https://www.oecd.org/env/outreach/Kura%20EIs%20TWC.pdf.

—. 2016. *Water Policy Reforms in Eastern Europe, the Caucasus and Central Asia.* Accessed November 25, 2018. https://www.oecd.org/env/outreach/EUWI%20Report%20layout%20English_W_Foreword_Edits_newPics_13.09.2016%20WEB.pdf.

Euwipluseast. n.d. *The Kura-Aras River Basin.* Accessed November 25, 2018. http://www.euwipluseast.eu/en/about/river-bassin/kura.

Ewing, Amy. 2010. *Water Quality and Public Health Monitoring of Surface Waters in the Kura-Araks River Basin of Armenia, Azerbaijan, and Georgia.* Accessed November 25, 2018. http://digitalrepository.unm.edu/wr_sp/144.

Expert Club. 2011. *ცხინვალში დატბორვის ეშინიათ [There is a Fear for Flooding in Tskhinvali].* Accessed November 25, 2018. http://eng.expertclub.ge/portal/cnid__8474/alias__Expertclub/lang__ka-GE/tabid__2546/default.aspx.

Foundation for Democracy and Sustainable Development. n.d. *Aarhus Convention – Access to Environmental Information, Public Participation, and Justice.* Accessed November 25, 2018. http://www.fdsd.org/ideas/aarhus-convention-46-countries-and-the-eu/.

Gabrielyan, Armine, Gayane Shahnazaryan, and Seyran Minasyan. 2018. *Distribution and Identification of Sources of Heavy Metals in the Voghji River Basin Impacted by Mining Activities (Armenia).* Accessed August 22, 2018. https://www.hindawi.com/journals/jchem/2018/7172426/.

Garb, Paula, and John M. Whitely. 2001. "Reflections of Water: New Approaches on Transboundary Conflicts and Cooperation." *The MIT Press.*

Georgian Broadcaster. 2018. *რა ვითარებაა ენგურჰესზე და რა გზით მიეწოდება ელექტროენერგია მოსახლეობას [What is the Situation on the Enguri Hydroelectric Power Plant and in What Ways Electricity is Provided to the Population].* Accessed November 25, 2018. https://www.youtube.com/watch?v=Q1Y3bx_q398.

Geoworld. 2011. *Engurhesi Goes Bankrupt.* Accessed November 25, 2018. http://geworld.ge/en/1836/.

Government of Armenia. 2011. *Որոշում 27 հունվարի 2011 թվականի N 75-Ն [Decision N75-N of January 27, 2011].* January 27. Accessed August 22, 2018. http://www.arlis.am/DocumentView.aspx?docID=65705.

Grigoryan, Hasmik. 2013. *Թուրքիան Արաքս գետի վրա ևս մեկ ջրամբար կկառուցի [Turkey to Build Another Reservoir on the River Araks].* July 17. Accessed August 22, 2018. https://www.azatutyun.am/a/25019554.html.

Handl, Günther. 2012. *Declaration of the United Nations Conference on the Human Environment and Rio Declaration on Environment and Development.* Accessed November 25, 2018. http://legal.un.org/avl/ha/dunche/dunche.html.

Huseynov, Tabib, and Tevan Poghosyan. 2012. *Putting People First: Reducing Frontline Tensions in Armenia and Azerbaijan, Nagorny Karabakh.* Accessed November 25, 2018. https://www.saferworld.org.uk/downloads/pubdocs/Putting%20people%20first.pdf.

International Hydrological Program Association Report. 2013. *River Basin Management Plan for Central Kura Pilot Basin District: Agstafachay, Tovuzchay, Shamkirchay and Ganjachay River Basins.* Accessed November 25, 2018. http://blacksea-riverbasins.net/sites/default/files/Ganja-Gazakh%20%20RBMP%20%20F%C4%B0NAL.pdf.

n.d. "Introduction. About the UNECE Water Convention." *UN Economic Commission for Europe.* Accessed November 25, 2018. https://www.unece.org/env/water/text/text.html.

Ivanova, Maria, and Natalia Escobar-Pemberthy. 2017. *Integrating Development with Environmental Protection.* Accessed November 25, 2018. https://www.sustainablegoals.org.uk/integrating-development-with-environmental-protection/.

