

**ENVIRONMENT AND SECURITY: WATER SCARCITY AND
INTERNATIONAL MEDIATION IN POST-SOCIALIST
UZBEKISTAN**

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ABSTRACT

The potential for water to be a source of conflict or cooperation is a highly contested topic in environmental security literature. In Central Asia, increasing demand and declining supplies of water have been compounded by increases in nationalism, challenges brought by economic and political transition, and competition over water among the five Central Asian states, which, in turn, has hampered the ability to find a viable regional approach to replace the former Soviet water management system.

A common hypothesis is that water scarcity or water distribution will lead to inter and intra-state conflict. More recent literature has suggested that water scarcity can be a power tool to foster peace between disputing parties. This thesis uses post-socialist Uzbekistan as a case study to analyze the roots of the water problem in Central Asia and explore the linkages between water, conflict, and cooperation more clearly.

The study reviews the water situation in Central Asia before and after the collapse of the Soviet Union, focusing specifically on the function and consequences of Soviet and third-party intervention. This work challenges the large body of scholarly research that suggests that water scarcity catalyzes violent conflict. In turn, the research elucidates the casual pathways by which the environment can be an effective tool to foster cooperation, negotiation, and peace-keeping.

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TABLE OF CONTENTS

Abstract	2
Introduction	6
Chapter 1- Context: Concepts, Tools, and Targets	9
Review of existing literature and contribution	9
Plan of the thesis	16
Methodology	17
Chapter 2- Analytical Framework.....	23
2.1 Security after the Cold War: the rise of non-traditional threats.....	23
2.2 Environmental security: water as a source of stress.....	25
Chapter 3- A Source of Tension in Central Asia: The Case of Water	27
3.1 Subject of the Dispute	27
3.2 Changing conditions and potential conflict	33
3.3 Independence.....	34
Chapter 4- Post-Independence Cooperation and Intervention.....	39
4.1 Challenges of transition: regional vs. national water governance	39
4.2 Internationalizing the environment.....	42
4.3 Proactive intervention.....	43
Conclusion	48
Bibliography.....	51

TABLES

Map 1. Central Asian waters – 22

Table 1: Water-related conflicts in the Aral Sea basin – 30

Map 2: Water management in Central Asia – 38

INTRODUCTION

Scholars of international relations have attributed the perceived intensification of violence in the former socialist sphere to a large number of factors that became more apparent after the end of the Cold War. These include the absence of bipolarity, lack of democracy and problems inherent with the transition to democracy, an increase in nationalism, and also the potential for the environment to provoke upheaval.¹ Consequently, traditional military perceptions of “hard” security could not account for such changes occurring within the international arena, thus allowing for a greater understanding of non-traditional “soft” security threats that may provoke upheaval. In light of changing perceptions of security, a great deal of literature has explored how environmental factors can aggravate and prolong existing tensions and be a security risk. Much attention has focused on water, is a key issue of contention because it invaluable to all human needs and a strategic resource for countries in many parts of the world. Water courses ignore political borders, create mutual dependencies between countries, and may provoke tensions between neighbors over allocation and distribution if the resource is scarce.

In Central Asia, a consequence of the Soviet Union’s disintegration was that political borders no longer corresponded to physical borders. This, in turn, heightened inter-ethnic competition for water, land, and other shared resources. It also corresponded with the transformation of administrative boundaries into national boundaries, and consequently integrated former national water management approaches into trans-national ones. Water, energy, land, and food sectors became interlinked between the new states, and also became

¹Erika Weinthal, “Harnessing the Environment in Post-conflict Peacebuilding,” (Paper presented at the 47th Annual Convention of the International Studies Association: San Diego, 2006,) March 22-25 <http://www.allacademic.com/> (accessed May 21, 2009); Matteo Fumagalli, “Ethnicity, State Reformation and Foreign Policy: Uzbekistan and ‘Uzbeks abroad,’” *Central Asian Survey*, no. 26:1 (2007): 105-122.

interconnected with equally complex political and demographic challenges.²

Since independence, much has been written about the potential for violent conflict over critical water resources in Central Asia.³ The new reality of the 1990s made it clear that Soviet water system that the states inherited was environmentally and economically inefficient, and a new system should be made that legally adjust relations between upstream and downstream riparians (countries that share transboundary water courses). Several treaties have been signed between the states since independence; however, due to a multitude of political, economic, and social factors, the provisions of these treaties are constantly revised, corrected, and revised. The riparian discord has not been settled and strong tensions continue to linger due to water problems.

It was said after the collapse of the Soviet Union, “nowhere in the world is the potential for conflict over the use of natural resources as strong as in Central Asia.”⁴ Despite the great potential for violent conflict over shared resources, since independence the region has remained peaceful and there has been no conflict directly related to water. Rather, the Central Asian states embarked on a path of cooperation, foreseeing the possibilities of conflict. Yet, like many developing countries, the Central Asian states lacked basic domestic capabilities to mitigate environmental problems,⁵ going against the findings of many scholars about the linkages between violent conflict over shared resources in the developing world.⁶

Research findings in recent decades have contributed profoundly to our understanding

² See e.g. Martha Brill Olcott, *Central Asia's New States: Independence, Foreign Policy, and Regional Security* (United Institute of Peace Press, 1996).

³ See e.g. Smith, David, "Environmental Security and Shared Water Resources in Post-Soviet Central Asia," *Post-Soviet Geography* no. 36:9 (1995): 565-586; Bruce Pannier, "Central Asia: Border Dispute Between Uzbekistan and Kyrgyzstan Risks Triggering Conflict," *RFE/RL*, <http://www.rferl.org> (accessed May 24, 2009). ; Bea Hogan, "Central Asia States Wrangle over Water," <http://www.eurasianews.org> (accessed May 28, 2009); Iskandar Abdullaev, "Preventing Conflicts through Water Management in Central Asia," *Transition Newsletter* (June 2001) www.rferl.org (accessed May 28, 2009); Erika Weinthal, "Sins of Omission: Constructing Negotiating Sets in the Aral Sea Basin," *Journal of Environment and Development* no.10 (2001): 50-79.

⁴ Smith, "Environmental Security," 351.

⁵ See e.g. Weinthal, "Sins of Omission."

⁶ See e.g. Thomas Homer-Dixon, "Environmental Scarcities and Violent Conflict: Evidence from Cases," *International Security* vol. 19, no. 1 (1994).

of the diverse ways in which the environment can lead to conflict.⁷ The water situation in Central Asia exemplifies such a scenario where critical shared resources are a possible cause of violence. In more recent years, however, it has come to the attention of environmentalists and international relations scholars that the emphasis on the environment and conflict overlooks the possibilities and circumstances where the role of the environment can help reconcile differences and foster peace. In this way, too, the lack of violent conflict to emerge in post-socialist Central Asia exemplifies that cooperation has been sustainable despite high potential for conflict. It is thus worth exploring the ways in which the environment can be effective tool to foster cooperation, negotiation, and peace in a situation where tensions stir over scarce water resources.

Rather than focusing on how water can lead to conflict, the measures that have enabled cooperation over water are analyzed. *The thesis shows that cooperation between the Central Asian states over water is both feasible and possible.* By doing so, the research seeks to show that the environment can function as an effective tool to foster cooperation and peace between disputing actors. The study explores how violent inter-state and intra-state conflict over shared resources has been avoided in post-socialist Central Asia. In turn, it elucidates how the environment can function as an effective tool to provoke dialogue, agreement, and sustainable cooperation, and by doing so may enrich preventive diplomacy measures elsewhere in similarly structured situations where the environment is a source of tension.

⁷ *Ibid.*

CHAPTER 1- CONTEXT: CONCEPTS, TOOLS, AND TARGETS

This thesis analyzes several important topics in international relations, including a changing global structure, how third-party intervention can function as a mediator between disputing parties, as well as environmental security and peacekeeping. Each of these issues relates in some way to the evolving concept of security and that is a central theme of this study. To explicate my research most effectively, I first provide a thorough overview of existing literature that will emphasize the interlinkages of relevant topics, what areas of research have been sufficiently explored, what literature has received criticism, and what areas of research deem further investigation. The case selection is justified where applicable throughout the literature review. This is followed by the plan of the thesis and the methodology that explicates the remaining chapters.

Review of existing literature and contribution

The study of international politics has traditionally assumed the existence of national states with conflicting policies, placing a high value on maintaining independence and relying heavily on military force.⁸ Prior to the Cold War, such traditional “hard” conceptions of security dominated global politics and relations between states. It was only after the Cold War and return to the multi-polar system that traditional conceptions of security have been seriously challenges. State break-up, transition, and reformation forced international relations scholars and policy makers to move beyond the narrow focus of military security and high politics and rethink basic assumptions of what constitutes a threat.

Fear of violence, conflict, and military confrontation did not diminish after the Cold

⁸ David A. Baldwin, “Power and International Relations.” In *Handbook of International Relations*, eds. Walter Carlsnaes; Thomas Risse,; Beth A. Simmons. (SAGE Publications, 2002),177.

