

**Rivers of Peace:**  
**Third Party Conflict Management of**  
**Transboundary River Disputes**

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# Abbreviations

ADB	Asian Development Bank
ASBP	Aral Sea Basin Assistance Program
BWO	Basin Water Organisations
CA	Central Asia
CAREWIB	Central Asian Regional Water Information Base Project
CIS	Commonwealth of Independent States
EU	European Union
GEF	Global Environmental Facility
GWP	Global Water Partnership
HES	Hydro Electric Stations
IBRD	International Bank for Reconstruction and Development
ICAS	Interstate Council for Addressing the Aral Sea Crisis
ICOW	The issue Correlates of War
ICWC	Interstate Water Management Coordinating Commission
IFAS	International Fund for Saving the Aral Sea
IGO	Intergovernmental Organisations
SIDA	Swedish International Development Agency
SPECA	United Nations Special Program for the Economies of Central Asia
TACIS	Technical Assistance to the Commonwealth of Independent States
UNDP	United Nations Development Program
UNECE	United Nations Economic Commission for Europe

USAID United States Agency for International Development  
WARMAP Water Resources Management and Agricultural Production  
WARMIS Water Resources Management and Information System

## Abstract

There is a growing body of literature explaining agreements over international river disputes. However, beyond individual case analysis, no quantitative study has been undertaken on the role of third parties in settling river disputes in the regions of the world that are most vulnerable to global climate change. Moreover, there has been no study that combines quantitative and qualitative approaches and provides a systematic explanation within a single analytical framework. This study aims to fill these gaps by combining quantitative and qualitative methods, developing a novel theoretical framework called *transcendancy*, and conducting the first large-n study examining the role of third parties in the emergence of river agreements in Asia and Africa during the time period 1948-2007. Through utilising new data on the role of third parties in river disputes, this study shows that third party involvement in the conflict management of river disputes increases the likelihood of reaching river agreements. Through a process tracing case studies of third party engagement in international river disputes in Central Asia, this study also identifies how and why third parties reach agreements. Drawing on the transcendancy framework, I argue that third party actors facilitate riparian cooperation by addressing three transcendancy problems: securitisation of river systems, legal ambiguity and credibility problems. River water has a superordinate value, therefore river issues are often perceived as zero-sum security issues. At the same time, however, river water also has utilitarian value due to its use in addressing the development and economic needs of states. One of the reasons why third parties are able to advance cooperation is because third parties can assist in the de-securitisation of the water issue and shift the focus towards the utilitarian aspects of river disputes. Secondly, third parties can address issues related to legal ambiguity and help to clarify the positions of riparian states from a normative perspective. Thirdly, where upstream/downstream



relationships exist, third parties can assist in obtaining and providing the necessary information to address issues of information asymmetry and incentivise parties to commit to their agreements through promises of financial support. In addition to identifying the effect and outcome of third parties in riparian disputes, this study also explains why some riparian disputes attract third party assistance whereas others do not, although this is not the major focus of the study. The study demonstrates that a third party's strategic interest in the resolution of a dispute as well as a riparian state's openness to the international community, particularly a riparian state's relationship to powerful Western states, will determine if riparian states are willing to engage third party assistance in managing riparian conflict. Given the current uncertainty around the security challenges of climate change and water stress, this research contributes to our understanding of how to respond to conflicts concerning transboundary waters.

# Introduction

## Problematique and research questions

There is growing global concern that water scarcity coupled with population growth may cause increased conflict between countries and even increase the risk of violent encounters. In particular, transboundary international rivers, which ignore state borders, can incite international disputes. This is because international rivers play a significant role in the sustenance of human life. International rivers provide almost 60 percent of our planet's freshwater supply, and nearly 40 percent of the world's population reside adjacent to rivers (Wolf et al. 1999; Turton and Henwood 2002). By way of example, almost 263 million people live in the Nile basin across ten countries and about half of the population is dependent on the Nile River (Swain 1997). Egypt alone is almost completely dependent on the Nile River, which provides 95% of the water supply of the country (Amer et al. 2005). Bangladesh derives almost 80% of its annual freshwater supply from the Ganges-Brahmaputra-Meghna/Barak basin (Nishat and Faisal 2000). In addition, rivers are used for irrigation purposes and are directly related to food production. Almost 20% of water used for agriculture currently comes from rivers, and it is expected that reliance on river water for food production will increase (International Water Management Institute 2007). In this regard, the usage of river water for consumptive or non-consumptive purposes by one state can decrease the availability of water for another state. If climate change decreases the amount of available water due to severe weather changes, competition over water may give rise to military disputes (Chellaney 2011).

In light of this context, some academics (see Gleick 1993; Klare and Myers 2001; Falkenmark 1990; Cooley 1984; Starr 1991; Homer-Dixon 1999) and political leaders have warned about potential conflict and even possible wars over water. Although some scholars object to such statements (Swain 2001; Alam 2002; Waterbury 2002; Wolf 1998), other authors argue that unregulated and unilateral use of international rivers gives rise to interstate disputes and to low-level armed conflicts (Furlong et al. 2006; Hensel et al. 2006; Toset et al. 2000). Particularly, the global south<sup>1</sup> is believed to be vulnerable to water conflict due to expected severe water shortages in these regions and low capacity to adapt to these changes. In addition, rapid population growth in this part of the world is increasing the pressure to utilise major river systems. These river systems are normally shared by other riparian states and increased use can potentially incite international disputes.

However, although water scarcity is increasing due to global climate crises and increasing use of water for economic needs, we have not witnessed water wars to date. Instead, there were about 400 river treaties<sup>2</sup> signed over the last century (Giordano and Wolf 2003). This is puzzling. If pressure is increasing for such an essential and shrinking resource, then why do we not see more evidence of international military confrontation between riparian states? The major reason, I posit, is the development of increasingly sophisticated conflict management approaches to riparian disputes. In particular, the emergence of negotiated agreements, where the parties agree on the distribution of water and its use, is a both hopeful and fascinating development. Nevertheless, the absence of water wars in the past does not guarantee that militarised conflicts will not emerge in the future, particularly when there are increased demands on fresh

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<sup>1</sup> Global south and developing countries are used interchangeably to describe the countries which are less developed economically with a low standard of living.

<sup>2</sup> River treaties and river agreements are used interchangeably.

water. There are still many basins that do not have any formal agreements and are vulnerable to the outbreak of conflict (Giordano and Wolf 2003, p.168).

It is therefore important to identify what factors encourage riparian states to reach river agreements and how riparian conflicts are managed when they arise. However, the extensive literature on water conflict and cooperation has been somewhat skewed towards disputes, rather than the management of these disputes. Much of the existing literature has largely focused on the relationship between water shortage and the risk of conflict (see Furlong et al. 2006; Gleditsch et al. 2006; Toset et al. 2000; Chellaney 2011). While it is important to identify if climate change and environmental scarcity increases the risk of conflict, it appears that aspects relating to how these conflicts are managed have been overlooked. Previous research has been predominantly focused on identifying the conditions under which water scarcity brings about conflict, rather than on identifying the factors that increase the likelihood of reaching river agreements.

It is necessary to understand why river agreements are important. Three major reasons can be detected. Firstly, the presence of formalised river agreements gives a framework within which disputing states can resolve their disputes peacefully and avoid potential conflict. River agreements can specify the amount of water allowed for withdrawal, water quality levels, dispute resolution tools, and navigation rules that can ease tension and generate frameworks within which the disputing parties can negotiate their dispute (Wolf et al. 2003). Secondly, river agreements can help stabilise hydropolitical relations by clarifying the expectations between parties, providing transparency and decreasing transaction costs (McCaffrey 2003). Tir and Stinnett find that even though water scarcity increases the risk of military conflict, the presence of institutionalised agreements can offset the risk of

militarised disputes (Tir and Stinnett 2012). Thirdly, river agreements create international cooperative regimes through which international water systems can be utilised more effectively for beneficial purposes. Whereas confrontation and disputes lead to inefficiencies, the opposite also holds true: increased cooperation over borders enables more effective use, which is important not least because of the increasing pressure on international water systems.

Therefore, it is essential to understand why parties reach agreements in the presence of riparian conflicts. The last few years have seen the growth of an important and well-developed literature in this field. Most of this literature (see Swatuk and Van der Zaag 2003; Hirji and Grey 1998; Spector 2001; Lowi 1993; Tir and Ackerman 2009) argues that power preponderance is one of the important factors that induces cooperation amongst riparian states. However, this literature has not examined the role of third parties in getting the riparian parties to the stage of signing river agreements. I claim that power issues alone cannot explain why riparian states manage conflict, but that the role of third parties needs to be also taken into account. Asymmetric power relationships between riparian states can be balanced towards more symmetric relationships through the involvement of the third parties. International organisations, for instance, as a third party can create cooperative environments and break stalemate situations by shifting the power balance. Third parties can use “carrots and stick” methods such as financial incentives and aid to incentivize parties to compromise. Therefore, failure to uncover the role of third parties in the conflict management of river disputes may overemphasise the role of power dynamics and underestimate the role of international institutions in an analysis of water security and climate change.

As I will show in this study, in recent years we have observed a growing number of international organisations, donors and external parties getting

involved in the conflict management of transboundary rivers in response to the security implications of climate change. Yet there is little understanding as to whether these external actors are effective in facilitating riparian cooperation, and if so, how and why they are able to promote riparian cooperation. There is also little knowledge about why some riparian states experience third party intervention in river disputes, while others do not. Thus, with the exception of selected case studies, there is a gap in the literature exploring the role of third party actors in the conflict management of transboundary river disputes and their role in the emergence of river agreements. While these case studies provide invaluable insights on the role of third parties in the conflict management of river disputes in certain cases, there is no quantitative and systematic comparison of multiple cases, including instances without third party involvement.

Thus, this study will contribute to the literature on water and conflict by examining the role of third parties in bringing about river agreements. This study aims to answer the following research questions: *Under what conditions do international third parties mitigate river disputes through river agreements? Do third party actors increase the likelihood of the emergence of river agreements, and if so, why and how do they facilitate cooperation among riparian states?* In addressing this major question, this study also attempts to identify the factors that explain *the occurrence of third party intervention in river disputes*, although this is not a major focus of the study.

## **Previous literature and rationale: empirical and theoretical considerations**

### *Empirical considerations*

Although previous research has made a significant contribution to our understanding of riparian conflict management, there remain some gaps. These shortcomings are both empirical and theoretical. I will start with a discussion of empirical (research design) problems identified in previous research. Five main problematic issues stand out. First, there is a discrepancy between quantitative and qualitative approaches to the study of conflict management of river conflicts. Many case studies have not been integrated and explicitly situated in quantitative work, which is problematic because using only one approach lacks either breadth or depth. Reliance on case studies brings the problem of selection bias and unrepresentativeness, while reliance only on quantitative work may not allow for identification of the underlying processes that explain how and why third party involvement facilitates cooperation. There are several case studies dedicated to the study of the role of third parties in managing river disputes (see Zawahri 2009; Nakayama 1997; Biswas 1992, 1999; Nishat and Faisal 2000; Weinthal 2002), but the findings of these works are inconclusive and divergent<sup>3</sup>. For example, some scholars argue that third party actors cannot overcome the power preponderance within a basin (see 1993) or they do not have enforcement mechanisms to be able to influence states (Lowi 1993; Turton 1999; Dombrowsky 2007). However, another body of literature finds that third party involvement in river disputes plays a significant role in the resolution of these disputes and that third party involvement has facilitated cooperation over transboundary rivers (see Zawahri 2009; Nakayama 1997; Biswas 1992, 1999; Nishat and Faisal 2000; Wolf 1997; Weinthal 2002). Yet, what is lacking in

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<sup>3</sup> Please see Chapter II for an extensive discussion of these case studies and literature on the role of third parties in river disputes.

these case studies is an explanation as to how and why third parties were able to facilitate formalised cooperation. For example, Nakayama (1997) and Wolf (1997) emphasise that the success of third party efforts is conditional on financial and political backup in the conflict management of river disputes. Yet these studies lack further elaboration and nuanced explanation, as to what financial and political backup means, how and why it is needed, and what problems these measures address and why they bring about cooperation.