Jensen, David, Peter Whitten, Ilona Coyle, Carl Bruch, Mohammad Aslami, and Gwen Brown. 2013. *Assessing and Restoring Natural Resources in Post-Conflict Peacebuilding.* Accessed November 25, 2018. https://postconflict.unep.ch/publications/UNEP_ECP_PBR02_assessing.pdf.

Karsmanset. 2018. *Kars Barajı yılda 215 milyon TL tarımsal fayda sağlayacak [Kars Dam Will Benefit 215 Million TL Annually].* June 19. Accessed August 21, 2018. http://www.karsmanset.com/haber/kars-baraji-yilda-215-milyon-tl-tarimsal-fayda-saglayacak-44474.htm.

Kerres, Martin. 2010. *Adaptation to Climate Change in the Kura-Aras River Basin.* September. Accessed August 21, 2018. https://iwlearn.net/resolveuid/166c61b7bbfc4def7dffa12d5102d4b3.

Kokaia, Lana. 2017. *დაწესდება თუ არა შეზღუდვები აფხაზეთისთვის ელექტროენერგიის მიწოდებაზე [Will Supply of Electricity to Abkhazia Be Restricted?].* Accessed November 25, 2018. http://www.kutaisipost.ge/statiebi/sazogadoeba/article/6337-datsesdeba-thu-ara-shezghudvebi-afkhazethisthvis-eleqtroenergiis-mitsodebaze.

Leonardelli, Irene. 2016. *Environmental Migration and Displacement in Azerbaijan: Highlighting the Need for Research and Policies.* Accessed November 25, 2018. https://publications.iom.int/system/files/pdf/policy_brief_vol2_issue4_en.pdf.

Leylekian, Laurent. 2016. "The Sarsang Reservoir in Upper Karabakh: Politicization of an Environmental Challenge in the Framework of a Territorial Dispute." *Water Policy* 445-462.

Liakhov, Peter, and Knar Khudoyan. 2018. *How Citizens Battling a Controversial Gold Mining Project are Testing Armenia's New Democracy.* August 7. Accessed August 22, 2018. https://www.opendemocracy.net/od-russia/peter-liakhov-knar-khudoyan/citizens-battling-a-controversial-gold-mining-project-amulsar-armenia.

Mardiste, Peep, Alexander Martoussevitch, Iulia Trombitcaia, Bo Libert, and Xavier Leflaive. 2014. *Integrated Water Resources Management in Eastern Europe, the Caucasus and Central Asia.* Accessed November 25, 2018. http://www.unece.org/fileadmin/DAM/env/water/publications/NPD_IWRM_study/ECE_MP.WAT_44_en.pdf.

Margvelashvili, Murman. 2017. *ენგურჰესი და აფხაზეთის ენერგომოხმარება – ენერგეტიკული და ეროვნული უსაფრთხოების გამოწვევა [The Enguri HPP and Energy Consumption of Abkhazia – The Energy and National Security Challenge].* Accessed November 25, 2018. http://liberali.ge/articles/view/33116/engurhesi-da-afkhazetis-energomokhmareba--energetikuli-da-erovnuli-usafrtkhoebis-gamotsveva.

Markovic, Milica. 2015. *Inhabitants of Frontier Regions of Azerbaijan are Deliberately Deprived of Water.* Accessed November 25, 2018. http://assembly.coe.int/nw/xml/XRef/Xref-XML2HTML-en.asp?fileid=22290&lang=en.

Meydan TV. 2016. *Can a Water Reservoir Help Resolve the Karabakh Conflict?* Accessed November 25, 2018. https://www.meydan.tv/en/site/society/12925/Can-a-Water-Reservoir-Help-Resolve-the-Karabakh-Conflict.htm.

Minasyan, Seyran. 2015. *Շնող գետի ջրերի որակի դինամիկան 2009-2015թթ. ընթացքում [Shnogh River Water Quality Dynamics in 2009-2015].* Accessed August 22, 2018. http://aarhus.am/Expert_2015/Seyran_Analiz%20situation%20Shnogh%20Water.pdf.

Mkrtchyan, Marianna. 2016. *White House Officially Replies to Azerbaijani Petition on Nagorno-Karabakh and Sarsang Dam.* Accessed November 25, 2018. http://arminfo.info/index.cfm?objectid=D1512BF0-313E-11E6-A02B0EB7C0D21663.