War. However, whereas traditional and “national” conceptions of security dominated the agenda prior to the Cold War, the subject of “international” security is a product of the Cold War, and with it the need to incorporate new and “soft” issues like migration, religious extremism, and the environment into the changing nature of security. Ronald Dannreuther’s *International Security: The Contemporary Agenda* offers a very helpful overview of key security challenges and developments in the post-Cold War world that clarifies the context of the post-socialist environment this thesis discusses. Dannreuther introduces key theoretical and empirical debates that have emerged as a consequence of the fast-changing nature of “international” security. His section on environmental security provides a useful introduction to the plethora of theories that suggest why environmental problems are increasing, what the roots of these problems are, and contributions and criticisms of key theories analyzed throughout this study.⁹

The name most widely associated with environmental security is Thomas Homer-Dixon, who over the last two decades has researched extensively the linkages between environment and conflict and whose findings have now become an integral part of the literature on international security and conflict. His thesis and findings—the results of case study analyses that started in the 1990s—are documented most extensively in *Environment, Scarcity and Violence*, in which he explore numerous critical regional and country cases where environmental stress was a significant cause of violent conflict.¹⁰ Homer-Dixon’s “thesis” suggests three ways that environmental stress may lead to conflict. *Demand-induced* scarcity may occur when population growth increases consumption of a resource, and hence demand. *Supply-induced* scarcity is prompted by depletion or degradation of a resource, and

⁹ See e.g. Roland Dannreuther, *International Security: The Contemporary Agenda*, (Polity, 2007).

¹⁰ The cases examined were Mauritania-Senegal, Rwanda, South Africa, Bangladesh-Assam, Bihar, Pakistan, Indonesia, Philippines, China, Haiti, Chiapas, Nicaragua, Peru, Gaza, the Jordan River basin, and the Nile basin. See Thomas Homer-Dixon and Jessica Blitt, eds. *Ecoviolence: Links among Environment, Population, and Security*. (Rowman & Littlefield, 1998).

structural scarcity is driven by poor distribution of resources.¹¹ *Environment, Scarcity and Violence* continues to be a seminal text on the subject of environmental security. Homer-Dixon's research projects and findings have been so influential that for many, "the concept of environmental security is inextricably tied to his name and thesis."¹²

Following this trend, a number of literature has emerged centered on the linkages between the environment and acute conflict. Peter Gleick adds to discussion that competition for limited supplies of scarce water resources turns issues of both access to and quality of water into a national security priority.¹³ Citing Jordan, Senegal-Mauritania, and other water disputes, Homer-Dixon's findings support that water is a key resource issue. He comes to the conclusion that "the renewable resource most likely to stimulate interstate resource war is water."¹⁴ Adding insightful discussion about the consequences of mismanagement are Michael Klare and Stuart Horsman. Horsman has focused a great deal on the water problem in Central Asia and why water treaties have proved to be unsuccessful and ineffective. As a possible reason, he cites, "the states were forced to rapidly develop management strategies and assume responsibility" that was imposed either by the treaties or by institutions. The way cooperation developed in the post-socialist years was largely influenced by institutional developments, and management has been a key issue in the Central Asian water dilemma. The relationship between scarcity, supply, demand, and management is a key theme and will be explored in detail throughout the thesis.

A consequence of the literature about the environment and conflict is that the field of environmental security has come to be linked overwhelmingly with conflict and war. Overwhelmingly "pessimistic" findings have led to an increase in research that seeks how environmental scarcity can be a source of cooperation. Criticism about environment-conflict

¹¹ See e.g. Homer-Dixon, "Evidence from Cases."

¹² Dannreuther, *International Security*, 71.

¹³ Peter Gleick, "Journey to Planet Earth," *Pacific Institute*. www.pbs.org/journeypointearth (accessed May 23, 2009).

¹⁴ Homer-Dixon, "Evidence from Cases," 19.

literature is attributed to flaws in methodology, bias of case-study selection, and unclear distinction of intervening variables.¹⁵ This, consequently, has re-ignited the debate about environment and conflict. A growing wave has emerged that re-examines the linkages between environment and conflict, and also possibilities for cooperation.

The most widely publicized critique of environment, population, and conflict literature has been by Norwegian peace researcher Nils Petter Gleditsch, who, in a 1998 article, “Armed Conflict and the Environment: A Critique of the Literature,” made a detailed nine-point critique echoing skepticism, criticism, and “problems” of existing environmental security literature.¹⁶ Although the criticism did necessarily single out a particular researcher’s work, it did criticize several findings attributed to Homer-Dixon’s work. Among the gaps in environment-conflict literature, Gleditsch and Marc Levy account that many findings do not make a clear separation between “environmental, social, and political causes of environmentally induced conflict.” Gleditsch also criticizes the lack of a systemic comparative framework in Homer-Dixon’s work.¹⁷ He acknowledges that a more comprehensive analysis would be one that tests a multivariate theory, as this would better illustrate “the relationship between environmental degradation and armed conflict on selected cases where both are known to occur.”¹⁸ This thesis is a first step in that direction as it analyses a scenario where resource scarcity has not resulted in conflict. Similarly, Tøset, Gleditsch, and Hegre disapprove of “the widespread tendency in [conflict] studies of environmental security to refer to future crisis as empirical evidence.”¹⁹ Once again, by

¹⁵ Dannreuther, *International Security*, 71; Nils Petter Gleditsch, “Armed Conflict and the Environment: A Critique of the Literature,” *Journal of Peace Research* no 35:3 (1998): 381-400.

¹⁶ Gleditsch, “Armed Conflict,” pp. 381-400; Daniel Schwartz; Tom Deligiannis and Thomas Homer-Dixon, “The Environment and Violent Conflict: A Response to Gleditsch’s Critique and Some Suggestions for Future Research,” *Environmental Change & Security Project Report* no. 6 (2000): 77-106 <http://www.homerdixon.com/> (accessed May 20, 2009).

¹⁷ Nils Petter Gleditsch, “Conflict and the Environment,” *North Atlantic Treaty Organization: Scientific Affairs Division* (1997): 54.

¹⁸ Gleditsch, “Conflict and the Environment,” 94.

¹⁹ Carsten F. Rønnfeldt, “Three Generations of Environment and Security Research,” *Journal of Peace Research* vol. 34(4) (1997): 478 <http://jpr.sagepub.com> (accessed May 17, 2009).

highlighting the how diverse actors functioned to help prevent conflict, this thesis opens a window for further exploration how resource scarcity can lead to cooperation and peacemaking. All of these criticisms identify important gaps in the literature and inspired the alternative approach that this thesis offers.

In response for the need for more expansive research, Gleditsch has furthered linkages between environment and cooperation, particularly on the relationship between democracy, violent conflict, and engagement of mutual collaboration.²⁰ The Central Asian states are in a period of transition and it is not sure, for instance, whether they will eventually become democracies, making this an interesting issue to explore. Gleditsch also suggests that resource scarcity should be viewed from a regional approach because, as our case selection exemplifies, water does not adhere to administrative borders and is a transboundary problem. Along with Horsman, it has also been suggested that economically stronger countries are less like to experience violent conflict over shared resources. Central Asia is a good place to test these theories because the states have been in a period of transition since the collapse of the Soviet Union. The Central Asian states are economically weak and facing the challenge of building democracy, and it worth exploring how this has affected the path of cooperation and mutual collaboration over water resources.

Additionally, Rajan Menon, Yuri E. Federov and Ghia Nodia's joint publication, *Russia, The Caucasus, and Central Asia: The 21st Century Security Environment* clarifies the changing nature of security in the post-Soviet sphere. It is very useful for understanding how multiple layers of non-traditional threats, including migration and border problems, ethnicity and minority issues, as well as environmental challenges interlink with one another and account for the complexity of Central Asia's current situation.²¹ Similarly, the joint effort of

²⁰ Gleditsch, "Conflict and the Environment," 98-99. Geoffrey Dabelko and Ken Conca, *Environmental Peacemaking* (John Hopkins University Press, 2002).

²¹ Rajan Menon, Yuri E. Federov and Ghia Nodia. *Russia, The Caucasus, and Central Asia: The 21st Century Security Environment* (Institute for EastWest Studies, 1999).

Nazli Choucri and Robert North's *Nations in Conflict: National Growth and International Violence* discusses how environmental stress may, in future decades, lead one country to maximize its power by seizing another country's resources and lead to potential interstate "resource wars" as understood in the traditional realist paradigm.²² They argue that countries facing high resource demand and possessing limited resources within their territories will seek needed resources outside their territorial boundaries through trade or conquest if necessary.²³ This justifies this study's narrowed focus on Uzbekistan, as it is a potential regional hegemony and possesses the region's strongest military capacity. Freshwater is critical to Uzbekistan's national security interests and it is willing to use force against its neighbors if necessary to obtain it, making Uzbekistan a good choice to expand upon Choucri and North's hypothesis.

Of the previously mentioned literature, the criticism most influential to my research is that the majority of case studies are on scenarios where conflict over resources was already known to occur. This makes it impossible to avoid the bias of looking for conflicts in situations of environmental scarcity and then generalizing the environment as a source of conflict in all situations. Consequently, if only conflict situations are analyzed, this, in turn, does not allow for any predictions to be made for how the environment can be a source of cooperation. In this sense, Erika Weinthal's work has proven invaluable. Whereas very few researchers have focused on environmental security in Central Asia, and, more specifically, how water scarcity has the potential to facilitate cooperation, her research findings have shown that cooperation over water in Central Asia is due largely in part to third-party intervention from various international actors. International organizations, multilateral and bilateral mediation, and humanitarian assistance, coupled with a strong desire on the part of the Central Asian leadership to reconcile their differences, are largely to credit for the lack of

²² See e.g. Nazli Choucri and Robert North, *Nations in Conflict: National Growth and International Violence* (San Francisco: Freeman, 1975).

²³ Ibid.

water conflicts in the region.²⁴ Weinthal's research merges environmental security with its broader implications on national, international, and human security. Works including *State Making and Environmental Cooperation: Linking Domestic and International Politics in Central Asia*, her chapter, "Making Waves: Third Parties and International Mediation in the Aral Sea Basin" in Melanie Greenberg, John Barton, and Margaret McGuinness' joint publication, *Words Over War*, as well as numerous essays provide a strong foundation for how cooperation developed in Central Asia in the immediate years of independence. In turn, the ability for the Central Asian states to cooperate over water suggests, as I seek to show in this paper, that the environment holds great potential to function as a peacemaking and peacekeeping tool in regions where tension has its roots in environmental factors.