The second problem with previous research is that existing quantitative research which explores the factors that bring about river agreements clump together cases with and without contention over river water (see Tir and Ackerman 2009). However, these agreements, which are signed by states that do not have any contentious issues over river water, do not require signatories to change their behaviour and might not carry any meaningful implications for these states. States which experience disputes over the river issues might find it much more difficult to reach an agreement because an agreement requires a change of behaviour. In this context, the factors that are found to be important for the emergence of agreements in both conflict and non-conflict cases may not necessarily be the same when states experiencing conflict are singled out. In addition, another important distinction that has not been made is between river disputes and other types of territorial claims. For instance, the excellent study by Hensel et al. (2008) explores whether international institutions increase the likelihood of the emergence of agreements. However, whereas joint river institutions are included in their study, it does not separate out riparian conflicts. Instead, the study examines all types of claims including territorial, maritime and river claims rather than only river disputes. The study of river claims is important because generalised conclusions for all types of conflicts ignore the specificity of each type of dispute. Understanding the role of third party involvement in the context of a river dispute is important because the



existing general literature on mediation suggests that the type of issue under dispute affects the outcome of mediation. Disputes can be over territory, religion, ethnicity, ideology, or river water. Territory, for example, is considered difficult to resolve because of its zero-sum nature (Ott 1972; Lall 1966) and that territorial issues are the most conflict-prone of all issue types (Vasquez and Henehan 2001; Vasquez 2001; Gibler 1997). Other scholars (Bercovitch et al. 1991) find to the contrary, that disputes over territory are easier to mediate compared to ethnic and ideological disputes. In this regard, Hensel et al. (2008) in their study conclude that river or maritime issues are less likely to cause militarised conflict compared to territorial issues, implying that river disputes and their settlement will be different from other types of conflicts.

The third problem with previous research is that it has looked at institutional issues more broadly, rather than focusing on conflict management explicitly. For example, Tir and Stinnett (2011) focus on the institutional designs of river treaties, and explain that types of issues that emerge over river usage influence how much river treaties are institutionalised. Yet, they do not explain how these issues over rivers are managed in the first place so that riparian states reach river agreements. Another study (Tir and Stinnett 2012) also focuses on how the degree of institutionalisation of river agreements can offset the propensity of militarised conflict under the pressure of climate change. Yet, the major shortcoming of this study is that militarised conflicts as their dependent variables are not conflicts over water. Another study looks only at negotiation attempts rather than river agreements as their dependent variable (Hensel et al. 2006). Negotiation attempts may not necessarily indicate the successful management of the dispute that results in agreement. It is acknowledged that there are issues related to the quality of agreements and compliance with agreements. However, having an agreement in place allows parties to resolve

any new issues within this framework so that disputing parties are able to find common ground instead of resorting to military conflict.

The fourth problem is that the research on third parties in riparian disputes has been geographically restricted, since it only explores disputes in America, Western Europe, and the Middle East. Previous quantitative research on third party conflict management of riparian conflicts has omitted Asia and Africa from its analysis<sup>4</sup>. Yet, Asia and Africa are particularly important to examine for three reasons. First, the majority of basins in these regions were identified as being at risk of political and water stresses and most vulnerable to potential water conflict (Wolf et al. 2003; Falkenmark 1989; Rijsberman 2006; De Stefano et al. 2012). In this regard, for instance, Gleditsch (2012) in his overview of the literature on climate change and conflict mentions that Africa and Asia are the regions to focus on. Thus, previous research has ignored the regions most vulnerable to climate change. Secondly, most of the states in these regions are developing nations with weak socio-political institutions. It is almost a truism that developing countries will be affected the worst. However, there is not much understanding of how to resolve the increasing conflicts caused by climate change in poor and fragile countries (Smith and Vivekananda 2009). Thirdly, there is more intensive third party engagement in these regions due to the socio-political conditions of the majority of states. For example, the activities of international development banks and other international organisations are much more focused on these regions.

The fifth problem for empirical research into the conflict management of riparian conflicts has to do with the conceptualisation of third parties. Whereas previous research primarily focused on mediation efforts in river disputes, there is a need to incorporate a broader conceptualisation of third party

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<sup>4</sup> According to the ICOW website, the data on other regions are being collected , but have not been completed yet.

involvement. The rationale for a broader third party concept is of three parts. First, river disputes are related to economic needs of states and therefore river water has utilitarian value. The nature of river disputes relates to the usage of transboundary river water for irrigation purposes, dam building or infrastructure development even though the access to potable water is not an issue. As mentioned before, according to Yoffe and Larson (2002), 84% of river issues are over water quantity and infrastructure development (these issues are often interrelated). This allows third parties to have an influence on riparian states through economic incentives such as aid, river related projects, workshops, and feasibility studies which can affect the emergence of agreements. These activities are not often captured as third party involvement if they are conceptually restricted to mediation efforts only. Secondly, as previous research has shown (Wolf 1998; Yoffe et al. 2004) conflicts over water have never resulted in a large full-scale war, but rather have resulted in diplomatic or low level conflict. At such a low level of dispute, other non-interventionist techniques are expected to be employed by third parties. However, the majority of existing research on third party intervention in riparian disputes focuses on active third party techniques such as mediation. In this context, small scale activities such as seminars and workshops will be relevant and consideration should not be confined to mediation techniques only. Thirdly, a broad conceptualisation is also important because it can help us to understand whether third party activities that are related to the development needs of states are more effective than purely diplomatic efforts in facilitating cooperation in riparian contexts.

This study sets out to address these shortcomings in previous literature. Therefore, this research project is the first quantitative large sample empirical study which aims to identify through statistical analysis if third party intervention increases the likelihood of reaching river agreements between

states that experience riparian disputes. It also seeks to answer how and why third party intervention increases the likelihood of reaching river agreements through an in-depth process case study. In order to answer the proposed research questions, the study combines qualitative and quantitative methodological approaches. While the quantitative method is suitable to identify the effect of third party involvement on the emergence of river agreements on a large scale, the qualitative method could explain how and why third party actors facilitate riparian cooperation. Therefore, in order to address the questions posed in this study a mixed method approach was deemed to be the most appropriate. The statistical analysis focuses on third party involvement as the main independent variable of interest, and analyses its relationship with regard to the emergence of river agreements.

As for the qualitative part of the research project, the empirical data were collected through fieldwork in four Central Asian states (Kyrgyzstan, Kazakhstan, Uzbekistan and Tajikistan<sup>5</sup>). The fieldwork included interviews to obtain insights from a third party actor's perspective, as well as the primary parties' perspective on the third parties' role in river dispute management. In order to identify how and why third party intervention increases the likelihood of reaching river agreements, the process tracing case study method was undertaken and this allowed linking the causes with the outcome. Moreover, it focuses only on riparian conflicts and not on river dyads in general. In addition, the study focuses explicitly on third parties, rather than on broader institutional arrangements. Lastly, this study collects and presents novel data on conflict management in Africa and Asia, regions that have so far been omitted from the existing literature.

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<sup>5</sup> Turkmenistan is considered a part of Central Asia. However, this country was not included in the case study. The reasons for this decision are provided in Chapter III.

This study, as mentioned above, departs from most of the existing literature in terms of its conceptualisation of third party involvement. “Third party involvement” is defined as the efforts and measures undertaken by external actors, who are not directly involved in a dispute, in order to influence and encourage disputing states to manage and resolve issues by peaceful means and reach a formal agreement. These techniques can include seminars, conferences, financial aid, good offices, feasibility studies, projects and many other techniques<sup>6</sup>.

#### *Theoretical considerations*

Research on river conflicts has also encountered theoretical problems. There is, in general, a lack of a theoretical tool that we can use to understand riparian conflict management processes. Hence, we cannot yet explain *why* third party actors’ activity in the conflict management of river disputes contributes to the emergence of river agreements. There is no comprehensive explanation of how assistance and support provided by third parties works and how and why third party involvement brings about success. The existing literature that examines the role of third parties does not use a unifying and integrative theoretical framework that would explain how and why third parties facilitate cooperation over shared rivers. One of the reasons why we need an integrative framework is because we encounter interesting empirical phenomena related to river disputes. River disputes appear to be multidimensional. Firstly, river disputes are often presented and perceived as security issues for many states, something over which states are ready to fight if access to water resources is disturbed. Yet, river disputes are also closely associated with the development ambitions of riparian states, hence resulting in both conflict and cooperation. Secondly, river disputes have normative dimensions because transboundary river disputes raise the issue of ownership of transboundary rivers on

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<sup>6</sup> The detailed definitions and the list of activities are provided in the Methodology section in Chapter III.

sovereign territory. Thirdly, river disputes can raise problems from a bargaining perspective due to upstream/downstream relationships, which can put upstream states in advantageous geographic and political positions.

In addition, while there are a number of disputes emerging over transboundary rivers, there are also many international river agreements concluded<sup>7</sup>. Thus transboundary rivers generate both cooperation and conflict simultaneously. However, there is no theoretical framework that can provide an explanation for both. Therefore, there is a need for an integrative theoretical framework that explains both how and why transboundary river conflicts arise and why cooperation occurs through these unique attributes of river disputes.

Existing explanations in the literature are disparate and look only at individual issues, which cannot adequately explain the complexity of the multidimensional aspects of water disputes. Analysis of the existing literature reveals that there is a large body of work that attempts to identify whether water scarcity is related to the emergence of conflicts. There is an explanation as to why conflicts occur from an environmental scarcity perspective. The proponents of environmental scarcity argue that water scarcity increases the likelihood of conflict (Levy et al. 2005; Hauge and Ellingsen 1998). However, much of this research attempts to explain that water scarcity causes the occurrence of civil wars, small armed conflicts and interstate conflicts, many of which do not arise over water resources. Therefore, the claims that non-water related conflicts arise because of water scarcity carries little explanation, and there is no consensus in the existing literature about the potential of water scarcity to cause conflict. Furthermore, resource scarcity-based explanations are rather narrow, and can explain only part of the problem related to transboundary river disputes.

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<sup>7</sup> There are about 400 river treaties signed over the last century according to Wolf (2007).

This body of literature also does not provide much explanation as to why states are able to cooperate over water resources. In addition, while the identification that water scarcity can cause both conflict or cooperation is useful, this also raises the issue as to why and how transboundary rivers are conducive to both cooperation and conflict. Environmental and water scarcity approaches leave little room to propose the explanation in terms of how - and what needs to be addressed - to manage conflicts that arise over transboundary rivers. These approaches also cannot accommodate the explanation of how third parties can promote cooperation in situations of water scarcity.

On the contrary, proponents of relative deprivation theory argue that it is the level of economic development and institutional stability that better explain conflicts than resource scarcity (Theisen 2008). Another body of literature explains the occurrence of conflict from a modernisation perspective. The modernisation model explains that conflicts over water resources occur because of the unsustainable use of environmental resources due to economic growth and competing development needs (Porter and Brown 1996; Trolldalen 1992a).

In addition to environmental scarcity, modernisation, and relative deprivation approaches, there is also literature explaining river conflicts and cooperation from realist perspectives. For example, Lowi (1993) argues that it is unlikely that an upstream basin hegemon would seek to cooperate with weak downstream states if the upstream hegemon does not foresee any benefit from cooperation. Lowi (1993) argues that third party interventions do not play much of a role in this regard. Yet, the World Bank's involvement in a dispute between upstream hegemon India and downstream Pakistan assisted in reaching a lasting river agreement (Biswas 1992). So this case begs the question: *What made India cooperate?* In this regard the concept of bargaining failure may be well placed to explain how third parties assist riparian cooperation. Yet, despite the bargaining failure concept being well-utilised in the general

mediation literature, it is not well developed in water conflict and cooperation literature specifically. There is a need for the bargaining failure concept to be adapted to reflect the unique nature of river disputes. In addition, the bargaining failure concept does not encompass some aspects of river disputes such as legal ambiguity and the securitisation of water disputes which the *transcendancy* framework does.

Focusing on only one dimension of transboundary river problems may conceal how these conflicts are to be managed. This is especially so when the roles of third parties are required to understand the conflict management of river disputes. There is no systematic explanation as to what issues are being addressed, what activities third parties are undertaking and why and how these efforts help to manage riparian disputes peacefully.