Mustafaev, Islam, and Eltaj Yuzbashov. 2001. *Air Pollution in Oil Industry of Azerbaijan.* Accessed November 25, 2018. https://www.witpress.com/Secure/elibrary/papers/ECO01/ECO01068FU.pdf

National Environmental Agency. 2017. *გარემოს ეროვნული სააგენტოს წლიური ანგარიში [Annual Report of the National Environmental Agency].* Accessed November 25, 2018. http://eiec.gov.ge/თემები/Water/Documents/Report/წყლის-წელიწდეული-2016.aspx.

National Statistics Office of Georgia. 2017. *Survey of Water Supply Enterprises (2017).* Accessed November 27, 2018. http://geostat.ge/index.php?action=page&p_id=23&lang=eng.

Nikoghosyan, Alina. 2018. *Թեղուտ. բնապահպանական, իրավական և տնտեսական կոլապս [Teghout. Environmental, Legal and Economic Collapse].* March 14. Accessed August 23, 2018. https://www.civilnet.am/news/2018/03/14/Թեղուտ.-բնապահպանական-իրավական-և-տնտեսական-կոլապս/331635.

North Atlantic Treaty Organization. 2011. *Monitoring River Quality in the Southern Caucasus – A Joint NATO-OSCE Science for Peace project.* Accessed November 25, 2018. https://www.nato.int/issues/science-environmental-security/projects/1/index.html.

O'Hara, Sarah. 2000. "Lessons from the Past: Water Management in Central Asia." *Water Policy.*

Paremuzyan, Larisa. 2014. *Մադան գետակի ավազանը բնության համար վտանգավոր գոտի է [The Basin of River Madan is a Dangerous Zone for Nature].* April 22. Accessed August 23, 2018. http://hetq.am/arm/news/54156/madan-getaki-avazany-bnutyan-hamar-vtangavor-goti-e.html/.

Poghosyan, Christine, Nurgul Novruz, and Oksana Musaelyan. 2016. *Water Politics Angers Armenia.* Accessed November 25, 2018. https://iwpr.net/global-voices/water-politics-angers-armenia.

Rashid, Shirinov. 2017. *Official: Armenia Uses Water as Means of Environmental Terror.* Accessed November 25, 2018. https://www.azernews.az/aggression/116479.html.

Regional Environmental Center for the Caucasus. 2011. *Europe's Environment: An Assessment of Assessments for the South Caucasus Region.* Accessed November 25, 2018. https://www.unece.org/fileadmin/DAM/env/documents/2011/ece/12th_session/second/Caucasus.AoA.En.pdf.

1972. "Report of the United Nations Conference on the Human Environment." *UN.* Accessed July 17, 2018. http://www.un-documents.net/aconf48-14r1.pdf.

2002. "Report of the World Summit on Sustainable Development." *UN.* Accessed July 20, 2018. http://www.un-documents.net/aconf199-20.pdf.

Rivers Without Boundaries. 2013. *Save the Aras River Bird Paradise.* December 1. Accessed August 21, 2018. https://www.transrivers.org/2013/1033/.

Samaan, Andrew Watson. 2011. *Enforcement of International Environmental Treaties: At Analysis.* Accessed November 25, 2018. https://ir.lawnet.fordham.edu/cgi/viewcontent.cgi?article=1352&context=elr.

Schulz, Anna. 2014. *UN Watercourses Convention to Enter into Force Following 35th Ratification.* May 22. Accessed November 25, 2018. http://sdg.iisd.org/news/un-watercourses-convention-to-enter-into-force-following-35th-ratification/.

2003. "Status of Protocol on SEA." *UN Treaty Collection.* Accessed November 25, 2018. https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXVII-4-b&chapter=27&lang=en.

1998. "Status of the Aarhus Convention." *UN Treaty Collection.* Accessed November 25, 2018. https://treaties.un.org/Pages/ViewDetails.aspx?src=IND&mtdsg_no=XXVII-13&chapter=27&clang=_en.

1991. "Status of the ESPOO Convention." *UN Treaty Collection.* Accessed November 25, 2018. https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXVII-4&chapter=27&lang=en.

Status of the Protocol to Aarhus Convention. 2003. *United Nations Treaty Collection.* Accessed November 28, 2018. https://treaties.un.org/Pages/ViewDetails.aspx?src=IND&mtdsg_no=XXVII-13-a&chapter=27&clang=_en.