In light of new research that has teased out the linkages between environment and cooperation, a new resurgence of literature has emerged in very recent years that seeks whether the environment can offer alternative paths to peace. Ken Conca and Geoffrey Dabelko, who co-edited *Environmental Peacemaking*, provide a seminal text that shows a variety of ways in which the environment has the potential to foster cooperation. By doing so, they illustrate the environment can be a pivotal tool to bring negotiation and sustainable peace between disputing parties. Peacemaking literature is not new; however, proactive means of preventive diplomacy has tended to focus on the use of direct mediation, institution and capacity building, and intervention or outright force.²⁵ Very little literature to date has explored how the *environment* can be a powerful peacemaking tool. Additionally, given the general consensus that water is the key resource to watch in this century,²⁶ there should be more research that seeks how water can be used as a tool that fosters cooperation.

²⁴ See e.g. Weinthal, "Making Waves: Third Parties and International Mediation in the Aral Sea Basin," in *Words over War*, ed. M. Greenberg et al. Rowman and Littlefield, (2000).

²⁵ See e.g. Weinthal, "Making Waves."

²⁶ Gleick, "Journey to Planet Earth"; Homer-Dixon, "Evidence from Cases," 19.

Central Asia is a region that remains largely unexplored when it comes to environmental security, and especially environmental peacemaking. Tense relations stemming from a multitude of interlinked factors—all of them relating to water—have largely overshadowed any potential for water to be a source of cooperation in this region. However, the fact that conflict over water has not erupted during the tumultuous years since independence suggests this region can very much deepen our understanding of how regions that share scarce transboundary resources can maintain peaceful relations despite their differences. Most studies on water scarcity have focused on Africa and the Middle East, where conflicts due to water occur regularly and the linkages to water scarcity are easier to dissect; perhaps the reason water problems in Central Asia are under-explored is because water might not be the root of the problem. As the review of existing literature indicates, there is much written about the changing nature of traditional security, linkages between environmental stress and conflict, and more recent works have explored how the involvement of third parties can influence environmental cooperation. This thesis expands upon existing literature by focusing on a region—and more specifically, on a country—that is critical to further our understanding of the relationship between environment, security, conflict, especially in the post-Cold War era when relations among domestic and international actors is changing greatly. Moreover, it seeks to further our understanding of the lesser-explored linkages between the environment and cooperation, and the environment as a potential peacemaking / and peace-keeping tool.

Plan of the thesis

As water politics is a central theme of this work, chapter 2 begins by introducing the concept of environmental security and narrows the scope of the term as it will be used during the remainder of the thesis. A brief overview explicates how resource scarcity can lead to

violent conflict and disrupts regional stability, providing a contextual framework for the subsequent chapter. Chapter 3 is the case selection and explores in detail the physical dimension of the Central Asian water dispute. Historical and topographical factors that influence the water dispute are emphasized; the negative environmental and political consequences of Soviet policy practices are a key theme. Addressing these issues explicate the physical make-up of the natural resource system and the roots of water-related tension within Uzbekistan and in the region. The final chapter highlights the changing nature of intervention and the role of third parties. It is shown that effective international environmental assistance can be a proactive tool to mitigate environmental problems and foster dialogue, negotiation, and peaceful relations between disputing. This is followed by concluding remarks that revisit key points and closes the thesis.

Methodology

Many studies have offered analyses of the conflict-cooperation potential caused by water scarcity. Analyses of the water situation in Central Asia tend to focus on “whether” or “if” water scarcity will lead to conflict or cooperation. There are less systemic studies that have approached this question from a slightly different “how” or “why” lens and sought to uncover deep-rooted factors that may account for the resource’s ability to provoke conflict or cooperation in this region. As the water situation has remained stagnant for many decades, and a multitude of interlinked factors (that will be discussed in detail in this work) have hampered the possibility to find a viable regional system to replace the Soviet system of water management, such analyses cannot elucidate our understanding of how water is contributing to the present stability in Central Asia, and further, how water may, in turn, function more effectively to encourage cooperative and peaceful relations between actors that experience tense relations due to water. Despite inheriting a poor water management system,

the Central Asian states have been able to reconcile their differences and cooperate over water resources. Given each of the states relies heavily on water—Uzbekistan in particular—water must have functioned in some way to spur cooperation. My research is an attempt, therefore, to “get to the roots” of why water tends to foster a negative interdependence between the Central Asian states. Through my study, I show that cooperation between the Central Asian countries over water has been feasible and possible, and as such, that water—and more generally, the environment—has the potential to function as an effective tool that may foster peace.

To carry out the research, *several hypotheses are derived from environmental security literature that can be tested in a more systemic study of the water problem in Central Asia.* The first hypothesis, widely associated with Homer-Dixon, is that water scarcity is likely to lead to violent inter-state and intra-state conflict. The second, attributed to Gleditsch and Horsman, is that economically weaker countries are likely to experience conflict over resources earlier and more severely than countries that are more developed and have stronger economies. In this study this is applicable to Central Asian states being in a period of economic, political, and social transition following the collapse of the socialist system. The third hypothesis, also in reference to Horsman, is that poor management may be the root source of tension, not resource scarcity.

The absence of water conflicts in Central Asia, and the inability for anyone to know if there will or will not be water conflicts in the future, has made me very critical of the types of questions that environmentalists, researchers, and policy makers alike are asking about the water situation in this region. Precisely *because* it is “questionable” if Central Asia’s water is sustainable under current governance, asking “if” questions cannot provide answers for something that has yet to materialize. A slight change of perspective requires these questions

to be approached from a different angle, and, as such, may situate the previously mentioned hypotheses within a larger context that enriches our understanding of these issues.

The method I use to test these hypotheses on the water situation in Central Asia is very straightforward: I ask two questions that, by answering them very thoroughly, will lead me to naturally discuss the relevance of this work. The questions are the following: *How did water scarcity increase the likelihood of different forms of conflict in Central Asia immediately following independence?* And the second: *How can water “ratchet up” the level of stress within national and international society?* One may notice a slight difference in terminology, using “water scarcity” in the first question and only “water” in the second; the reason for this will be justified during the research. Exploring these questions will also touch upon relevant issues including supply-induced and demand-induced scarcity theory. Discussion of these issues is very relevant to Uzbekistan because it is the most water-poor state in the region, consumes the most water in the region, and is the most populous state in the region.

Additionally, the theories will be addressed by the method of *process-tracing*. This is used to map the casual mechanisms that lead to tension over shared water resources, as well as what factors have attributed to the region remaining free of conflict over resources since independence. To account for what facilitated cooperation in the region, *a two-level game approach will analyze international and domestic policy behavior.*²⁷ Conventional literature on world politics restricts international institutions as a subject for international relations and state building as a subject for comparative politics, yet the interaction effects between the two levels is seldom taken into account. This thesis incorporates the “refined two-level game” attributed to Weinthal, which emphasizes the enlarged role of transnational actors. This

²⁷ The “two-level game” is usually associated with Robert Putnam’s model, which shows how domestic and international processes function when a chief negotiator must first reach an agreement with another government prior to securing domestic ratification. See e.g. Robert Putnam, “Diplomacy and Domestic Politics: The Logic of the Two-Level Game,” *International Organization* no. 42 (1988.): 427-460.

approach is more suitable to reveal the enlarged role that third-party actors such as international financial institutions, multilateral organizations, and bilateral aid organizations have served in mediating relations between domestic and interstate politics.²⁸ Given the Central Asian states are in a period of transition and international institutional efforts transcend political borders in the region, this approach is most suitable to explore the changing of domestic structures as a function of the international system. Shifting the focus from *whether or not* the Central Asian states were able to cooperate over water (we know they have), the *circumstances* that have made cooperation possible and the *form* this cooperation has taken or has not taken is explicated.

There are several limitations to the research. The methods used to test the previously mentioned hypotheses and analyze the research are centered upon a critical evaluation of existing literature. Given that systemic data on water scarcity, conflict, and cooperation in Central Asia is relatively scarce,²⁹ this is why most of the discussion is based on literature and journalistic accounts. Ideally, a more comprehensive study would explore each of the Central Asian states individually to allow for a more expansive comparative framework. The region and these specific issues have not been adequately researched, and hence, little scholarly work exists that would enable a more comprehensive study. However, Uzbekistan is an appropriate country to receive a more narrow focus due to the critical water problems it faces, coupled with the Uzbekistan's demographic complexities, the power it holds in the region, and its political and economic strength in relation to the other Central Asian countries.

²⁸ Weinthal's "revised two-level game" sees third parties as the main negotiating actors as opposed to other governments, differing it from Putnam's two-level approach. She uses this a two-level approach to explain environmental cooperation under conditions of transformation. See Erika Weinthal, *State Making and Environmental Cooperation: Linking Domestic and International Politics in Central Asia* (MIT Press, 2002), 44-72.

²⁹ *Note:* Data is scarce in comparison to other water-poor regions, namely the Middle East and Northern Africa, where the largest body of research has been conducted.