There have been some attempts to develop analytical frameworks to explain hydro-politics. For example, Dinar (2000) offers a framework where he aims to explain hydro-politics through combining neo-realist, neo-liberal institutionalism, and some concepts of negotiation, multilateral negotiation and the role of mediators. Yet this framework is a process-oriented approach rather than explanatory. The role of mediators is discussed as an important factor affecting hydro-politics and cooperation, but it does not provide an explanation as to how or why they promote riparian cooperation and is not suitable for the purposes of my research. Mandel (1992) also attempts to develop a framework which includes: non-cooperative settings, environmental imbalance (perceived water scarcity), and power asymmetry as the triggers of conflict. He analyses several case studies to test his hypothesis, yet such an approach only explains part of the problem by focusing only on the triggers of conflict. Savenije and Van Der Zaag (2000) proposed a conceptual framework for the management of shared river basins; however, their framework is prescriptive. In addition, the framework claims to be integrative but suffers from incorporating all possible



solutions in one framework which makes it too cumbersome to apply as an analytical framework in a conflict management context.

The transcendency framework is developed in this study to explain the role of third parties. Firstly, there is not only a lack of literature on third parties, but also existing research does not provide a systematic explanation as to how and why they facilitate cooperation. Financial “carrot and stick” incentives, alongside “political will” are often cited as important in the facilitation of cooperation by third parties, but they are not put within a single framework, and no systematic explanation as to why these factors or activities are important or how they affect conflict dynamics is provided. There is very little explanation as to how assistance and support provided through the work of third parties impacts outcomes or the processes underlying success. The existing literature that examines the role of third parties does not use a unifying theoretical framework that explains how and why third parties facilitate cooperation.

This study aims to address this lack of theoretical framework. Thus, one of the contributions of this study is the development of a new analytical framework used for studying the role of third parties in the conflict management of river disputes. I argue that it is through understanding the nature of transboundary river disputes that it is possible to explain the problems as well as the opportunities that these unique features create for riparian states, and how third party actors address these issues and utilise the opportunities to promote riparian cooperation.

In this study I present “the transcendency framework”, which is aimed at providing a comprehensive explanation of transboundary river disputes. Through the development of this integrative approach, I therefore aim to explain conflict and cooperation over transboundary rivers and the role of third

parties in conflict management of river disputes. This analytical framework is constructed utilising broader literature on water scarcity and conflicts, on emerging studies of transboundary river disputes and conflicts, and on studies that deal particularly with the role of third parties in conflict management of river disputes. The two concepts from rational choice theory of information asymmetry and commitment problems<sup>8</sup> have also been incorporated into this analytical framework. Transcendancy is a framework that utilises previous literature and the unique features of transboundary rivers in explaining the role of third parties. I will here give an overview of this analytical framework, which will be discussed in more detail in Chapters I and II.

### *Transcendancy framework*

Water conflict and cooperation cannot be properly understood unless transboundary rivers' unique features, which are not present in any other conflicts, are taken into account. Transboundary rivers, unlike other resources, have unique features that may create conditions for conflict as well as opportunities for cooperation. I develop a framework called "transcendancy"<sup>9</sup> to utilise these unique features of transboundary rivers.

In the context of this study, the term "transcendancy" is used to describe the feature of the resource that has dual, sometimes opposing, qualities which

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<sup>8</sup> These concepts are explained in Chapter I on page 57. Briefly, information failure occurs when disputing parties have incentives to withhold or misrepresent information when they believe that the release of information may impact their bargaining position. Another issue is that of commitment problems. Disputants cannot make credible commitments when they have opportunities to renege on agreements. It is argued that conflicts or wars occur because of information failure and commitment problems.

<sup>9</sup> The term "transcendancy" was also used by Galtung. However, his use of the term "transcendancy" is about conflict transformation. Galtung means by transcendancy "creating a new type of reality" and "something that potentially was always there is becoming empirical reality"(Galtung 2000, p.4 ). For example, when two countries argue over a piece of land, they both assume that each piece of land should belong to one country only and thus borders have to be drawn. Galtung says that the problem is that they have shared assumption about the outcome that the land should belong to one party. However, joint ownership or condominium could be a transcending outcome.

transcend each other and goes beyond one particular quality or limit<sup>10</sup>. This is also because rivers are continuously in motion and as such are different from static land resources such as oil, gold and minerals. For example, one of the unique features of transboundary rivers is that they ignore and transcend political boundaries created by humans. One of the principal features of the transcendency framework is that transboundary rivers transcend demarcated political boundaries and are not confined within one political and territorial boundary, thus driving state interdependency. Therefore, these features, including specific features related to water (e.g. unsubstitutable and its association with life), give rise to disputes as well as opportunities for cooperation. However, there are some other resources such as fishing resources and the high seas which can also be considered as common pool resources which are in motion. Yet transboundary rivers are different from these resources in two respects. First, unlike transboundary river water, fish are substitutable by other commodities. As such, fish are not associated directly with life, whereas water is. As for the high seas, they are normally outside national jurisdictions, whereas transboundary rivers are governed by national jurisdictions. Second, river disputes concern fresh water, which is directly related to life. There are also transboundary lakes; however, lakes are static waters whereas rivers are in motion transcending state borders.

Thus, the transcendency framework utilises the unique features of transboundary rivers and is based on the three following features:

- 1) Issues related to transboundary rivers are often perceived as zero-sum<sup>11</sup> problems and easily securitised<sup>12</sup>. They fall, therefore, within the realm

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<sup>10</sup> Due consideration was given to the usage of the term “transcendancy”. It was felt that the term “transcendancy” may have various semantic meanings and also was previously used by Galtung. However, it was decided that the term captures all aspects of the suggested concept, and no alternative term was found.

<sup>11</sup> Zero-sum is used in game theory and economic theory. Zero-sum describes a situation when one party’s gain results in other party’s loss. If total gains of one party and total losses of another party are subtracted, it equals to zero. For example, it is like a cake which is divided into different pieces. If one takes a larger piece, there will be a smaller

of high politics. This is because water has two transcending values: superordinate and utilitarian. Water has superordinate value because of its close association to life which in turn makes this resource highly strategic. If water security is based on a realist and zero-sum understanding, this superordinate value of water can give a rationale for military intervention in order to secure access and control of a water resource. In scenarios of water scarcity such perspectives make the resolution of river disputes extremely difficult and may provoke military escalation. Yet, water also has a utilitarian value which can allow the consideration of water scarcity issues from a positive-sum perspective. Water resources are utilised for economic activities to produce certain products and goods which can be traded so that the benefits of water use can be shared. Thus, while the superordinate value of water can securitise the water scarcity issue and may pose challenges for the resolution of river disputes, yet water's utilitarian value may create opportunities for cooperation for riparian states. This is one of the unique features of transboundary rivers, and one of the key features of the transcendence framework.

- 2) The second problem that arises due to the transcendent feature of rivers is legal ambiguity. Rivers cannot be contained within a geographically demarcated political territory because they transcend political boundaries. This raises the issue of ownership and poses serious sovereignty challenges to riparian states. Since there is no universally accepted international law that regulates water allocation, states can adopt different doctrines to reflect their downstream or upstream

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amount of cake left to others. Zero-sum, thus, implies that if one party gains, then it means automatic loss to the opposite side (Bowles 2004).

<sup>12</sup> In the context of this study 'securitisation' is defined as an issue which is considered as highly strategic from a zero-sum perspective, and control and predictability are at the forefront of national policy which is believed to be achieved via military intervention. This definition is also provided in Chapter I on page 40 where the concept of 'securitisation' is discussed more extensively.

interests. On the one hand, upstream states can adopt an absolute sovereignty approach and use water resources formed on their territory as they wish. On the other hand, downstream states may adopt an absolute integrity approach and claim that no activity should be undertaken without their consent because they have a right to the amount of water that has been flowing to their territory for centuries. Such approaches bring clashes of interests between riparian states that can lead to disputes. This is the second feature of transboundary rivers that has been incorporated in the transcendence framework.

- 3) The third problem that arises is that when rivers cross boundaries they create an upstream/downstream relationship that can create credibility problems in the relationship, such as information asymmetry and commitment issues. An upstream state can be in a more advantageous geographic position and may have the capacity to control the flow of river water. For example, upstream states can withhold information regarding water availability and other relevant data regarding upstream water which can contribute to the emergence of river disputes downstream. Downstream states cannot trust upstream state commitments because of that state's geographically advantageous position. Thus, the credibility problem that arises out of this transcendent feature of rivers is the third feature that is included in the transcendence framework.

Through this novel 'transcendence framework', which explains how and why river disputes emerge, I explore the role of third parties in addressing these transcendence issues and how they promote riparian cooperation.

## **Findings, contributions and implications**

The thesis aims to advance the realm of knowledge relating to environmental conflict and contribute to the body of research concerning the conflict management of river disputes. This study looks at how third party intervention assists in achieving peace agreements among states experiencing a river dispute. The study finds that third party involvement increases the likelihood of reaching river agreements among riparian states that experience river disputes. The findings of this study uncover the important empirical pattern that third party involvement increases the likelihood of reaching river agreements by addressing the problems and utilising the opportunities that emerge out of the unique features of transboundary rivers. The underlying processes at work which explain how third party actors facilitate riparian cooperation are explained through the transcendancy framework.

The transcendancy framework explains how third parties, when they have a strategic interest in the country, address the problems of securitisation, legal ambiguity, as well as commitment problems. The reasons why third parties are able to do so are because third party actors attempt to shift river disputes from a zero-sum security issue to a positive-sum utilitarian issue. Third parties may also encourage riparian states to give up their previous extreme claims in relation to the usage of transboundary rivers, and facilitate adoption of a middle ground approach which recognises the rights of other riparian states, and helps to clarify the position of each riparian state in relation to the usage of shared rivers from both legal and normative perspectives. Consequently, third party actors, via their conflict management activities, also contribute to the formation of international norms concerning the usage of transboundary rivers. When disputing parties share upstream/downstream relationships, third party actors help with obtaining and sharing relevant hydrological data and

information in order to address the problem of information asymmetry between parties.

Third party involvement also helps to increase trust via constant dialogue, meetings and financial guarantees in order to address the commitment problems that can exist between riparian states. Third party actors address all three transcendent problems by providing financial incentives and funding, facilitating communication and dialogue, obtaining and providing information, undertaking feasibility studies, projects, and capacity building. This study also reveals that the interaction of states over transboundary rivers is dynamic, and conflict and cooperation can occur concurrently. As a result, there is no particular sequence followed when third party actors address the problems arising out of the transcendent features of shared rivers. Rather, third party activities in addressing the transcendent issues overlap and can occur simultaneously.

Another finding that the study reveals is that third party actors get involved in disputes in states where they have a strategic interest. In addition, third party intervention does not occur in states which are hostile to major western powers. This phenomenon of third party intervention can be explained from a demand and supply perspective. Firstly, the study reveals that the major third party actors involved in river disputes are IGOs, international development banks, and major western states. This implies that hostile relationships to major western powers significantly reduces the number of third party actors willing to be involved in river disputes. Similarly, such states experiencing a river dispute may not be willing to accept any intervention from western states or organisations associated with the western powers. Moreover, it is also found that if states experienced previous mediation, it is more likely that they will accept third party involvement again. This can also be explained by strong

strategic interests of the third party in the region. In addition, it has been revealed that the greater the number of rivers that riparian states share, the less likely they are to experience third party intervention. Closer examination of data reveals that states which share the largest number of rivers are the states with the largest populations. These findings imply that intervention in these riparian states could be too costly for third party actors to be able to influence these states. Similarly, rivers for these riparian states may be too important, and they may prefer to deal with any river disputes bilaterally without any third party intervention.

This research project thus makes an important contribution to the scant but emerging research field concerning the conflict management of river-related disputes. The findings of this study also have important implications for policy makers by showing the specific mechanisms relating to how third party intervention contributes to the emergence of river agreements. Since one of the major concerns relating to the security implications of climate change is associated with water availability, the study of the role of third parties in the conflict management of riparian disputes is particularly important. For example, it is believed that the consequences of climate change in fragile and tropical countries are almost unavoidable. Therefore, it is best to develop adaptation mechanisms, which can be the presence of agreements. For example, Salehyan (2008b) argues that it is the governance mechanisms, which connect the environment with conflict, that need to be identified in relation to how best respond to climate change. This study considers that third party actors address the shortcomings that occur in international water governance. Third parties do so by increasing adaptive capacity, which helps mitigate potential militarised conflicts arising due to water stress.