1992. "Status of the Water Convention." *UN Treaty Collection.* Accessed November 25, 2018. https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXVII-5&chapter=27&clang=_en.

1999. "Status of Water and Health Protocol." *UN Treaty Collection.* Accessed November 25, 2018. https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXVII-5-a&chapter=27&clang=_en.

2017. "Subregional Cooperation and Capacity-Building." *UN Economic Commission for Europe.* Accessed November 25, 2018. http://www.unece.org/environmental-policy/conventions/environmental-assessment/areas-of-work/workplan-activities/subregional-cooperation-and-capacity-building.html.

2018. "Teghout CJSC Confessed: Teghout Tailing Dump Sustainability Indicators Don't Comply with Armenian Legislative and International Highest Criteria." *Ecolur.* Accessed August 22, 2018. https://ecolur.org/en/news/mining/teghout-cjsc-confessed-teghout-tailing-dump-sustainability-indicators-dont-comply-with-armenian-legislative-and-international-highest-criteria/10254/.

2018. "Teghout Tailing Dump Tails Flowing into Shnogh and Debed Rivers: Inspection Following Alarm Signal." *Ecolur.* Accessed August 22, 2018. https://ecolur.org/en/news/mining/teghout-tailing-dump-tails-flowing-into-shmogh-and-debed-rivers-inspection-following-alarm-signal/9839/.

1992. "UN Conference on Environment and Development." *UN.* Accessed July 18, 2018. http://www.un-documents.net/rio-dec.htm.

UN Environmental Program. 2002. *Caucasus Environmental Outlook.* Accessed November 25, 2018. https://wedocs.unep.org/bitstream/handle/20.500.11822/9598/Caucas_Environment_Outlook.pdf?sequence=3&isAllowed=y.

UN Environmental Programme. 2014. *Enforcement of Environmental Law: Good Practices from Africa, Central Asia, ASEAN Countries and China.* Accessed

November 25, 2018. https://wedocs.unep.org/bitstream/handle/20.500.11822/9968/enforcement-environmental-laws.pdf?sequence=1&isAllowed=y.

UN Food and Agriculture Organization. 2009. *Kura Araks Basin.* Accessed August 20, 2018. http://www.fao.org/nr/water/aquastat/basins/kura-araks/index.stm.

UN Office of the United Nations High Commissioner for Human Rights. 1966. *International Covenant on Economic, Social and Cultural Rights.* Accessed August 23, 2018. https://www.ohchr.org/en/professionalinterest/pages/cescr.aspx.

UN Sustainable Development Goals Knowledge Platform. 2016. *United Nations Environment Assembly of UNEP.* Accessed November 25, 2018. https://sustainabledevelopment.un.org/index.php?page=view&type=30022&nr=243&menu=3170.

UN Water Activity Information System. 2007. *Kura-Aras River Basin Transboundary Diagnostic Analysis.* Accessed August 21, 2018. http://www.ais.unwater.org/ais/aiscm/getprojectdoc.php?docid=771.

US Agency for International Development. 2011. *Water and Development Strategy.* Accessed November 25, 2018. https://www.usaid.gov/sites/default/files/documents/1865/USAID_Water_Strategy_3.pdf.

Vogel, Birgit, Matanat Avazova, Farda Imanova, and Elina Bakradze. 2017. "Historic Water Use, Projected Water Demand and Water Status in the Kura River Basin."

n.d. "Water Convention." *UN Economic Commission for Europe.* Accessed November 25, 2018. http://www.unece.org/env/water/pdf/watercon.pdf.

Yildiz, Dursun. 2017. *Transboundary Rivers and Water Diplomacy in the South Caucasus.* Accessed November 25, 2018. https://www.academia.edu/32785616/Transboundary_Rivers_and_Water_Diplomacy_in_the_South_Caucasus.

2010. "Ողջի գետի աղտոտումն ու լեռնահանքային արդյունաբերությունը՝ փորձագիտական գնահատական [Voghji River Pollution and Mining Industry – Expert Evaluation]." *Ecolur.* Accessed August 22, 2018. http://www.ecolur.org/hy/news/water/voghji-river-pollution-and-mining-industry-expert-judgment/871/.

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