As a final note, a clarification of terminology is helpful for reasons of simplification. “*Central Asia*” refers to the five countries comprised of Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan.³⁰ The term “*conflict*” is not used in the sense of armed conflict unless otherwise noted. It is a generic term for the potential for violence to erupt, or for tension occurring within or between states. The terms “*water problems*,” “*water management problems*” and “*poor water management*” are used interchangeably to refer to abuse or misuse of water that is a source or cause of tension. “*Upstream countries*” or “*water-rich countries*” refer to Kyrgyzstan and Tajikistan; “*downstream countries*” or “*water poor countries*” refer to Kazakhstan, Turkmenistan, and Uzbekistan. The terms “*preventive diplomacy*,” “*peacemaking*,” and “*peace-keeping*” are as defined in the 1992 Agenda For Peace. As such, “*Preventive diplomacy*” refers to any “action to prevent disputes from arising between parties, to prevent existing disputes from escalating into conflicts and to limit the spread of the latter when they occur.”³¹ “*Peacemaking*” is “action to bring hostile parties to agreement, essentially through [] peaceful means.”³² “*Peace-keeping*” is “a technique that expands the possibilities for both the prevention of conflict and the making of peace.”³³

³⁰ Note: Iran and Afghanistan are omitted from the general terminology; they will be identified when appropriate.

³¹ Boutros Boutros-Ghali. *An Agenda for Peace: Preventive Diplomacy, Peacemaking and Peace-Keeping*. United Nations. Report of the Secretary-General pursuant to the statement adopted by the Summit Meeting of the Security Council on 31, January, 1992 <http://www.un.org> (accessed May 24, 2009).

³² Note: By “peaceful” means this refers to those foreseen in Chapter VI of the Charter of the United Nations. See Boutros-Ghali, *An Agenda for Peace*.

³³ *Ibid.*

Provided below is a map of Central Asia and the water courses that pass through the region. The two main rivers are the Amu Darya and the Syr Darya: they are the major tributaries of the Aral Sea and the region depends highly on them. Other important rivers are the Assa, the Atrek, the Chu, the Ili, the Irtysh, the Talas, the Tedzhen, and the Zeravshan.

Map 1. Central Asian waters



Source: Map no. 3763, Rev. 6, June 2005, United Nations Cartographic Section.

CHAPTER 2- ANALYTICAL FRAMEWORK

This chapter illustrates how non-traditional threats, including environmental threats, were raised from the realm of “low politics” to “high politics” following the end of the Cold War. It also sets the environmental context of water-sharing constraints in Central Asia and the topographic and social challenges facing Uzbekistan. Patterns of cooperation over shared water resources are then discussed. A key theme introduced in this chapter is third-party intervention and induced cooperation, which will be explicated in greater detail in chapter 3.

2.1 Security after the Cold War: the rise of non-traditional threats

Security can be conceptualized in terms of “hard” and “soft” power. The narrow focus on military and economic coercion to influence the behavior of states is traditionally regarded as “hard” power. Such a focus on high politics dominated the international system throughout the Cold War era. Environmental factors, in contrast, were regarded as “soft” power and relegated to the realm of “low” politics.³⁴ It was not until the Soviet Union’s collapse that profound changes in the structure of the global system sparked scholars and policy makers to re-think the underlying causes of tensions that affect international security. The end of the Cold War made it apparent that non-traditional threats had great potential to disrupt stability. Fifteen new states emerged on the map almost overnight, revealing a messier and murkier world and a breadth of uncertainty and new challenges. In much of the post-socialist world, economic change led to dislocations and rivalry within and between states. Heightened nationalism and disputed borders provoked civil strife, and erosion of stability and political legitimacy came to characterize many of the new states. While traditional conceptions of security have not become obsolete, the end of the Cold War revealed the

³⁴ See e.g. Weinthal, *State Making*.

definition of high politics was unsuitable to encompass new threats in the changing world. These include human, physical, social, ecological, and economic well-being.³⁵ Environmental threats such as the relationship between natural resource scarcity and acute conflict were also encouraged to move into the realm of high politics,³⁶ as “they affect not only the likelihood of conflict but also the well-being of individuals within states.”³⁷ Owing to these monumental events, many scholars argued that a broader definition of security is necessary to encompass the challenges we face in the post-Cold War world.

The conception of security that informs this thesis embraces such an understanding. An appropriate definition for the purpose of this study is best expressed by Menon, Federov, and Nodia in *Russia, The Caucasus, and Central Asia: The 21st Century Security Environment*. They acknowledge that a concept of “total security” is necessary to understand the interplay of risks and threats that shape today’s security environment. They begin, “the study of security encompasses issues that increase the likelihood of conflict among states, or that promote instability within them and that, in so doing, increase the risk of external intervention.”³⁸ Such a definition does not neglect the importance of rivalry and war, nor belittle the importance traditional high politics and hard conceptions of security. Rather, it has the advantage of leaving room to encompass new and diverse issues from human rights, economic development, and ecology, all which are significant to our understanding of security in the twenty-first century. Moreover, this definition leaves room for new actors and recognizes the role that external intervention plays in the changing security environment. Such a rich understanding of security is necessary to understand the complex interplay of threats and state and non-state actors that are explored in this study. Now that a broad definition of security has been identified, our attention will focus on the risks to security risks

³⁵ See e.g. Jessica Tuchman Mathews, “Redefining Security,” *Foreign Affairs* no. 68 (1989): 161-177.

³⁶ See e.g. Homer-Dixon, “Evidence from Cases”; Conca and Dabelko, *Environmental Peacemaking*.

³⁷ Weinthal, *State Making*, 19.

³⁸ Menon, Federov, and Ghia, *Russia, The Caucasus, and Central Asia*, 5.

posed by environmental threats. A narrowed focus on water scarcity in Central Asia will lay the framework for the remainder of the thesis.

2.2 Environmental security: water as a source of stress

As the subject of this thesis is about water, it is appropriate to discuss how this resource can become an issue of competition between users. There is some consensus among scholars that certain types of societies are more prone to experience conflict over resources than others, as well as a general agreement that Central Asia faces a realistic threat of water-induced conflict. Two questions are asked to assess these statements more deeply. First, how can water “ratchet up” the level of stress within national and international society? And second, how did this increase the likelihood of different forms of conflict in Central Asia, particularly in Uzbekistan, following independence? It is impossible to see how this resource offers potential for cooperation without first knowing why and how it is a source of tension.

How can water “ratchet up” the level of stress within national and international society?

There is consensus in the literature that threats derived from environmental scarcity can increase tensions and generate conflict between states.³⁹ There is less agreement between renewable and nonrenewable resources as potential sources of upheaval. Most international conflicts over resources occur over nonrenewables such as oil and gas.⁴⁰ When it comes to renewable resources, there is growing consensus that “the renewable resource most likely to stimulate interstate resource war is river water.”⁴¹ Peter Gleick adds to discussion that competition for limited supplies of scarce water resources turns issues of both access to and

³⁹ See e.g. Gleick, Peter. *Water in Crisis: A Guide to the World. Fresh Water Resources* (Oxford University Press, 1993); Homer-Dixon, “Evidence from Cases”; Weinthal, *State Making*.

⁴⁰ Michael Klare gives a very detailed account of nonrenewable resources and conflict. For examples and case studies, see Michael Klare, *Resource Wars: The New Landscape of Global Conflict* (Metropolitan, 2001).

⁴¹ Thomas Homer-Dixon, *Environment, Scarcity, and Violence* (Princeton University Press, 1999), 179.

quality of water into a national security priority.⁴² Others, including Horseman, suggest that poor and developing countries are likely to experience water conflicts sooner and more severely than developed countries. This is because their economies tend to depend more heavily on environmental goods and services, and such societies frequently lack the material, financial and human capital resources that would otherwise buffer them from the negative effects that water scarcities produce. Weinthal adds that especially at the local and regional level, in developing nations “water is critical for basic human needs and survival”⁴³ more so than in the developed world. This is certainly the case with the Central Asian states, which faces severe water dilemmas similar to those faced by other developing countries.

Socio-economic factors may further exacerbate conflicts over water. Recalling Homer-Dixon’s theory of demand-induced, supply-induced, and structural scarcity, population growth and economic development interconnect resource scarcity to social, political, and economic factors.⁴⁴ Weinthal takes the linkages between water scarcity and economic factors one step further in her analysis of third-party intervention in the Aral Sea crisis. She makes the very relevant point that for developing and transitional countries, “environmental protection interferes with the expressed goal of promoting economic growth, as it carries high political and social costs.”⁴⁵ The Central Asian states are in a period of transition from the former socialist system. They are economically too weak to mitigate water-related challenges on their own. This is especially apparent in years immediately following independence, and the reasons for this will be addressed throughout the remainder of the paper.

⁴² See Gleick, Pacific Institute.

⁴³ Weinthal, *State Making*, 20.

⁴⁴ Homer-Dixon, *Environment, Scarcity, and Violence*, 49.

⁴⁵ Weinthal, *State Making*, 20.

CHAPTER 3- A SOURCE OF TENSION IN CENTRAL ASIA: THE CASE OF WATER

How did water scarcity increase the likelihood of different forms of conflict in Central Asia immediately following independence?

Answering this question requires knowledge of the topographic and social challenges facing the region. The legacy Soviet Union sparked many of the changing conditions that are the root of today's lingering tensions. The consequences of Soviet "intervention" are discussed. "*Intervention*," one must note, is a fickle term; it can have positive or negative implications depending on what function it serves. Similar as water scarcity can be debated as the "root" source of conflict or cooperation in Central Asia, it can be argued that Soviet "intervention" is the "root" cause of the water dilemma that is, in turn, to blame for the complicated water scenario that Central Asia faces. To make these linkages clearer, this section is divided into two parts to illustrate the "cause-effects" nature of the water dilemma. The first part introduces the subject of the dispute over water in Central Asia and gives the historical context of Soviet intervention. It will also illustrate why water has challenged Uzbekistan in ways that are arguably more complex than its neighbors. The subsequent section builds on the previous, illustrating that unresolved water problems from the Soviet legacy are the root source of tension in the region today.