## **Limitations**

As with all research, the current research has certain limitations. It is important to discuss the limitations of the study and be explicit about what this study argues and what it does not. First of all, the present study covers only two regions: Asia and Africa. Therefore the findings of this research are only applicable to these regions. It is recognised that a study on a global scale would carry more weight, yet, due to time and resource constraints, it was impossible to collect data worldwide. It is also recognised that since the study covers two regions, the research design could have benefited from including another case study from Africa. However, again, it was impossible to do so due to time and resource constraints.

I would also like to state explicitly that this study does not discuss the effectiveness and sustainability of river agreements. It also does not delve into a discussion of the conditions under which third party interventions are successful, as it is recognised that there are instances when third party involvement was not always able to facilitate riparian cooperation. Rather, these are aspects that need to be explored in the future. It is recognised that these considerations are important aspects of conflict and cooperation over rivers, yet this study does not incorporate this aspect and is limited in this regard.

## **Concepts and definitions**

Before proceeding further, some definitions and concepts are discussed in this section as it is important to explain the scope, context and limits of this research project. I will shortly clarify how I have defined my central concepts. This study uses *river agreements* as the dependent variable and as an indication of *formal cooperation* over international rivers. The definition of river agreement is provided in Chapter V.

I use the definition provided by Robbins (1978, p.67) that defines *conflict* “as any kind of opposition or antagonistic interaction between two or more parties”. Therefore, in the context of this research project, conflict is not necessarily defined as a militarised dispute with a particular threshold of deaths, but it can be as low as being “mild verbal expressions displaying discord in interaction” to the highest level of a formal declaration of war<sup>13</sup>. There is an intensity scale of the conflict and definitions for each scale of conflict, which is provided in Chapter V.

This study uses the term “conflict management”<sup>14</sup> rather than “conflict resolution” because there is a difference in meaning between these two terms (Robbins 1978). Conflict resolution indicates cessation or elimination of conflict, while *conflict management* implies minimising the negative effects of conflict and enhancing the positive aspects of conflict (Rahim 2002). As mentioned previously, the conflict over water resources is dynamic and ongoing, and the presence of a river agreement does not imply that the dispute over the river has been eliminated, or that the dispute will never arise again. Therefore, “conflict management” is a more appropriate term in the context of this study. Conflict management in this study is used to imply that disputes are managed in a peaceful way and certain activities are undertaken to decrease the tension to avoid the possibility of military escalation.

*Hydro-peace* is defined as a condition in which riparian states experience no violence or militarised disputes over transboundary waters and engage in cooperative inter-state relationships.

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<sup>13</sup> The definition of intensity of conflicts is obtained from the Water Event Database (Yoffe and Larson 2002).

<sup>14</sup> Another term “conflict transformation” has emerged in recent years. Some scholars argue that “conflict transformation” is different from “conflict management” and “conflict resolution”. However, the definition of “conflict transformation” varies depending on who is writing and the social level of the conflicts that they concern (Mitchell 2002). Some imply that conflict transformation brings about some major change in some aspect of the conflict, or a qualitative shift in conflict, or is about a way of looking at and seeing, and making sense of, social conflict (Mitchell 2002; Lederach 1995). It is a relatively new term, and no consensus exists, therefore I decided to use the term “conflict management”.

*De-securitisation*- I use the Copenhagen School's definition of de-securitisation: "a process in which a political community downgrades or ceases to treat something as an existential threat to a valued referent object, and reduces or stops calling for exceptional measures to deal with the threat" (Buzan and Waever 2003, p.489).

*Transboundary rivers* are defined as rivers that cross one or more state boundaries flowing from one state to another, or form the boundary between states. *Riparian states* are states that share a common river.

### **Structure of the thesis**

I will end this Introduction by laying out the structure of the thesis. The thesis comprises six chapters. After the Introduction, Chapter I outlines the analytical framework and develops and discusses the 'transcendancy' framework which is utilised in this research project. It starts with explaining and developing the first component of the transcendancy framework relating to securitisation and utilisation, followed by an explanation of legal ambiguity and credibility problems. In Chapter II, the transcendancy framework is further developed but it also incorporates and discusses the role of third parties in conflict management of river disputes through the transcendancy framework. Chapter III outlines the methodology and research design of the thesis. It starts with a discussion of the pros and cons of using only qualitative or quantitative approaches. Then it discusses the case study method and the advantages of utilising the process tracing case study in this research inquiry in more detail. It is then followed by detailed discussion of the research design of the quantitative part of the research. Furthermore, it discusses how the data was collected, how the main independent variable was operationalised and what

statistical models were used to conduct the statistical analysis. Chapter IV presents the findings of the quantitative part of the project, starting with the descriptive statistics and followed by the results of statistical analysis. Chapter V analyses the Central Asian case and the role of third parties in facilitating cooperation in this region. The first section is descriptive, providing a brief overview of each state in Central Asia. It also includes a brief account of a river basin and hydrology, and an overview of the major issues regarding transboundary rivers in the region. Then Central Asian river agreements are presented in chronological order, focusing on the process and how third party actors facilitated these agreements. In this section, the role of third parties in the emergence of river agreements has clearly been linked. Then, drawing on evidence from primary and secondary sources, the role of third parties in facilitating riparian cooperation in Central Asia is further analysed through the transcendency framework. In this Chapter, it has been identified that third party actors in Central Asia helped to address the transcendent problems and assisted in reaching river agreements. Chapter VI elaborates on the role of third parties in the conflict management of river disputes based on the findings of the statistical analysis and the case studies. In this chapter, the roles of third parties are analysed through the transcendency framework. The chapter argues that third party actors help shift the focus from the securitisation of water to the utilitarian aspects of water, help to clarify legal ambiguity, and assist with addressing the problems of information asymmetry and commitment. In the concluding section, the findings of the study are summarised and the implications of these findings are discussed, followed by recommendations for future research on this topic.

# Chapter I Theoretical Framework: Transcendancy and Transboundary River Disputes

## Introduction

The aim of this chapter is to develop and explain the transcendancy framework, an analytical tool that seeks to explain how and why third party actors might be able to promote riparian cooperation and facilitate states to reach an agreement. As mentioned in the introduction, there is not only scant literature exploring the role of third parties in transboundary rivers disputes, but there is no unifying and integrative analytical framework that explains the role of third parties in river disputes. In order to construct such a framework, this study draws on previous research and empirical evidence through understanding and explaining how and why river disputes come about and why cooperation occurs.

Chapter I is divided into three sections. The first section starts with a discussion of the first transcendancy feature of transboundary rivers, namely securitisation and utilisation. This section analyses existing literature on water scarcity and conflict, and explains how river disputes are often considered from a zero-sum security perspective or from a positive-sum utilitarian perspective. It is worth noting that the first section is long compared with subsequent sections, the reason being that it is partly reflective of the dominance of the water scarcity issue and conflict research in existing literature. The second section proceeds with a discussion of the next transcendancy feature, namely legal ambiguity. The third section explains how the transcendancy feature of rivers such as upstream/downstream relations creates a credibility problem. This section discusses how the existing concepts of bargaining failure, such as

information asymmetry and commitment problems, are incorporated in the context of river disputes and the transcendency framework.

## **Water scarcity and conflict: Water utilisation or securitisation?**

A review of existing studies suggests that there is a divergence regarding the causality of resource scarcity and conflict and the causal link of environmental scarcity and conflict does not appear to be straightforward. Understanding whether environmental scarcity, particularly water scarcity, can lead to the outbreak of conflicts is important. Analysis of previous literature on water scarcity and conflict through the prism of securitisation and utilisation helps to unravel the nature of water conflicts.

One of the prominent eco-scarcity proponents, Homer-Dixon (1999), argues that environmental scarcity causes group identity conflicts, migration and insurgencies. Homer-Dixon's argument is that decreasing access to renewable resources will result in "resource capture" and "ecological marginalisation" (Homer-Dixon 1999, p.30). Due to an expected increase in demand and decrease in supply of resources, elites will capture the resources which will result in even more scarcity for non-elite groups. These marginalised groups migrate to other places which seem to be more resource-abundant and thereby create deprivation conflict between locals and the migrant population (Homer-Dixon 1999). However, Homer-Dixon's work and other case study-based findings are criticised for the selection bias toward the dependent variable and the inclusion of case studies experiencing conflict and environmental destruction (Gleditsch 2007). Gleditsch (2007) argues that it is not possible to generalise from such studies, because no case without conflict was included even though such cases may have environmental degradation and scarcity-related issues. Also, there is no consensus as to whether environmental change

and scarcity issues pose a national or international threat. Several scholars challenge whether large scale conflicts such as wars or interstate conflicts result directly from depletion of environmental resources and degradation, or whether other social ills such as poverty, corruption, inequity and other problems are prerequisites of the environmental degradation that causes conflicts (Theisen 2008; de Soysa 2002; Ohlsson 2000).

In light of this debate, several conceptual models have emerged explaining why environmental change leads to conflict. For example, the modernisation model posits that economic growth and development leads to unsustainable use of environmental resources which leads to conflict between states (Porter and Brown 1996; Trolldalen 1992a). Another proposition is that environmental change causes domestic disputes which spill over across borders (Wilkenfeld 1973; Gleditsch et al. 2008), while some see environmental scarcity as the trigger of other socio-economic problems (Trolldalen 1992a; Theisen et al. 2012).

Several large-n studies which investigate the connection between environmental scarcity and conflict also come to divergent conclusions. For example, Hauge and Ellingsen (1998) undertook one of the first large-n studies analysing the relationship between environmental degradation and domestic armed conflict. They tested whether factors such as land degradation, deforestation and water scarcity in combination with high population density increase the risk of small armed conflicts. Hauge and Ellingsen's (1998) findings in relation to water conclude that freshwater availability and deforestation increase the incidence of small armed conflict rather than the incidence of civil war. Theisen (2008), on the other hand, was not able to replicate Hauge and Ellingson's findings and therefore is sceptical about eco-scarcity arguments. He argues that his results are more supportive of rational choice and relative deprivation theory because such predictors as development,

state strength and institutional instability are much stronger predictors of conflict than resource scarcity (Theisen 2008). Indra de Soysa (2002) also questions the robustness of Hauge and Ellingson's findings because environmental scarcity variables do not take into account the level and rate of change. Indra de Soysa (2002) suggests, examining data on total stock of natural capital, that resource scarcity has no relationship to armed conflicts.

Another study (Levy et al. 2005) looks at the relationship between freshwater availability and the incidence of civil war. This study concludes that rainfall deviation has a strong relationship with high-intensity conflicts but no relationship with low-intensity conflicts (Levy et al. 2005). This finding is the opposite of a widely agreed view that water scarcity increases the likelihood of small scale conflicts (Levy et al. 2005). Hendrix and Salehyan (2012) examine whether change in rainfall patterns can affect internal unrest. By utilising a broader definition of conflict and a new database of over 6,000 instances of social conflict over 20 years, they reveal that rainfall change and extreme environmental changes have a significant effect on large-scale as well as small-scale instances of political unrest. However, contrary to the above described research, Theisen, Holtermann and Buhaug (2012) argue that weather changes such as drought have no effect on the onset of civil wars in Africa. They argue that the onset of civil wars in Africa can be explained by sociopolitical and geographic factors such as marginalised populations, high infant mortality, proximity to international borders, and high local population density.

Lack of availability of freshwater, soil erosion and land degradation are possible consequences of human activity, failed governance and conflict. Therefore such deterministic approaches to conflict and environmental scarcity are challenged. Salehyan (2008b), for example, questions the "deterministic" approach to studying environmental scarcity and conflict and proposes investigating not the causes but contingencies. Resource scarcity may mitigate



conflict but conflict can also be exacerbated by social and political factors (Salehyan 2008b). High unemployment and little prospect of finding any legal economic activity in the formal sector in a peasant society makes joining rebel groups more attractive and financing insurgencies cheaper (Grossmann 1991). Some scholars (Goldstone 2001; Ohlsson 2000) therefore argue that it is not environmental degradation that causes conflict but population change and social incapacity that bring about political crisis. Inadequate economic growth leads to an inability to absorb urban population growth as well as an inability to meet the expectations of highly educated youth and this may cause internal political instability.

Unlike research previously discussed, there is another body of literature which claims that water shortages will be the cause of violent interstate conflicts (see Falkenmark 1990; Gleick 1993; Lonergan 2001; Klare and Myers 2001; Starr 1991; Remans 1995; Samson and Charrier 1997). Such claims contribute to the securitisation of water. Gleick (1993), for example, provides a rich history of conflicts over water and argues that states would not only fight for water in the future but are in fact already fighting. Most of this literature presents some conflicts in the Middle East as conflict over water resources (Cooley 1984; Westing 1986; Myers 1993). For example, Westing (1986) and Cooley (1984), argue that a cause of the 1967 war and the 1982 Israeli invasion of Lebanon in the Middle East was over the Jordan River and access to water.