3.1 Subject of the Dispute

Water-related environmental constraints have historically played a significant role in Central Asian affairs; in Uzbekistan this relationship has been intrinsically tied to irrigation. Before the Bolshevik conquest of the Eurasian Steppe, irrigation was central for the political

economies of the Bukharan, Khivan and Kokand “khanates” of present-day Uzbekistan.⁴⁶ Water-poor acknowledges the Bolshevik conquest made the “political and security significance”⁴⁷ of irrigated land more pronounced. This is exemplified by Bolshevik attempts to pacify the Ferghana Valley, a geographic region shared by present-day Kyrgyzstan, Tajikistan and Uzbekistan and one of Central Asia’s most densely populated agricultural and industrial areas, and culminated with the national delimitation process of 1924-26 that decided the region’s present day borders.⁴⁸

The Soviet period made the linkages between environmental issues and political trends very pronounced. In short, under Soviet rule unprecedented amounts of water were diverted from the Amu Darya and Syr Darya rivers to make new lands practicable for agricultural production. Irrigation canals from these two rivers were necessary to feed a growing agricultural sector that would otherwise never survive the region’s semi-arid land. Despite climatic challenges, a water-thirsty cotton industry thrived and has dominated Uzbekistan since the Soviet era. The Soviet regime’s water crisis became especially pronounced in the 1980’s, when Soviet authorities could no longer disregard warnings from the scientific community about drying of the Aral Sea and the “economic, environmental, and health consequences of the rampant and indiscriminate use of water for irrigation compounded by inadequate drainage.”⁴⁹ Once the fourth largest lake in the world, the Aral Sea has since shrunk to sixth largest. In 1988 it bifurcated into two smaller seas, the ‘Malgi Aral’ in the north and the ‘Bolshoi Aral’ in the south. By 1995, it had depleted itself of three-quarters of its water volume and its surface level had lowered 19 meters. The depletion of the Aral Sea

⁴⁶ A “khanate” is a Turkic-originated word to describe a political entity ruled by a Khan. Such political entities are typical for people of the Eurasian Steppe and comparable to a kingdom or empire. For more a more detailed discussion of Uzbek culture and history, see chapter 1 of Rafis Abazov, *Culture and customs of the Central Asian republics* (Greenwood Press, 2006).

⁴⁷ Stuart Horsman, “Environmental Security in Central Asia,” *RIAA Briefing Paper*, New Series no. 17 (2001): 2.

⁴⁸ *Ibid.*

⁴⁹ Weinthal, *State Making*, 4.

was so severe that the once freshwater lake became as salty as the ocean.⁵⁰ This reduction came as a direct result of the diversion of its inflowing rivers, the Amu Darya and the Syr Darya, by the Soviet Union for irrigation purposes, primarily in Uzbekistan. The slow disappearance of the Aral Sea and the widespread consequences of this process are so great, it is often referred to as a “quiet Chernobyl.”⁵¹ One can see why water became a major issue in the region.

It is during the late Soviet era that the water crisis reached epic proportions and indicated severe circumstances within the regime. Concerns over the rising water dilemma were not purely ecological in manner, but were indicative of deeper interlinkages between environmental, economic, political and social factors. For instance, decades of intensive irrigation to fuel Uzbekistan’s cotton monoculture produced appalling environmental and health problems. Desiccation of the sea led to sharp upsurges in dust storms containing toxic salt residue from the exposed seabed; agricultural runoff containing large amounts of pesticides and herbicides further deteriorated the quality of the rivers.⁵² The Amu Darya and Syr Darya—historically the source of irrigation and drinking water for much of the population—became unfit for human consumption. The same river water continued to be used to irrigate Uzbekistan’s cotton yields, which subsequently declined due to the intense water logging and salinization of the soil. Regardless of these conditions, Moscow continued to increase production quotas. Weinthal writes, “questions of scarcity and externalities were linked to broader issues of political and economic control over decision making and control of resources.”⁵³ These interlinkages accentuate the growing tensions over water building between Moscow and the Central Asian leaders.

⁵⁰ Philip Micklin, “Desiccation of the Aral Sea: A Water Management Disaster in the Soviet Union,” *Science* no. 241 (1988): 1170-76.

⁵¹ Daphne Biliouri, “The International Response to the Aral Sea” www.eurasianet.org (accessed May 11, 2009).

⁵² For a very thorough analysis of the desiccation of the Aral Sea and its consequences, see Philip Micklin, “The Aral Sea Disaster,” *Annual Review and Planetary Sciences* no. 35 (2007): 47-72.

⁵³ Weinthal, “Making Waves,” 269.

Growing tensions during the final years preceding the Soviet Union's collapse were marked by a demand that Moscow address the environmental consequences of Soviet economic policies. Predictions that conflict would ensue in the post-Soviet period were predicated on upsurges of conflict that marked the last few years before the breakup of the Soviet Union. The following table indicates all major water-related conflicts in the region.

Table 1: Water-related conflicts in the Aral Sea basin (Allouche, 2006: 98)

Hydrological system	Control of sources	Main user(s)	Type of dispute	Related ethno-territorial or sub-national conflicts	Severity of conflict
Naryn and Toktogul resv.	Kyrgyzstan	Kyrgyzstan Uzbekistan	Up-down stream	Ethnic tensions between Uzbek and Kyrgyz population in the Ferghana Valley Transfer of the Tajik section of the Fergana Valley to Uzbekistan	High
Kayrakum resv.	Tajikistan	Uzbekistan Tadjikistan	Up-down stream		Medium
Tributaries to Fergana Valley	Kyrgyzstan	Uzbekistan Tajikistan	Shared irrigation system	Ethnic tensions between Uzbek and Tajik population Transfer of lands between the Syr Darya and the Arys rivers (province of Chimket) from Kazakhstan to Uzbekistan	High
Chardara resv.	Kazakhstan	Kazakhstan Uzbek minority	Up-Down stream ; shared irrigation system		Low
Vakhsh/Pyandsh	Tajikistan	Tajikistan	Up-down Stream (potential)	Factional divides along the course of the Amu Darya between Gorno Badakhstan and the region of Kurgan Tyube	High
Zeravshan	Tajikistan	Uzbekistan	Shared irrigation system; up-down stream	Ethnic tensions between Uzbek and Tadjik population ; transfer of the upper reaches of the Zeravshan to Uzbekistan	Medium
Lower Amu Darya	Turkmenistan Uzbekistan	Turkmenistan Uzbekistan	Shared irrigation system; up-down stream	Territorial claims concerning parts of the Tazhaus Oasis, the Khorezm province, and Cardzhou at the middle Amu Darya	Medium
Kara Kum canal	Turkmenistan	Turkmenistan Uzbekistan Karakalpakstan Turkmenistan Kazakhstan	Transbasin	Interrepublican significance, repercussions for downstream users	Medium
	Kazakhstan	International	Regional, common/sacrifice area	Low potential for a secession of Karakalpakstan from Uzbekistan; over-regional conflict	Low

One can gather from the table a strong territorial and ethnic dimension to all conflicts. Uzbekistan has tense relations with all of its neighbors, particularly up-stream Kyrgyzstan and Tajikistan. A region that regularly sees incidents over water use is the Ferghana Valley, a geographic region shared between these three countries. The continuous unrest that marks the Ferghana Valley can be largely explained by Soviet intervention: specifically, the national delimitation during the 1920s, Stalin's policy "to divide and rule the region."⁵⁴ The way the region was divided was two-fold. Firstly, divisions were based on ethnic/linguistic groups. And second, the region was divided to distribute water resources in a strategic manner. Jeremy Allouch explains this more clearly:

"The Soviets in fact created two small republics, Tajikistan and Kyrgyzstan, endowed with enormous water resources, although little in the way of agricultural land, and three large republics, Turkmenistan, Uzbekistan and Kazakhstan, with huge agricultural potential but virtually no indigenous water supply."⁵⁵

Rightly emphasizing how national delimitation was a strategic decision is Sara O'Hara, who writes,

"In effect, the Soviet administration created a situation which would ensure competition between water-surplus and water-deficit republics. This situation worked to Moscow's advantage in two ways. First, disputes over water reinforced the national distinctiveness of the republics, thus limiting the potential for regional co-operation, which would threaten soviet control. Second, as competition for water increased the Republics were forced to ask Moscow to intervene, a role it was more than willing to undertake. In short, water policy was central to Moscow's efforts to divide and rule the region."⁵⁶

What should be taken from this is the fundamental role the Soviets played in strategically dividing the Central Asian republics and what the long-term consequences of these divisions are. The republics were divided ethnically, linguistically, and by how much agricultural land

⁵⁴ Allouch, "A Source of Regional Tension," 99.

⁵⁵ Ibid.

⁵⁶ Sara O'Hara, "Central Asia's Water Resources: Contemporary and Future Management Issues," *Water Resources Development* vol. 16 no. 3 (2000): 423-441.

or water they were endowed with. A note on geography is also useful. Kyrgyzstan and Tajikistan are very mountainous, and cotton cannot grow over 1200 meters. Turkmenistan is too arid to cultivate cotton, and weather conditions in Kazakhstan are too cold for the crop to survive.⁵⁷ Conditions for growing cotton in Uzbekistan were, as the saying goes, just right. This explains why Uzbekistan became the hub of the cotton monoculture and not other states.