Some literature concludes that water scarcity may increase low-level interstate armed conflict (see Furlong et al. 2006; Gleditsch et al. 2006; Toset et al. 2000). For example, Furlong, Gleditsch and Hegre (2006, p.100) found that “a river-sharing dyad in which at least one member suffers from water scarcity has a 41% higher risk of experiencing an outbreak of a militarised dispute with at least one fatality”. The literature suggests that there is no consensus on whether water scarcity increases domestic- or inter-state conflict. Even though water

scarcity and conflict are widely cited in high politics and international forums on climate change, very little research has been done to identify the direct relationship of water scarcity and conflicts that have arisen due to water issues. However, all these large-n studies, both non-state and inter-state conflicts, investigate the relationship between water scarcity variables and conflicts that were not necessarily due to water, or conflicts over water<sup>15</sup>. Most of the studies utilise MID data with different thresholds of fatalities which do not distinguish between water- or non-water-related events. Therefore, the claims that water scarcity can cause conflicts which are based on these findings are rather presumptive. In such cases, it is difficult to establish causation, since the conflicts that have arisen have not been over water-related issues.

Environmental degradation and scarcity are more likely caused by conflict itself. As described above, such claims can easily be refuted, and these non-water-related conflicts can easily be explained via relative deprivation theory.

The literature discussed above is related to wider water scarcity and conflict debates, rather than transboundary river disputes. However, water scarcity as a conflict trigger plays a central role in the discussion of international transboundary river disputes, because water scarcity claims contribute to the security discourse over transboundary river disputes. Yet, the water scarcity approach alone does not provide a full explanation as to how and why river disputes emerge and cooperation occurs.

## **River conflicts and securitisation**

There is emerging quantitative literature on transboundary river-related conflicts (Wolf 1998; Yoffe et al. 2004; see Hensel 2005; Hensel et al. 2008; Hensel and Brochmann 2007). For example, several studies that use data from the Water Events Database show that, even though conflicts over water have

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<sup>15</sup> During the research process, an attempt was made to collect data on non-state conflicts that occurred over water issues. However, this was not pursued further. See Appendix I for a detailed explanation.

never resulted in large full-scale wars, diplomatic or low level conflicts over international rivers do emerge (Wolf 1998; Yoffe et al. 2004; Wolf et al. 2003). For example, Wolf et al. (2003) analyse water-related events concerning either conflict or cooperation between states over 50 years and attempt to identify the basins at risk of water-related conflict. Their study finds that it is not the physical parameters of water basins that are major contributors to the outbreak of disputes but rather the institutional capacity within a basin, which is indicated either by river agreements or river-related institutions (Wolf et al. 2003). They argue that rapid changes within the basin, either institutional or physical, can upset relations between states. The presence of a strong institutional capacity, however, can absorb the disturbance and prevent the outbreak of conflict (Wolf et al. 2003). Turning to a recent study, De Stefano et al. (2012) observed water events between 2000 and 2008 and concluded that despite tensions over water, cooperative events over water generally supersede the incidents of conflict. Yet, when the events during the periods 2000-2008 and 1949-1999 are compared, De Stefano et al. (2012) find that conflict-related events are on the rise.

Another study (Hensel and Brochmann 2007) which utilises data on river claims (1900-2001) from the Issue Correlates of War (ICOW) Project examines the factors that explain the outbreak of river disputes and the militarisation of these disputes. They find that water scarcity can contribute to the onset of river disputes and militarisation, but the presence of river agreements can mitigate both the outbreak of river claims as well as their escalation (Hensel and Brochmann 2007). Hensel, Mitchell and Sowers (2006) also argue that water scarcity not only increases the likelihood of water disputes and militarisation but also decreases the likelihood of setting up conflict management institutions. Likewise, the study undertaken by Brochmann and Hensel (2009), which examines the management of internationally shared rivers in the Americas,

Western Europe, and the Middle East from 1900-2001, suggests that it is more likely that river disputes emerge when water is scarce. However, at the same time, when water is scarce it is more likely that these river disputes would be negotiated (Brochmann and Hensel 2009). It should be noted that these studies cover only the Americas, Western Europe, and the Middle East.

As discussed above, the literature connecting water scarcity and conflict is growing and attracting much attention from scholars. Such intense attention from academia and political leaders on the issue of water scarcity and conflict invites two questions: Why has water and its scarcity attracted so much attention? What is it about water that indicates that states and people might want to fight over it?

I propose that the answers can be found by exploring the unique qualities of water. It is not unusual that states claim that free and unobstructed access to water is their right, because water is associated with life, a resource for which there is no substitute. As such, water resources possess superordinate values and can be considered as a strategic resource. One of the flip-sides of having a superordinate value is that conflict over the water resource can easily be securitised due to its close association with life and can easily be placed within the realm of high politics.

A few ethnographic and historical works attempt to explain the attributes and meaning of water (Hamlin 2000; Strang 2004; Bakker 2005). They mention that, apart from its pure economic value, water may have symbolic dimensions and different identities ascribed to it (Hamlin 2000; Strang 2004; Bakker 2005). For example, Strang (2005, p.115) mentions that ethnographies identified “some major themes of meaning, presenting water as a matter of life and death; as a potent generative, and regenerative force; as the substance of social and spiritual identity; and as a symbol of power and agency”. Bakker (2005, p. 559)

mentions that one of the problems of the objectification of water is “due to water's geography: a life-giving, continually circulating, scale-linking resource whose biophysical, spatial, and sociocultural characteristics render it particularly resistant to commodification”. Therefore Bakker (2005, p.559) believes that these features make water an ‘uncooperative commodity’.

In the IR literature, aspects related to explaining or understanding conflicts through an issue area are not new. Rosenau (1966, 1967), for example, argued that issues that involve both intangible means and intangible ends such as status issues are apt to create persistent contention and disputes which are difficult to resolve. Mansbach and Vasquez (1984) further maintained that issues related to values, norms and rules can also be considered intangible and indivisible which makes such disputes intractable and challenging to resolve.

Blatter and Ingram (2000) explore subjective values and meanings in different social contexts. They argue that when riparian states connect water to an “essentialist” or fundamentalist discourse, rational solutions such as side payments or package-deals are extremely difficult. Marty (2001) also claims that concerns regarding “equity”, which can easily be associated with the superordinate value of water, may inhibit international cooperative efforts, especially when no substantial cost-benefit asymmetry from an economic perspective exists.

Therefore, it is not unusual to hear, particularly in recent years, alarming statements by prominent political leaders that future wars will be over water. Given the high superordinate value of water associated with life, it is not unusual to see that water conflict is considered a security issue. For example, in realist research, many argue that water is often considered to be a strategic resource and it is likely that many countries opt for armed conflict as they consider that a positive-sum outcome would be impossible (Swatuk and Van

der Zaag 2003; Hirji and Grey 1998). Recent debates about climate change and global warming have particularly brought about concerns of a potential severe shortage of fresh water. Thus the water issue has quickly been securitised and its security implications have gained particular attention.

Before proceeding to analyse existing studies further through the prism of securitisation and utilisation, the meaning of securitisation in the context of this study needs to be clarified. The concept of 'security' generally has undergone several shifts. For example, security in the 1920s was defined from a realist perspective. According to realism, international relations are considered anarchic and countries fight for territory and resources in order to maintain their power. In the realist view, security is considered a zero-sum game where one country's weakness is believed to be another country's strength (Waltz 1979). The concept of security in realism is also related to national sovereignty and state-centered ideology and understood in territorial terms (Dalby 1992; Graeger 1996). This concept of security also implies that the role of a state is to protect private land and the property ownership rights of its citizens from external and internal threats to established political order (Paggi and Pinzauti 1985). This realist mode of understanding relies on military means for the protection of state power and sovereignty when there is a perceived threat to the state (Dalby 1992). In the context of a zero-sum game, water scarcity due to its association with life can be considered a national threat. As such, if water scarcity is believed to be caused by the activity of another state, then states are expected to fight. Therefore, studies that attempt to link water scarcity with non-water related conflicts, as discussed before, may support and reinforce the persistence of a conventional military and zero-sum understanding and the perception of water scarcity as a zero-sum security issue.

However, after the Cold War the concept of security took on different dimensions. The conventional concept of 'security' has shifted from the traditional focus on the state level to an individual human level and the notion of environmental security has also been introduced (Gleditsch 2007). Such an extension of the security concept emerged due to criticism that internal factors and indirect transboundary effects are ignored when dealing with environmental issues in international conflicts (Homer-Dixon 1991). For example, Homer-Dixon et al. (1996) postulate that environmental degradation and climate change can have the same disastrous effects as any other traditional security threat such as the nuclear threat or interstate war. The core argument of this claim is that increasing demand for resources induced by population growth will cause violent conflicts within states or between states (see Postel 1999 ; Gleick 1993; Homer-Dixon 1999).

Thus, there are some theoretical difficulties in defining security because when it concerns humans' well-being, understanding of security can be conceptually stretched and many issues can be potentially securitised. In the context of this study, 'securitisation' is defined as an issue which is considered as highly strategic from a zero-sum perspective, and control and predictability are at the forefront of national policy which is believed to be achieved via military intervention. In today's world, the realist mode of understanding may dominate politics and lie behind national security policies which rely on military force for the survival of statehood. When water scarcity is securitised it can be presented as a zero-sum game and the usage of water by one state may imply less water for another state thus posing a security threat.

This can also be related to how water politics is often defined in academic literature. For example, Mollinga (2008) considers water politics in the context of interstate politics regarding allocation and controlling water resources as a scarce resource. In contrast, Turton and Henwood (2002, p.16) considers

hydropolitics<sup>16</sup> as the allocation of values in respect to water in society. In this regard Wegerich and Warner (2010, p.13) mention that water politics often is perceived as influenced by the availability of water, when in reality 'water is affected by politics'.

It is not unusual, therefore, that if any activity is carried out on a transboundary river, then it can be presented by political leaders as a threat to the very survival of the state and as an issue best resolved by military means. In addition to alarmist statements about water wars from prominent politicians, some existing literature also suggests that environmental issues and water scarcity are closely linked to the emergence of conflict.

## **Water utilisation**

Yet water is often used for economic activities such as irrigation, electricity production, industry and farming and many other economic activities. Therefore, apart from water's "symbolic, metaphorical and conceptual significance" (Trigger 1985), studies also reveal the utilitarian use and economic significance of water, thereby constituting an important element in understanding the meaning of water (Behrendt and Thompson 2004; Altman 2004). It is somewhat rare when we discuss water-scarcity-based conflict, for us to consider that we are talking about the usage of water for human basic needs such as drinking, washing and cooking. Such connections usually concern the usage of water for agricultural production and industry. For example, irrigated agriculture plays an important role in the economies of almost 80-90% of semi-arid countries (Warner 2003). For such countries, water availability is closely associated with food production and food security (Warner 2003).

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<sup>16</sup> Turton uses the term "hydropolitics" interchangeably with "water politics".



For example, it was Egypt's President Anwar Sadat, who claimed that if Egypt ever went to war it would only be over Nile water. The Nile River is extremely important for Egypt because it provides 95% of the country's water (Amer et al. 2005). Egypt, referring to the agreement of 1929, threatens upstream states with military intervention and prevents them from utilising the river for dams or other constructions (Selby 2005). This is because of the zero-sum perception that only by deterring other riparian states from utilising river water can they guarantee their own water security. From a zero-sum perspective, for example, upstream riparian states are perceived by downstream states as competitors who compete for the same resource and who can reduce the physical availability of water. Yet, by focusing on water's utilitarian aspect, that is, considering what the water is used for, presents more opportunities for Egypt if it cooperates. For example, Egypt can invest in dam building in upstream Ethiopia. This would allow Egypt to better control and regulate the seasonal flow of the river and have better control over the management of the river upstream. Ethiopia, likewise, may enjoy electricity production and extra revenue by storing water. In addition, Egypt could also buy electricity from Ethiopia. But fear and zero-sum thinking do not allow for reaching such beneficial solutions.

For example, Egypt and Sudan had an intense dispute over the Nile River in 1955-1956 to the point where Egypt moved troops to its border with Sudan. The reason for the dispute was that Sudan challenged Egypt's dominance of the usage of the Nile River and its plans to build the High Aswan dam. After intense disputes and negotiations, Sudan and Egypt signed a river agreement in 1959. This agreement also allowed Sudan to build a number of dams. Currently, Egypt is benefiting from the dams built upstream in Sudan because these dams have stopped sediment reaching Lake Nasser and reduced the threat of sedimentation to the high dam at Aswan (Swain 1997).

In the case when an upstream state uses water for irrigation and reduces water quantity, it is also possible to find creative solutions if cooperation prevails. For example, in the case of India and Bangladesh (where India is upstream and Bangladesh is downstream), there is a possibility of building linking canals with Nepal to increase the total amount of water (Nishat and Faisal 2000). Nepal has tremendous hydro-power potential and could also benefit from such arrangements (Wolf and Newton 2010). By involving Nepal in negotiations, India could benefit from cheap electricity from Nepal, while Nepal could trade for access to the sea and India could end its long dispute with Bangladesh. This solution could be a positive-sum outcome with benefits for all parties.

Therefore, water's utilitarian value relates to economic activities. In the developing world, farming provides livelihoods for the majority of the population. When water becomes scarce this may lead to a decline in agricultural output and force people into internal or external migration (Gleditsch et al. 2008; Salehyan 2008a; Salehyan and Gleditsch 2006).

Another argument is that conflict is more related to the ability of states to absorb displaced people or growing populations who cannot be employed in the farming sector due to a scarcity of water and its knock-on effects in relation to other sectors of the economy. For example, Ohlsson (2000) argues that it is unlikely that conflict will erupt due to the allocation of water resources, but instead due to social ruptures and the inability of social and economic sectors to absorb a growing population. Therefore Ohlsson (2000) developed a new measure of assessment called "social water stress". "Social water stress" uses the "Water Stress" measurement developed by Falkenmark (1989) and the Human Development Index. According to Ohlsson (2000) when the "Social Water Stress" measure is applied to countries such as South Korea, Poland,

Iran, and Cyprus, these so-called “water stressed” countries moved to “relatively water sufficient” due to their high adaptive capacity. Ohlsson (2000) argues this approach allows taking into account a country’s social resources and its ability to adapt to scarcity and absorb social tensions created by water scarcity.

The level of economic and social development of states may determine whether water is used efficiently. For example, there are arguments that water scarcity can be managed internally without provoking conflict and instances can be found in many developed states with strong governments. For instance, despite a water shortage and competing interests in the Murray-Darling basin in Australia, the Basin provides an example of cooperative federalism in the management of the basin due to effective regulatory reform, the development of an effective market-based property rights system, and increased charges for water (Pigram and Musgrave 1998).

Another body of literature claims that water has never been the cause of conflict but rather has encouraged states to cooperate (see Wolf 2007; Swain 2001; Alam 2002; Waterbury 2002). This literature promotes the idea that water is a positive-sum issue and therefore explains observable cooperation over water by emphasising the utilitarian value of water. For example, Wolf (1998) argues that many cases of conflict over water provided by Gleick (1993) are cases when water dams or water were used as military tools rather than causes of conflict. Likewise, Wolf (1998) argues that the case presented by Samson and Charrier (1997) concerned the location of a shared boundary where the watershed also happened to be present. Wolf (1999b) and Libiszewski (1995) argue that water shortage is just one of many other intervening variables concerning conflict in the Middle East region and that water is rarely, if ever, the cause of international wars.

This divide in literature into two opposing spectrums of “conflict” and “cooperation” is refuted by some scholars (Zeitoun and Mirumachi 2008). They argue that in reality, both conflict and cooperation over water co-exist (Zeitoun and Mirumachi 2008). Some scholars even suggest that certain incentives exist for those who exaggerate the water war scenario (Katz 2011; Trottier 2003).

Katz (2011) argues that while some actors voice their concerns out of genuinely felt risk, some actors may want to raise the profile of environmental needs, increase the funding, or signal co-riparians that water is a high politics issue.

The persistence of a national security discourse from a realist and zero-sum perspective may no longer be viable when dealing with global transboundary issues. According to Graeger (1996), the securitisation of environmental issues decreases the potential policy options available to tackle the environmental problems. Therefore Graeger (1996, p.11) argues that “de-securitisation” should be preferred over securitisation.

Focusing on the utilitarian value of water, rather than considering scarcity as a zero-sum option and securitising it, provides more policy options and helps to de-securitise the water issue. For example, Allan (1998, 1997) introduced the notion of ‘virtual water’. This takes into account the amount of water used to produce X amount of wheat. Allan (2003, p.5) defines virtual water as “the water needed to produce agricultural commodities”. For example, Allan calculates that in order to produce a ton of grain, it requires about 1,000 cubic meters of water. If a water-short country imports a ton of grain, it would take away the economic and political stress of finding 1,000 cubic meters of water. Allan also observed that the Middle Eastern and North African countries imported almost 50 million tons of grain annually, which requires 50 cubic kilometres of water to produce it (Allan 2003). This amount of water is almost equal to the volume of water that flows through Nile River to Egypt (Allan

2003). If not for the importation of grain, Egypt would have to mobilise the required amount of water in order to produce 50 million tons of grain.

Hoekstra (2009) also argues that an analysis of global trade patterns shows how trade can either reduce or increase domestic water use. For example, Hoekstra (2009) mentions that 16% of global water was used for the production of goods for export rather than for domestic use. In this case, Jordan imports five times more virtual water than is available internally.

Focusing on the utilitarian value of water helps to shift the perspective from its physical availability to the benefits it produces. Such an approach allows for the shifting from a zero-sum approach to a positive-sum perspective. For example, if an upstream state utilises water for the production of wheat, this may pose a potential scarcity problem for a downstream state which uses water for industry. In this scenario, the downstream state can encourage a reduction in water consumption for agricultural use by compensating the upstream state. Further, this approach can be considered if the usage of the same amount of water for industrial purposes is much more efficient and profitable from an economic perspective. Another perspective, where the utilitarian value of water can be used to desecuritize the water issue, is based on interdependency, which is created by the transcendence of rivers.

The water war scenario considers interdependency as a threat, and states tend to minimise any dependency on another state. However, the transcendence of rivers limits riparian states' independence and increases interdependency. Most of the arguments against 'water wars' also emanate from the transcendent features of transboundary rivers because they emphasise states' interdependency. One of the underlying arguments from sceptics of the 'water war' concept is that there are more shared interests and interdependency between states which are vital for their very existence. Wolf (1998) argues that

states have been more innovative in negotiating their disputes over water and there have been more treaties and cooperation between states rather than wars. He argues that river resources make riparian states interdependent, which predisposes riparian states to cooperate (Wolf 1998). Therefore, economically and rationally “the cost of war” over water would outweigh the benefits of winning the war (Dolatyar and Gray 2000). Dolatyar and Gray (2000) reason that a water war is mutually destructive and makes warring parties worse off, therefore cooperation would be preferred over water. Wolf (1998) argues that in the case of invasion, an invader should consider such issues as occupation and depopulation of the entire watershed in order to prevent any retribution (Wolf 1998). For example, due to the inherent interdependency, there is a high risk that upstream states can blow up dams which might flood downstream countries (Wolf 1998). If the issue is about contamination, destruction of aquatic facilities may result in greater degradation (Wolf 1998).

There is even the proposition that environmental cooperation may lead to general peace building (Conca and Dabelko 2002; Conca 2006). The opportunities for such peace building are seen in the complexity of environmental problems and social relations embedded in ‘ecological interdependencies’ (Conca and Dabelko 2002, p.10). The complexity of environmental problems can be exploited and turned to a multitude of opportunities. As Conca and Dabelko (2002) emphasise, this can be done through “shared collective identity”. They suggest that instead of using a pure bargaining perspective, they see an opportunity in focusing on trans-societal interdependence, creating new norms of environmental responsibility and transforming security-minded state institutions (Conca and Dabelko 2002).

The superordinate aspect of water can, thus, be utilised to encourage cooperation. The transcendence framework does not propose that the superordinate or symbolic dimensions of water need to be omitted. On the

contrary, the symbolic nature and life-giving attributes of water can be brought into discussions to de-securitise water and encourage cooperation. Life's dependence on water may also discourage riparian states which are capable of controlling the river flow from undertaking any radical measures that can have disastrous consequences for other riparian states. Water's uniqueness and symbolic nature may also provide an explanation as to why there is also much cooperation over water.

During the International Conference on Water and the Environment (ICWE) in Dublin, Ireland in 1992, water's economic value was acknowledged in the last principle when it was stated that water should be recognised as an "economic good". However, this principle created a lot of confusion and opposition, particularly from those who were concerned that this principle may deny access to water for poor people in low income countries. These arguments are based on the principles of the superordinate value of water, and its life-giving properties relating to basic human rights. However, as Savenije and Van der Zaag (2000, p.30 ) point out, "water as an economic good" implies that decisions on the use of water should be taken on the basis of socio-economic trade-off analysis, independent of the ability to pay and "where an economic interest has a direct ability to pay (industry, commerce, affluent urban households, etc.) water should preferably be priced at its economic value".

Thus, water as a resource has dual superordinate and utilitarian transcending values. Even though water can be considered an economic resource, decisions on water allocation are not always based purely on economic grounds. This is because water is considered a special resource closely associated with life and for which there is no substitute. On the other hand, such superordinate values may give grounds to consider water as a strategic resource to be securitised, thus providing justification for military intervention to control and secure access to water and contain it within a specified territory. These transcendent

problems arise from the specific features of river water, and need to be tackled in order to reach meaningful river agreements.

## **Legal ambiguity: Absolute integrity or absolute sovereignty?**

Because transboundary rivers cross borders and flow from one state to another, they are not confined within the political boundaries of one state and cannot be controlled and privately owned by one state (Benvenisti 1996). On the other hand, transboundary rivers cannot be classified as a purely public resource either (Benvenisti 1996). In comparison to public resources like the high seas and space, transboundary rivers are still confined to riparian states (Benvenisti 1996). But they cannot be utilised and controlled as static land resources as are minerals, gold or oil. Due to this transcendent feature, the resources that rivers offer cannot be classified as either “purely public (defined as non-rival and non-excludable) or private (defined as rival and excludable)” (Tir and Ackerman 2009, p.623). In this regard, transboundary rivers possess features of both and thus can also be considered as common pool resources or collective goods (Benvenisti 1996). “Common pool resources” can be defined as a natural resource which has two distinct features: excludability and subtractability (Ostrom 2005, 1990; Ostrom et al. 1999). Excludability means that the physical feature of the resource is such that it does not allow us to exclude all the beneficiaries from using the resource (Ostrom 1990; Sarker et al. 2008). For example, it is very difficult, although not impossible, for riparian states to have full control over transboundary rivers and prevent other states from using river waters. However, if an upstream state builds a water reservoir, one state may have the capacity to block water flow to downstream states. Subtractability means that the usage of the resource by one party can reduce the availability to another user (Sarker et al. 2008; Ostrom 1990). If an upstream state withdraws



water from the river, then there will be less water going to downstream states. In this case, transboundary rivers have a dual feature: being both public and private and having features of excludability and subtractability. Compared to resources like gold, oil and minerals, transboundary rivers have ambiguity regarding ownership and sovereignty due to their unique transcendent features.

In this regard, “transcendent” features may give rise to conflicts as well as grounds for cooperation. On the one hand, “transcendence” may lay the ground for conflict because of ambiguity regarding ownership rights. Due to being considered as partially public, when the river flow is interfered with, other users may raise concerns that “more” river water used to flow through their state. At the same time, being also partially private, users on whose territory the water is sourced can also claim their full right to utilise the water as they wish. Because rivers make states interdependent, it also may create opportunities for joint work and cooperation.

The UN Water Conference in Mar del Plata was one of the first attempts to resolve global water problems at an international level and was not successful in terms of enforcing its recommendations and resolutions. Several attempts by the UN to regulate water flow among riparian states failed due to an unclear distinction as to whether the concept refers to just rivers or also land comprising watersheds (Falkenmark 1990).