It can also be argued that Central Asia was, for the Soviets, like one large agricultural grid, where the only goal was to produce, produce, produce irrespective of environmental, political, or social consequences that such a mentality would rouse. A bit of history on cotton production is helpful here. In the middle of the nineteenth century, the United States and the United Kingdom were the largest cotton producers. While there are several hypothesis that account for the rapid acceleration of cotton production in Central Asia after the Russian arrival,⁵⁸ one of them is certainly a strategic move on the part of the Russians to reduce dependence on foreign supplies.⁵⁹ Uzbekistan became the centerpiece of the Russian/ and later Soviet strategy to compete in cotton production. Today Uzbekistan is the fifth largest producer and second largest exporter of cotton.⁶⁰ It has actually been argued by some specialists that a major motive for the initial Russian invasion of Central Asia was the region's enormous potential growing cotton.⁶¹ This helps explain the intensity of cotton production that has characterized the region for so many generations.

After discussing the relevance of history context, geographical constraints, and the cotton production legacy, can any of these explain the current water crisis? Moreover, is Central Asia a region that suffers from water *scarcity* or water *mismanagement*? As Weinthal

⁵⁷ Allouch, "A Source of Regional Tension," 97.

⁵⁸ *Note:* Until the Russian arrival in the 1860s, the region of Central Asia was formerly known as Turkestan.

⁵⁹ *Note:* The Anglo-Russo rivalry over the Sub-Indian continent is another hypothesis that accounts for the rapid acceleration in cotton production. For more about the rise of the cotton monoculture, see e.g. Allouch, "A Source of Regional Tension," 96; Igor Lipovsky, "The Central Asian Cotton Epic," *Central Asian Survey* vol. 14 no. 4 (1995): 530.

⁶⁰ Center for Development Research, Bonn, "Economic Restructuring of Land and Water Use in the Region Khorezm (Uzbekistan) (Project Proposal for Phase I)," *ZEF Work Paper* (2001): 19 <http://www.zef.de> (accessed May 17, 2009).

⁶¹ See e.g. Lipovsky, "The Central Asian Cotton Epic."

rightly acknowledges, “[t]he immediate cause of the water crisis was inefficient irrigation; however, the root causes [of the Aral disaster] were much deeper.”⁶² An accurate picture of the current water situation must be large enough to account for these “deeper” causes. A look at any map of Central Asia shows that, paradoxically, the region is very rich in water: there are plenty of rivers that cross the region, and water is essential for the economic well-being of each state.⁶³ This suggests that current consumption patterns cannot be explained solely by water scarcity. Rather, mismanagement and poor distribution seem more plausible factors that would, coupled with the challenges and changing conditions brought by independence, be a source of tension.

3.2 *Changing conditions and potential conflict*

Before addressing the environmental factors that increased the potential for water conflicts following independence, it is appropriate to address the empirical and legal challenges facing the new states. Classical realism in the version presented by Morgenthau reminds us that states and their state leaders “act in terms of interest defined as power.”⁶⁴ The struggle for influence and control is at the heart of international politics, and a state will attempt to minimize its risks and maximize its benefits in order to entrench its power.⁶⁵ The collapse of the Soviet Union brought independence to the Central Asian states; in other words, it introduced *statehood*, and this introduces the question of sovereignty. Sovereignty, Thomson adds, is the ability to make one’s own policies, and every state possesses this

⁶² Weinthal, *State Making*, 5.

⁶³ Allouch, “A Case of Regional Tension,” 95.

⁶⁴ Hans Morgenthau, *Politics among nations: the struggle for power and peace* (New York: Knopf, 1973), 5.

⁶⁵ *Ibid.*, 7–10. Morgenthau here stresses the struggle for influence is part of a state’s pursuit of a ‘rational’ foreign policy; rational behavior among states is a starting point that unites classical realism and neo-liberalism. Neo-liberalism holds that certain forms of cooperation may be the most rational way for states to balance accommodating national interests and maintaining cooperative relations with other states, and cooperative relations becomes part of a state’s long-term interests because such a path best mitigates transaction costs. See David Baldwin, *Neorealism and Neoliberalism: The Contemporary Debate* (Columbia University Press, 1993).

right.⁶⁶ Since states, according to realism, seek to maximize their power—their sovereignty—it makes sense that the Central Asian states would want to, as Weinthal puts it, “jealously guard their newly acquired sovereignty.”⁶⁷ The collapse of the Soviet Union hence ‘changed conditions’ drastically for the former republics, both empirically and legally.

3.3 Independence

With respect to water, the collapse of the Soviet Union turned what was once domestic issue into an international one almost overnight. The Amu Darya extends across three new states (Tajikistan, Uzbekistan, and Turkmenistan),⁶⁸ and the Syr Darya across four new states (Kyrgyzstan, Tajikistan, Uzbekistan, and Kazakhstan). The previous water system was centralized and Moscow allocated water in an extremely unbalanced manner. At independence, the downstream states (Uzbekistan, Turkmenistan, and Kazakhstan) withdrew 82 per cent of water. Uzbekistan alone—whose cotton monoculture was the leading foreign exchanger earner of the republics—withdrew 52 per cent. In contrast, the total water withdrawal of the upstream states (Kyrgyzstan, Tajikistan) was just 17 percent.⁶⁹ Independence meant that Uzbekistan no longer had control over its water supply, which originates in Kyrgyzstan and Tajikistan. Yet the republics continued to use the old Soviet water agreement, which gave very asymmetrical benefits to the riparians. This itself does not indicate a source of tension. However, Homer-Dixon reminds us of the narrow circumstances under which conflict over water between upstream and downstream users is most likely:

⁶⁶ Janice Thomson, “State Sovereignty in International Relations: Bridging the Gap Between Theory and Empirical Research,” *International Studies Quarterly* no. 39 (1995): 213-233.

⁶⁷ Weinthal, *State Making*, 45.

⁶⁸ Note: Afghanistan is also an important riparian of the Amu Darya.

⁶⁹ Jeremy Allouche, “The Governance of Central Asian Waters: National Interests Versus Regional Cooperation,” *United Nations Institute for Disarmament Research* no. 4 (2007): 45-55 <http://www.unidir.org/> (accessed May 26, 2009).

“The downstream country must be highly dependent on the water for its national well being, the upstream country must be threatening to restrict substantially the river’s flow, there must be a history of antagonism between the two countries, and, most importantly, the downstream country must be militarily stronger than the upstream country.”⁷⁰

Regathering the above issues gives us a more complete picture of how the collapse of the Soviet Union increased the potential for water wars between the Central Asian states. Conflict is more likely when water is required for economically important activities. The situation exacerbates even more when the riparians accuse one another over inequitable water allocations.⁷¹ Readdressing the inherent nature of states makes it understandable why water conflicts are likely.

Moving our focus to Uzbekistan illustrates great potential for conflict on both the international and sub-national level. Uzbekistan’s economic dependence on water is especially clear. Nearly 4 million hectares of land are irrigated annually—half of the irrigated land in the Aral Sea Basin—to feed the country’s water-intensive cotton monoculture.⁷² Agriculture alone employs 40 percent of the country’s workforce. While decreasing agricultural dependency would release more water into the Aral Sea and be a significant step in environmental protection, doing so could “lead to higher unemployment (...) and risk political and social instability.”⁷³ Political and social instability in Uzbekistan could, in turn, have severe security implications on the region. A brief look at the country’s national interests, capabilities, and geographic position illustrate why: Uzbekistan, with 27.3 million people, is Central Asia’s most populous country. It also possesses the largest and most

⁷⁰ Homer-Dixon, *Environment, Scarcity, and Violence*, 179-180.

⁷¹ Note: Upstream users Kyrgyzstan and Tajikistan use water to for electricity production generated by hydroelectric power, and downstream users Turkmenistan and Uzbekistan to irrigate their agricultural sectors.

⁷² Horsman, “Environmental Security in Central Asia,” 2.

⁷³ Weinthal, *State Making*, 20.

competent military forces in the region.⁷⁴ Furthermore, the country's agricultural dependency makes water a national security concern. Traditional realist conceptions of 'power politics'⁷⁵ and that states act according to their national interests justifies that any aggravation to Uzbekistan's water supply—which originates outside its borders—could provoke it to use force on its neighbors in order to obtain it. In a 1991 survey of the most potential global water conflicts, three scenarios involved Uzbekistan; it was rivaled only by Israel as the country with the most potential inter-state water conflicts.⁷⁶

The problem of hegemony in the context of security implications in Central Asia has also been largely under-examined, and in the coming years Uzbekistan will be under a watchful eye. The Russian Federation, though undeniably a critical actor, is no longer the only country with the potential to stir the region: Uzbekistan has been called “an aspirant sub-regional hegemon,”⁷⁷ a term that offers potential for both competition and cooperation. The interlinkages of “military, economic, political, and cultural dominance” illustrate the how Uzbekistan can influence the region, especially if it chooses to prioritize national interests of regional interests in the coming years. The country's circumstances thus highlight several dilemmas: its economic dependence on a resource that originates outside its borders is a challenge many developing nations face to reconcile environmental protection with economic growth. At the same time, it's geopolitical characteristics make that any unilateral action could have very questionable political and social consequences.

Demographic challenges are another very serious issue in this region. In a similar manner that borders were delineated without taking into consideration ethnic distribution, the

⁷⁴ “Background Note: Uzbekistan.” *U.S. Department of State* (December 2008) <http://www.state.gov> (accessed May 17, 2009).

⁷⁵ Walter Carlsnaes, Thomas Risse and Beth Simmons, eds. 2002. *Handbook of International Relations*. SAGE Publications, 177.

⁷⁶ Note: Uzbekistan has potential water conflicts with neighboring Kazakhstan, Kyrgyzstan, and Tajikistan. See e.g. Gleick, *Water in Crisis*.

⁷⁷ Ruth Deyermond, “Matrioshka hegemony? Multi-levelled hegemonic competition and security in post-Soviet Central Asia,” *Review of International Studies* no. 35 (2009): 15 <http://journals.cambridge.org> (accessed June 1, 2009).

rivers that physically unite the Central Asian states in other ways divide them. Matteo Fumagalli has extensively researched how ethnicity and hypernationalism have challenged state formation in Central Asia. He notes that after independence, millions of Kyrgyz, Tajik, and Uzbek minorities were straddled “on the wrong side of the border,”⁷⁸ and that different rates of growth between Kyrgyz and Tajik minorities in Uzbekistan compound the risk of interstate tensions over water and illustrate a particularly volatile relationship between ethnicity and territory.

To wrap up, this chapter has sought to illustrate that a proper assessment of the water situation in Central Asia cannot be separated from other security issues. The region suffers from a complex and multi-layer web of interlinking factors including a historical legacy of water mismanagement and poor distribution that essentially favors downstream countries. Misuse of resources has created a situation of scarcity that, coupled with economic, political, and demographic challenges, and also by a constant effort for states to reiterate their sovereignty over water, accentuate the high risk of water conflicts in this region. It has been said of the post-Cold War era that “nowhere in the world is the potential for conflict over the use of natural resources as strong as in Central Asia.”⁷⁹ The circumstances of the region suggest this is very true. Map 2 on the following page illustrates key ecological and demographic regions of concern at independence and provides an appropriate visual summary of the issues discussed in this chapter. One may notice the consequences of the shrinkage of the Aral Sea as well as demographic and other challenges facing the region.

⁷⁸ Fumagalli, “Ethnicity, state formation, and foreign policy,” 106.

⁷⁹ Smith, “Environmental Security,” 351.

Map 2: Water management in Central Asia⁸⁰



Source: Philippe Rekacewicz, "UNEP/GRID-Arendal," *Environment and Security: Central Asia-Ferghana/Osh/Khujand Area* (2005).

CHAPTER 4- POST-INDEPENDENCE COOPERATION AND INTERVENTION

Independence transformed water from a domestic issue to a transnational problem. Of the many interlinked factors that account for the region's unease, a key point is that the current imbalance in water utilization is a direct consequence of Soviet intervention and policy. The context described in the previous chapter was intended to highlight the negative environmental and political consequences of Soviet policy practices. This chapter, in turn, seeks to illustrate that the initial decision to cooperate over water resources resonated with the Central Asian leadership, and that this, in turn, provided incentive for third parties to intervene in a politically and environmentally proactive way.

This chapter, in turn, seeks to illustrate that inherited water problems provided incentive for the Central Asian leadership to cooperate over shared resources despite that national policies would be preferred. More importantly, it highlights that cooperation over water was a path the Central Asian states chose because cooperation provided more benefits than pursuing national policies. The choice to negotiate over water resonated with the Central Asian leadership and created the opportunity for third parties to intervene in an environmentally proactive way. International environmental assistance has been successful to both foster peaceful relations between the Central Asian states over water and simultaneously improve the quality of the global environment.

4.1 Challenges of transition: regional vs. national water governance

As this chapter shifts us into the post-Cold War era, some background content on the nature of transition states is helpful to put context into perspective. Independence marked a journey of political, economic, and social transformation for the Central Asian states. Like other post-socialist countries, the Central Asian states were going through a period of

domestic and international transformation. This can be characterized by their movement away from communism, entering an international system newly dominated by a “Western model” of liberal economic order, and this consequently left little choice but to transition towards democracy and free markets.⁸¹ As such, the basic challenge of state-formation demanded economic, political and social change, which in itself a challenging task.

Water management, moreover, was highly centralized under the former Soviet system. When the Soviet Union fell, the states’ Soviet-based economic ties diminished also. Water, like many other issues, quickly became a national as opposed to a regional concern, and the Central Asian states were eager to exercise their newly acquired sovereignty. Jeremy Allouche rationalizes the logic why the new states would favor national policies: “control over territory meant direct control over resources that could produce hard currency or improve a state’s strategic position.”⁸² As quickly as the states embarked on separate paths, the consequences of pursuing national policies quickly became visible: “intraregional flows of subsidized energy stopped” after the states tried to clarify territorial rights and “transportation links were severed.”⁸³ Under socialism, when Moscow was the administrative power of the region, factors such as energy and transportation were a domestic issue, and any igniting tensions were quickly suppressed. When independence very suddenly turned these into international issues, the high stakes of pursuing national agendas were suppressed because they were highly incompatible. Uzbekistan, for example, wanted to develop more irrigated cropland so it could produce a food surplus to export to neighboring countries. This would require it to receive increased water allocation, something that is completely unfeasible for Kyrgyzstan, which requires water for its hydropower plants.⁸⁴ The greatest strains remained between upstream and downstream users.

⁸¹ For a more precise discussion of the nature of transitional states, see chapter 1 in Weinthal, *State Making*.

⁸² Allouche, “The Governance of Central Asian Waters,” 47. <http://www.unidir.org/> (accessed May 26, 2009).

⁸³ Ibid.

⁸⁴ Ibid.

It was unexpected for the Central Asian states to embark on path of regional water cooperation following independence. However, when one sees the high stakes of pursuing national policies, it is understandable that regional cooperation was desirable to protect regional stability. The absence of a central guiding authority provided incentive for the states to pursue a path of water cooperation, and initial projects for cooperative water management began as early as November 1991.⁸⁵ Regional water agreements were first implemented in 1992, examples of which include the Interstate Commission for Water Coordination, which defined regional water management policies among water ministers from each of the five countries, and regional centers for water distribution that were kept from the Soviet era, known as BVOs, which implemented water-sharing decisions and also operated hydraulic works and structures on the regions' rivers.⁸⁶

What one can take from these actions is that in the case of Central Asia, the Soviet legacy has caused that the Central Asian states are highly interdependent on one another and it is more effective for the states to embrace a regional policy. Doing so also avoids likely and potential political and social consequences of transition. The overarching goal of environmental cooperation was not, in fact, to make the resource system more effective, but to keep the region free of conflict. The following section analyzes key interventions by international actors, and is the starting point for the deeper analysis that follows about the different forms of intervention that have functioned in Central Asia and how the environment has played a role in these actions.

⁸⁵ Weinthal, "Making Waves," 272.

⁸⁶ Weinthal, "Making Waves," 274.

4.2 Internationalizing the environment

The collapse of the Soviet Union changed the international structure from bi-polar to multi-polar. What this means essentially is that actors that were previously excluded from being active in Central Asia—most notably Western policy circles—were now permitted to be actively engaged in the region. There are several underlying reasons why diverse actors were eager to make waves here. From the interest of Western actors, Weinthal notes a major incentive was “to enhance that democracies and markets would flourish in the successor states of the Soviet Union.”⁸⁷ This suggests that environmental aid was linked to encouraging the spread of democracy. Central Asia’s geographic position is another concern, as the region sits between important global actors including Russia, China, Afghanistan, and Iran. Furthermore, the large deposits of oil and gas reserves in Central Asia—the second largest outside of the Middle East—confirm that Russia, China, and the United States would seek to improve political ties in hopes of having access to these resources. Curtis and Weinthal also note the spread of Islamic fundamentalism from Iran as a realistic threat.⁸⁸ These geostrategic concerns presented a broad array of interests in the global community. Furthermore, challenges of transition facing Central Asia made social dislocation and economic collapse a realistic threat to the region. With Moscow no longer providing economic aid, the Central Asian states needed to turn to the international community for help. The previous section also showed the Central Asian states were willing—and trying—to cooperate over their shared water resources. It was further exemplified that unilateral economic and political incentives—such as stopping intraregional energy flows—had detrimental effects on regional stability. The environment appeared as an area where there was consensus among the

⁸⁷ Weinthal, *State Competition*, 134.

⁸⁸ Glenn E. Curtis, ed. *Uzbekistan: A Country Study*, Washington: GPO for the Library of Congress (1996). Look at chapter on Islamic Fundamentalism. <http://countrystudies.us/uzbekistan/> (accessed May 17, 2009); also see e.g. Weinthal, “Making Waves,” 276.

leadership that it was favorable to pursue a regional policy. Not surprisingly, one of the strategies used to invite international aid was to internationalize environmental problems.

A major incentive of this work is to show the two different sides of intervention. It was mentioned in chapter 3 that intervention can have positive or negative implications depending on what function it serves. Soviet intervention “provided good in the form of political and social stability” but was “environmentally exploitative.”⁸⁹ One can say Soviet intervention was “successful” in transforming a dry and arid region into one that can sustain water-intensive agricultural production. By doing so, however, the environmental effects have been catastrophic. International environmental actions have the potential to reinforce social and political control in a way that can also be meaningful in providing environmental protection.

4.3 *Proactive intervention*

The term “intervention” for this work refers to the interference of one actor in the affairs of another. A multitude of third parties, including but not limited to multilateral organizations, multilateral lending organizations, and bilateral organizations have engaged in Central Asia in the past decades, with the intention to mitigate environmental and interlinked challenges and ensure regional stability. Third-party actors can have a significant influence based on the financial assistance and transnational linkages they provide, which, in turn, can facilitate in shaping domestic and foreign policies in an ecologically friendlier way.⁹⁰ A better way to describe third-party intervention is to illustrate specific examples, so I have provided a brief description of two current projects. The first is a multilateral organization program by the United Nations in the Ferghana Valley, and the second is a bilateral

⁸⁹ Weinthal, *State Making*, 34.

⁹⁰ Weinthal, *State Making*, 59.

assistance program by Center for Development Research at the University of Bonn in the Khorezm region of Uzbekistan.