Falkenmark (1990) argues that river water transcending state borders through the “global water cycle” makes water issues extremely important, but also difficult to resolve. According to Olson (1965) and Ostrom (1990) collective action logic predisposes parties to overuse and misuse collective resources and discourages cooperation. Barkin and Shambaugh (1999), applying collective action logic to the environmental common pool, in this regard argue that actors

adopt short-term thinking as long as enough resources are available. But the shortage of water may shift their outlook to long-term thinking and predispose parties to compromise (Barkin and Shambaugh 1999).

Transcendent features of rivers give rise to various interpretations of states' rights to common resources. Rivers can create problems from an international law perspective because transboundary rivers transcend or form political boundaries. Therefore, this legal ambiguity contributes to transboundary river disputes as there is no robust international regulation which regulates the global water system (Falkenmark 1990; Phillips et al. 2006).

For example, the Euphrates and Tigris originate in Turkey and flow into Iraq and Syria. Dam building activities by upstream Turkey predispose the respective downstream states to conflict, because Iraq and Syria are almost totally dependent on the flow from the Euphrates and Tigris for human water-consumption, for irrigation projects, and for the generation of electricity. Turkey's Greater Anatolia Project (GAP) further exacerbated the dispute over the river. One of the problems is that upstream Turkey took an absolute sovereignty approach, while downstream Iraq and Syria emphasise an absolute integrity approach. Yet, Turkey - as the most powerful state and the upstream state - unilaterally developed the rivers claiming its absolute right to utilise the resources on its territory (Haftendorn 2000).

Since there are no internationally accepted principles or norms, riparian states – whether they be upstream or downstream - base their arguments on doctrines that best serve their interests. Therefore, there are various conflict management doctrines that are applied to international rivers. These legal principles can be classified as follows:

- 1) absolute territorial sovereignty, also called the Harmon doctrine;

- 2) absolute territorial integrity;
- 3) limited territorial sovereignty and limited territorial integrity;
- 4) equitable utilisation (Allouche 2004, p.51).

One of the most extreme doctrines is an absolute territorial sovereignty approach (Trolldalen 1992b). According to this doctrine, a state has rights to utilise water resources on its territory to serve its national interest and can use these resources irrespective of the effects on its neighbors. This doctrine is often adopted by upstream riparians. However, this principle is often abandoned as it ignores interdependence and neglects cooperation (Trolldalen 1992b).

Absolute territorial integrity challenges absolute territorial sovereignty. This doctrine claims an uninterrupted right for the natural flow of a river and favours downstream riparian states. This theory is criticised because it grants rights without any duties (Trolldalen 1992b). The doctrine of limited territorial sovereignty and integrity, and the doctrine of the community of interests in the waters, attempts to take a moderate approach and acknowledge reciprocal rights and obligations between riparian states.

One of the latest is the “equitable utilisation” approach which was developed as a result of conflict among competing theories (Trolldalen 1992b). This doctrine states that each riparian state has a right to use water flowing on its territory and each state is entitled to a reasonable and equitable share of basin water (Trolldalen 1992b). This doctrine takes into account the socio-economic needs of the basin states and distributes the water to maximise the benefits for each co-basin state (Trolldalen 1992b, p.79). Thus, the vagueness of the principles for settling international river disputes reveals the paucity of international law on water rights and leads to increasing international river disputes.

“Customary international law (special or general) develops through a process of claim and counterclaim between states” (De Visscher 1957, cited in Dellapenna 2001 p.266; Chinkin and Sadurska 1991). When a state undertakes any activity, a state which is being affected by that activity may agree to their actions or may disagree and take some measures to stop that activity. Their objection may escalate to the point of military confrontation. Over time, some pattern of behaviour emerges that may eventually become the norm and if the conflict escalates to war, disputing parties are more likely to refer to international law as justification for their claims and actions (Higgins and Unies 1963; Higgins 1970).

For example, Slovakia, Hungary and Austria face a problem over the Danube River which marks the border between the respective states. Disputes arose between Hungary and Czechoslovakia<sup>17</sup> due to a dam project.. Initially proposed as a joint project between the two states, Hungary unilaterally withdrew from the project in 1992 due to environmental concerns and internal political pressure. However, Slovakia continued the project and started withdrawing water from Hungarian territory. The dispute between the two states escalated, and the conflicting parties approached the International Court of Justice in The Hague. Both states were found guilty: Hungary for unilateral withdrawal from the agreement, while Czechoslovakia was found guilty for its unilateral decision to divert the river Danube (Haftendorn 2000). Thus, according to the International Court of Justice decision, there is a principle that shared rivers cannot be used unilaterally by any one state.

The La Plata basin is another example where sovereignty and ownership issues over the transboundary Parana River have been contested. In addition to ownership issues over the Parana River between upstream Brazil and Paraguay

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<sup>17</sup> In 1993 Czechoslovakia dissolved into two separate states Slovakia and the Czech Republic.

and downstream Argentina and Uruguay, there has been contention over ownership rights and legal authority over the Guaira Falls on the Parana River which lies on the border of both upstream states. This was a source of great contention between these two states, and in 1957 Brazil unilaterally took military control of the Falls. One of the reasons was that Brazil wanted to build the Itaipu Dam for hydroelectric power production on this site. Conflict over the site continued for another five years until Paraguay and Brazil finally negotiated to jointly develop the project which would provide electricity to both countries and submerge the Guaira Falls (Elhance 1999).

One of the earliest examples of the use of the absolute sovereignty doctrine in international river disputes is the case between Mexico and the US regarding the Rio Grande River in 1895. In this case, Mexico raised its concerns regarding the harm downstream that the US caused by diverting the river (Dellapenna 2001). The Mexican minister complained that the US violated treaties as well as customary international law. In response to this claim, the US Attorney General, Judson Harmon, gave the US Secretary of State legal advice that the US is not obliged to follow international law and that the USA had the right to use waters on their territory as they wish (Dellapenna 2001). Eventually, after 12 years, these two states were able to sign an agreement whereby the USA agreed to allocate 74 million cubic meters of water annually. After several years, the USA rejected the Harmon Doctrine claiming that this was no more than a special pleading (Dellapenna 2001). This final agreement set the base for subsequent agreements and contributed to the emergence of a set of protocols which contributed to customary international law. Thus the USA's refusal to adopt the Harmon doctrine was an indication of an upstream state's acceptance of a downstream state's right to river water.

Dellapena (2001) argues that this case illustrates the ways in which usage can become international custom. Yet there is a distinction made between “international law” and “customary international law”. Some put “customary international law” into the category of “international law” or so-called “implicit agreements”, which means “custom” or “general principles” (Kliot et al. 2001, p.232). Treaties, in this case, are explicit agreements (Kliot et al. 2001). In this regard, Kliot et al. (2001) argues that both treaties and international custom can help to form international water law. While it is easy to determine the rules from treaties, the norms of customary international law are much more complicated to ascertain (Kliot et al. 2001).

Thus, it may work both ways - treaties can pave the way to accepted international norms and international custom paves the way for treaties. For example, there was a debate regarding whether ensuing treaties can lead to customary law (Dellapenna 2001). After several debates, it was agreed that a consistent pattern of treaties can rise up to the level of customary international law (Dellapenna 2001). Likewise some of the principles such as “equitable use” and “no harm” have been endorsed by the Helsinki Rules and by the UN 1997 Convention. Indeed, one of the first international legal frameworks that outlined some basic legal principles was the Helsinki Rules. “Helsinki Rules on the uses of the waters of international rivers” was framed in 1966 by the International Law Association (ILA 1966). One of the stumbling blocks of the Helsinki Rules regarded the usage of the term “international drainage basin”, because this may include land areas, which might lead to legal complexities. The usage of the term was later replaced by “international watercourses” in the “UN Convention of the Law on Non-Navigational Uses of International Watercourses”. However, even with the use of this term, the problem still exists because of the implication of river basins being a ‘unitary whole’ (Savenije and Van der Zaag 2000, p.23 ). Upstream states, for example, consider a major

tributary to a main river as a separate basin which can give them rights to ignore the interests of downstream states.

Another problem with international conventions is: What should have priority, the right to equitable and reasonable use, or the duty not to cause significant harm? These principles may oppose each other and can also polarise the positions of upstream and downstream states (Sadoff and Grey 2002).

Depending on their geographic position, downstream states may prefer to prioritise the “no significant harm” principle because it reinforces previous usage, despite it being inequitable. Upstream states, on the other hand, prefer to prioritise the equitable use principle because it gives them an opportunity to claim their share in the case of downstream states that have advanced water usage for irrigation or other uses. The Nile basin case is an example where downstream Egypt claims its historical right to the Nile River and any diversion of the Nile may be perceived as creating “significant harm” to Egypt. Less developed upstream states, such as Ethiopia, which are willing to develop the river, tend to emphasise the equitable share of the river. Upstream states have the potential to cause harm by diminishing the water flow significantly, while downstream states can also affect the future use of water by claims of acquired rights to that water (Sadoff and Grey 2002).

While these rules are not treaties, such principles can contribute to cooperative practices incorporated in river agreements. Transboundary river disputes present challenges to riparian states from a legal perspective because international rivers transcend demarcated boundaries. It is not unusual that this uncertainty and ambiguity of legal rights over transboundary rivers can induce both conflict and cooperation (Kornhauser 1992; Radinsky 1994; Ellickson 1991). This ambiguity may give rise to conflict, but at the same time, it

may encourage riparian states to seek bilateral or basin specific agreements in order to regulate the usage of water and clarify riparian states' positions.

## **Credibility problem: Information asymmetry and commitment problem?**

Because transboundary rivers transcend political boundaries and cross or demarcate national borders, they also give rise to other unique features such as the upstream/downstream relationship between riparian states (as mentioned above)<sup>18</sup>. This geographic feature is considered to be another source of power (Daoudy 2009). An upstream state can be in a more advantageous position and may have the capacity to control the flow of river water. The upstream/downstream relationship that emerges out of the transcendent feature of rivers may lead to credibility problems such as information asymmetry and commitment problems.

This study incorporates existing bargaining failure concepts: information asymmetry and commitment problems which emanate from the transcendent feature of the upstream/downstream relationship. The reason for their incorporation is because concepts such as information asymmetry and commitment problems can help to explain the problems that emanate from upstream/downstream relationships. Transcendancy and bargaining failure concepts are similar in that both aim to explain the causes of disputes. While transcendancy explains the reasons why disputes arise around transboundary rivers based on the specific features of rivers, the bargaining failure concept is

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<sup>18</sup> It is acknowledged that sometimes international rivers form the borders instead of crossing the borders. However, after examining the Toset et al. (2000) data, it is apparent that even states that share just one river are found to share an upstream/downstream relationship. Some states share several rivers and some of those rivers can form the borders or have different shapes that cross the borders several times but riparian states still have coding as "upstream state average", which means that on average a particular state is an upstream or downstream state in relation to another state.



also well placed to explain why disputes arise due to river features such as the upstream/downstream relationship.

According to early bargaining theorists such as Nash, bargainers try to maximise their expected utility within a given bargaining situation. This results in an equilibrium outcome (Jackson and Wilkie 2005; Kanner 2004). This approach, however, assumes that there is a perfect information exchange, which is rare in real world bargaining, and this lack of information prompts parties to manipulate the information in order to gain a more favourable outcome during negotiation (Kanner 2004). According to rational choice theory, rational actors attempt to avoid costly warfare and seek to settle the dispute, but can fail to do so because of bargaining failure (Fearon 1995; Reiter 2003). In this study, the author incorporates two explanations from a bargaining perspective:

1) Information failure. This occurs when disputing parties have an incentive to withhold or misrepresent information when they believe that the release of information may impact on their bargaining position. It is not unusual for riparian states to treat scientific data on water as a state secret, as they perceive that the full release of information may disadvantage their bargaining position. In addition, as with any dispute, disputing parties are reluctant to reveal their reservation points and without proper communication channels, hostility may escalate.

2) Commitment problem. Disputants cannot make credible commitments when they have opportunities to renege on agreements. This argument is particularly relevant in the transboundary upstream/downstream relationship where there is always an opportunity for upstream states to renege on an agreement.