4.3.1 Multilateral organization program: The Ferghana Valley and the United Nations Development Program (FVDP)⁹¹

The United Nations has a special program designated in the Ferghana Valley to address key problems relating to economic, cultural, environmental, and border issues. The Valley, shared between Kyrgyzstan, Uzbekistan, and Tajikistan, is ethnically very diverse, has a high population density, and suffers high rates of unemployment. Interlinked political, social, and economic factors mean the region has great influence on the socio-economic and political processes in all Central Asia, as well as high ramifications on the region's overall security.

Regarding the environment, the FVDP has three major areas of concern: to address nuclear waste dumps in Kyrgyzstan and Tajikistan that contaminate water supplies used by the region; to rationalize irrigation practices and reduce the salination of soils; and to “promote cooperation in the development of systems to avoid natural disasters and to cope with them when they occur.”⁹²

The FVDP adopts an Area Development Framework approach—in other words a regional approach—and, as such, the program's activities address the diversity of conditions in these countries. The effort seeks that “no country will have a comprehensive lead role in Programme coordination,” thus fostering sustainable regional negotiation is a key goal of the program's effort. At the sub-regional level, national units implement projects that are employed with a national framework incentive so to adjust and accommodate needs of each

⁹¹ Note: The FVDP includes only Kyrgyzstan and Tajikistan as Uzbekistan has refrained from participating in the program.

⁹² *Ibid.*

country. If intervention is effective, the region will be better able to foster a healthier interdependent relationship and thus be more secure.

4.3.2 Bilateral assistance program: German-Uzbek Khorezm Project

The Khorezm Project is an interdisciplinary joint research project between the Center for Development Research at the University of Bonn (ZEF) and UNESCO in the Khorezm oblast, in the Aral Sea region of Uzbekistan.⁹³ The project was launched in 2000 and has a projected lifetime of 10, the aim being to address environmental, social, and economic problems in the region. Khorezm is a region critical in the water budget of the Amu Darya river delta and was a major region of cotton production in the Soviet era. On account of unsustainable water management, the region has endured negative consequences in economic productivity and ecological sustainability. More sustainable water practice alternatives that could mitigate economic/and ecological consequences of irrigation practices have remained largely unexplored. The Khorezm project is hence a pilot project that serves as “a model case in Uzbekistan for developing new technologies that may improve the management of irrigated lowlands throughout the Aral Sea Basin.”⁹⁴

There are very few projects like this in Central Asia, and it signals an proactive effort to make the region more environmentally sustainable and at the same time not having negative implications on economic matters that are tied to irrigation. The project, in addition to working in close cooperation with the administration of the Khorezm oblast, also expects to feed into development projects planned and implemented by multilateral lending organizations including the World Bank and the Asian Development Bank as well as bilateral donors. As sustainable solutions to water problems in the Aral Sea region are

⁹³ The Center for Development Research (ZEF) is an international and interdisciplinary academic research institute of the "Rheinische-Friedrich-Wilhelms" University in Bonn, Germany.

⁹⁴ Economic and Ecological Restructuring of Land and Water Use in the Khorezm Region (Uzbekistan). ZEF Homepage. http://www.zef.de/index.php?id=summary_khorezm (accessed May 17, 2009).

underexplored, the project's effort to explore ecologically sustainable irrigation practices is a supreme example of the proactive environmental intervention by a third-party.

As these efforts illustrate, third parties are embarking on meaningful projects that simultaneously seek to mitigate tensions, reduce unsustainable water practices, and foster cooperation and agreement. The Khorezm Project in particular is one of few efforts to address sub-national policies, and it is likely that similar efforts will be projected in the future.

4.3.3 Third-party intervention

A great deal of literature exists about third-party intervention. Haas, Keohane and Levy acknowledge that International Organizations may improve institutional effectiveness by enhancing the contractual environment between disputing parties and building national capacity. Their research on the function of international institutions suggests that transboundary and common problems “cannot be resolved without a hospitable contractual environment,”⁹⁵ and that environmental issues, more so than economic or social factors, have greater potential to foster dialogue between disputing parties and for actors to make credible commitments in face of a shared challenge. This is partially due to the way environmental stress can directly affect fundamental and basic human needs.

Weinthal's research on third-party mediation in the Aral Sea basin suggests international intervention has “helped to define the agenda, choose the participants, and construct alternative negotiation sets,”⁹⁶ among the Central Asian leadership, exemplifying an enlarged role for third-party actors to resolve collective action problems among the states.

⁹⁵ Peter M. Haas; Robert O. Keohane; Marc A. Levy, *Institutions for the Earth: Sources of International Environmental Protection* (Massachusetts Institute of Technology, 1994), 19.

⁹⁶ Weinthal, *State Making*, 59.

Additionally, there is consensus among policy makers and environmentalists that environmental assistance is frequently overarched by larger economic or political goals.⁹⁷ Weinthal finds that international intervention in the Aral Sea crisis had to do about protecting the environment than it did about finding something the Central Asian leadership could agree upon to foster peaceful relations between the states. Political and economic intervention would infringe too much on sovereignty. The need to address the Aral Sea crisis, however, was something the Central Asian leaders as well as the international community agreed upon. The environment has a name that can “attract aid,”⁹⁸ and because it inherently interlinks with other issues environment intervention has the potential to be influential in innumerable ways. When intervention works effectively, it has the potential to improve overall ecosystem health.

⁹⁷ Levy, Keohane, Haas, *Institutions for the Earth*, 397.

⁹⁸ Weinthal, *State Making*, 135

CONCLUSION

The traditional subject of national security has been the priority of states in the global system. The concept of international security is more vague, as the end of the Cold War opened the debate about changing conceptions of security tied to non-military, “murkier” threats. A wide and ongoing debate has developed around the role of the environment and how environmental stress is linked to violent conflict. There is still much debate about what “environmental security” means. Understandings range from narrowly defined focus on violent conflict due to acute struggle over shared resources or resource scarcity to more broad focus on how the environment can hold consequences for fundamental well-being. Both of these situations are exemplified in Uzbekistan, as scarce water sources have been the source of dispute over its allocation and distribution not only between neighboring countries over the transboundary resource, but within the country as well between different population groups. Severe consequences that are due to water issues affect irrigation for the agriculture that not only economically sustains the country but is also a source of employment for many people, thus rendering political, economic, and social implications. As for fundamental well-being, water is also the source of numerous health complications that stem from environmental challenges due to water mismanagement, misuse, and abuse.

Most linkages between the environment and security have a negative image, linking environmental stress to violence, conflict, and detrimental consequences. A look at the deep-rooted challenges in Uzbekistan due to scarce water resources justifies this. In the past several decades, however, the glass half-empty of the consequences of environmental stress have leaned toward the glass half-full, as it acknowledged that the environment has as much potential to foster cooperation and agreement as it is to provoke violence. A widening literature has developed around the optimistic potential for environmental stress to encourage dialogue and collaboration between disputing parties, leading environmental researchers and

international relations scholars alike to ask the following question: Can environmental cooperation foster peace?⁹⁹

The end of the Cold War brought many changes to the global structure. In Central Asia, it brought independence for the first time, and with it the challenges of dealing with an extremely poor and unstable economic structure and politically instability as well. Uzbekistan emerged as the country with the largest population and the one with the strongest ties to challenges brought by the environment. The dessication of the Aral Sea hit Uzbekistan more seriously than other countries in Central Asia. Furthermore, the Soviet water management system that once privileged Uzbekistan was now a cause of dispute and the root of both domestic tension as well as regional tension between Uzbekistan and its neighbors, lending especially tense relations with Kyrgyzstan and Tajikistan that continue to be sore to this day. Water is the source of much of the tension that is the root of unease in Central Asia. At the same time, it has been one of the few things the Central Asian leadership has been able to agree upon. Water has motivated cooperation where other forms of cooperation, particularly political and economic, have failed. Conca and Dabelko suggest, “Environmental cooperation can be an effective general catalyst for reducing tensions, broadening cooperation, fostering demilitarization, and promoting peace.”¹⁰⁰ The role the environment has played in Central Asia supports this also.

Whereas the emphasis of environmental stress—in particular water scarcity—has been linked to conflict, the positive ties that have been forged by the environment in Central Asia suggest we should devote more focus to the potential for the environment as a tool that can render peace. Environmental cooperation in Central Asia has established a habit of cooperation among the Central Asian leadership, and this is a very positive thing. There is consensus in the literature that most of the security threats that have emerged since the 1990’s

⁹⁹ See Ken Conca and Geoffrey D. Dabelko, *Environmental Peacemaking*.

¹⁰⁰ Conca and Dabelko, *Environmental Peacemaking*, 9.

are intrastate threats such as political instability and state collapse, as opposed to interstate threats. Water-conflict, however, is a notable exception where the likelihood of conflict between states remains high given that water does not adhere to political borders. That is why Central Asia is such an interesting case, because nowhere in the world is the potential for conflict over water both between and within states—exemplified by Uzbekistan—higher. For this reason, Central Asia is a critical region that could provide innovative insights on how the environment can be used to as tool that fosters peace rather than violence. Peace-keeping, peacemaking, and peacebuilding rely on tools that involve genuine communication, willingness to engage in dialogue and effective listening, and sharing ideas about actions. In its broadest point, steps toward peace as opposed to violence begin with “the commitment to talk about tensions.”¹⁰¹ If there is commitment on behalf of the actors directly affected by environmental scarcity as well as the third parties that seek to assist in mitigating tensions between them, this offers a new lens to understand the interlinkages between environment and security and hence more optimistic future to sustain a non-violent relation between these two spheres.

¹⁰¹ Conca and Dabelko, *Environmental Peacemaking*, 4.

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