One of the mechanisms that leads to bargaining failure is the fact that rational leaders are prone to withhold private information about their relative capabilities and misrepresent such information to gain a better deal (Fearon 1995, p.381). Even though disputing actors wish to avoid costly wars, parties may fail to close the deal via negotiation due to strategic dynamics resulting from asymmetric information and the incentive to misrepresent. However, uncertainty is not the only aspect that can lead to war. Parties may communicate and find out the other party's resolve and how willing they are to settle the issue through military means. Fearon (1995) explains that the problem lies in the incentive to misrepresent private information, as actors are interested not only in avoiding war but also in obtaining a favourable resolution of issues. This logic encourages the parties to bluff about their willingness or capability to fight, in the hope that the other party will make more concessions. On the other hand, the parties may also wish to conceal their capability and willingness to fight in order to make themselves less vulnerable or take advantage of a first strike. With this combination of private information issues and incentives to misrepresent information, even rational actors may fail to resolve the issue peacefully and end up in military conflict (Fearon 1995; Gartzke 1999; Werner 1999).

Most of the time, river disputes arise due to the usage of transboundary river water for irrigation purposes, dam building or infrastructure development. Elhance (2000) mentions that any river developmental work, including projects such as dams, reservoirs and hydroelectric plants, requires accurate historical records of precipitation, climatic variations and other physical and technical parameters of water projects in a particular river basin. Unless such data and information is freely exchanged between riparian states, downstream states will express their concerns when such development works are being undertaken. When upstream states do not release the negotiated amount of

water, this can be blamed on a low level of precipitation or drought. The downstream state may not believe such statements because they do not have independent sources from which they can obtain or verify this information. For example, Israel wrongly assumed that Jordan had diverted too much water from the Jordan River to the East Chor Canal because of misinformation and bombed the canal in 1969. Israel later had to accept that Jordan had merely diverted their legal share (Bulloch and Darwish 1993). Therefore, Elhance (2000) argues that accurate and reliable data, along with extensive communication, is required in order for negotiations over transboundary waters to occur. Yet, this information is often not available or is held as secret information (Elhance 2000).

In another case, a lack of trust in information provided and a lack of information exchange over the Euphrates River nearly brought Iraq and Syria to the brink of war in 1975. Iraq claimed in April 1975 that the Syrians reduced the water flow to an extremely low level thus endangering the livelihoods of Iraqi farmers (Anderson 1988), whereas the Syrians claimed that they were merely passing on to Iraq most of the water received from Turkey. Iraq did not believe such claims and indicated their readiness to resolve the issue via military means. Saudi Arabia along with the Soviet Union allegedly attempted to mediate the situation behind the scenes, and in June 1975 Syria and Turkey negotiated that Syria would release more water to Iraq (Mandel 1992). This dispute also presents a case where there was information asymmetry, and the downstream state simply did not believe the claims of upstream states, there being no institutionalised reliable source of information exchange.

Holding back relevant information and a lack of communication impedes riparian cooperation, thereby creating commitment and information asymmetry problems. Availability of data on water quality and quantity helps

reach an equitable solution and can be the precondition for interstate water management/sharing agreements (Heltzer 2002). Therefore, in international water conventions, one of the key requirements is the provision of information on hydrological data and the activities undertaken on the rivers.

Furthermore, many developing states do not have modern technologies, hardware, and the required expertise to maintain large water projects that allow access to such data and information exchange (Elhance 2000). Powell (2006) therefore argues that because of imperfect information parties can not commit to agreements. The disputing parties would be more likely to reach an agreement peacefully if they have complete information about each other's intentions and capabilities (Fearon 1995; Powell 1999; Fearon 2004). When complete information is available it prevents misunderstandings about other parties' capabilities, intentions and reservation points.

Another problem that might lead to war and bargaining failure is that of commitment. A lack of international enforcement mechanisms creates an environment of distrust and a fear of being cheated during and after the negotiating of an agreement. Therefore, structural realism security concerns make the prospect of international cooperation bleak (Grieco 1988; Waltz 1979). The commitment problem arises when one party expects the other side to uphold the deal in the future and they do not. Even though cooperation is desired and beneficial at the time the agreement is reached, there is a possibility that this may change over time and one of the actors may renege on that agreement in the future. The structure of preferences and opportunities may become advantageous for one of the parties and give an incentive to break their negotiated deal. This leads to a lack of trust between adversaries and they cannot make credible pledges to prevent renegeing on agreements in the future. The negotiated solution to the problem can create an opportunity for the

exploitation of parties in the future. Thus, the adversaries face a dilemma. Even if there is the potential to resolve their incompatibilities at the present time, there is always the possibility for future exploitation by another adversary when circumstances become more favourable. This dilemma hinders reaching a negotiated settlement and can be one of the causes of war. For example, when the weaker actor commits to an agreement, this commitment may not be believed. The stronger actor may perceive that the other party is buying time to regain power in order to strike back later. Therefore, in order to avoid exploitation, the party which may potentially lose out on the power shift may choose a conflicting strategy (Gartzke 1999), unless there are guaranteed enforcement mechanisms (Fearon 2004; Powell 2006; Walter 1997). Many riparian states face a commitment problem particularly when they share an upstream/downstream relationship. Downstream states may not believe that upstream states will comply with the agreement because the upstream state has an opportunity to turn the “tap” on or off.

For example, in the Nile basin, Egypt does not want any interruption to the flow of the Nile, and despite assurances that dams for hydro-electric production do not decrease the volume of water, the idea that upstream states can control the river flow is not acceptable to Egypt. On the one hand, there is a credibility problem because downstream Egypt does not trust upstream states and does not want any state having the tools to control the river, given the utmost importance of the river to Egypt (Swain 1997). For example, Egypt has treated the comprehensive study, supported by the World Bank, on water availability in Egypt as a state secret (see Swain 1997 p.684). Another case is the Aral Sea basin, where upstream states also claimed that dam construction would not reduce the flow of rivers. Upstream states argue that dams would help to regulate the seasonal flow of rivers and help store more water for irrigation purposes. Yet, downstream states are cautious about upstream states

having a greater opportunity to control the rivers, and therefore oppose dam construction.

However, there are cases when the most powerful state in the basin is also an upstream state. In this instance, weaker downstream states may not have the leverage to encourage upstream states to enter an agreement and recognise their water rights. Lowi (1993), for instance, argues that in such cases the upstream hegemon in the basin may simply ignore the pleadings of downstream states and may not necessarily seek an agreement. The case of the Euphrates basin shared between Turkey, Syria and Iraq fits in this scenario. Turkey is the upstream hegemon, and is unilaterally developing the Euphrates River despite opposition from downstream states. Being one of the most powerful states in the region and also being an upstream state, Turkey has little incentive to consider the water rights of downstream states. In addition, upstream Turkey also has little incentive to comply with agreements. This is also the case between India and Bangladesh. Upstream India also has little incentive to consider the rights or needs of downstream Bangladesh, neither does Bangladesh have any leverage to incentivise India to enter cooperative situations or agreements. India also has little incentive to comply with agreements, and Bangladesh has little reason to believe that they would. Riparian states thus find it difficult to cooperate unless they have some enforcement mechanisms that oblige states to uphold the terms.

However, in such an absolute power imbalance scenario, there are several cases where upstream hegemons were able to cooperate and reach river agreements. For example, the Indus basin case where India and Pakistan were able to reach an agreement to separate the eastern and western rivers. In the Jordan Basin negotiations, Israel being much stronger militarily and having control over territory, was also able to negotiate with Jordan (Dinar 2000). However, in

these two cases, there is at least one common denominator - the active involvement of third parties.

Yet, as mentioned earlier, upstream/downstream relationships can give rise not only to disputes but also to cooperation. This unique transcendent feature may indeed make riparian states interdependent, offering opportunities to share the benefits for all parties if riparian states are able to overcome mistrust. There are a number of cases when upstream/downstream states utilised this interdependency in order to share the benefits.

Upstream countries also have better sites for dams with their high valley walls, while downstream countries have better agricultural land which requires access to water for irrigation. Dams can benefit both upstream and downstream countries by providing electricity to upstream states and even increasing the flow of rivers for those downstream during irrigation seasons. For instance, in the 1957 Mekong agreement, Thailand helped fund hydroelectric projects in Laos in exchange for a proportion of generated power. South Africa helped to fund a diversion facility for Lesotho in accordance with the 1986 Lesotho Highland Treaty. South Africa secured the right to drinking water for Johannesburg and Lesotho received all the power produced (Wolf 1998).

Canada and the USA were able to develop the potential of the Columbia River basin. The USA agreed to make lump sum payments if Canada built three dams with water storage facilities which incorporated technology to control flooding in the USA (Mandel 1992). Another case is the agreement between the USA and Mexico. Low-lying Mexico accused the USA of diverting and polluting water. After several years of negotiation, in order to improve bilateral relations with Mexico, the USA pledged to provide low-salinity water

through the construction of a desalinisation plant, and Mexico accepted the proposed standard water quality in return (Mandel 1992).

Thus, upstream/downstream relationships that riparian states share can pose credibility problems. Upstream states may withhold data on water which can lead to information failure, and downstream states may have little trust that upstream states can or will make credible commitments. Yet, upstream/downstream positions of states can be utilised for the benefit of all parties, if these credibility problems are addressed and cooperation prevails.

## **Conclusion**

The aim of this chapter was to present the analytical framework that I term “transcendancy”. This n-analytical framework explains that the transcendent foci of rivers create securitisation/utilisation issues, legal ambiguity and credibility problems. On the other hand, transcendancy creates interdependency which may provide the basis for cooperation.

River and water disputes can easily be securitised as zero-sum issues due to their superordinate value. Yet, water also has utilitarian value which can provide more grounds for cooperation. These two qualities of water transcend each other but the focus on water dispute as a zero-sum security issue can give rise to conflict. As mentioned earlier, due to their nature and their utilitarian aspect, rivers present multiple opportunities for cooperation. Yet, political leaders tend to focus on the superordinate aspects of water for various reasons and present river disputes as a security issue for their respective countries, despite the existence of mutually beneficial solutions. The shift from considering water as a zero-sum security issue to focusing on water’s utilitarian aspects is the first problem that needs to be addressed. For example, rather than merely focusing on water’s physical availability in cubic meters and



considering any disruption to river water as a potential threat to state survival, the ultimate product or good that water is used to produce can be the basis of negotiations. The second feature is that transboundary rivers ignore political boundaries which can create legal ambiguity regarding ownership rights to river water. Each riparian state may wish to adopt completely opposite doctrines presenting only their interest, depending on their geographic location (upstream or downstream). Since there is no internationally accepted international law, this legal ambiguity can give rise to disputes. This is the second problem that arises due to the transcendency of international rivers. The third feature is that because rivers cross territorial boundaries, riparian states may share upstream/downstream relationships, creating credibility problems. Bargaining failure may occur because downstream states may not trust upstream states because of upstream states' advantageous geographic positions. Upstream states may potentially block the river flow for certain periods of time, reduce the flow of a river, and withhold data and information about water upstream. Therefore, this may lead to credibility problems, making cooperation regarding rivers difficult.

Thus, Chapter I has developed and outlined the transcendency framework, which is used in Chapter II to explain how third parties address these problems of transcendency in order to facilitate riparian cooperation.

# **Chapter II Transcendancy and the Role of Third Parties in Conflict Management of River Disputes**

## **Introduction**

This study attempts to explain the role of third parties in the conflict management of river disputes through the transcendancy framework. The role that third parties play in managing international river conflict is best understood when the causes that lead to river disputes are explored. In this regard, the previous chapter discussed the causes that bring about river disputes within the transcendancy framework. Chapter II, therefore, aims to explain how third parties address these issues that emanate from transcendancy and how they facilitate cooperation over the water resources of rivers. The aim of this chapter is also to develop hypotheses of how third parties address these issues to facilitate riparian cooperation and extend the transcendancy framework further. Since the role of third parties is explored through the transcendancy framework, one may find that some points made in Chapter I are repeated in Chapter II. However, this needs to be done in order to situate third parties' role in the context of transcendancy.

This Chapter is divided into three sections. The first section starts with a general overview of existing literature from the securitisation/utilisation perspective in order to explain what factors promote the emergence of river agreements and the peaceful management of river disputes. It continues with a discussion of how third parties address transcendancy issues such as securitisation and utilisation of scarce water resources. It then proceeds to propose how third parties address legal ambiguity and also elaborates on the

role of third parties in managing bargaining failure issues such as information asymmetry and commitment problems.

## **From water securitisation to utilisation**

Issues related to population growth put pressure on the development ambitions of many states, as such international rivers are increasingly being utilised for various purposes. There are around 261 international transboundary river basins identified in the world covering 45.3% of land surface (Wolf et al. 1999) and the increased utilisation of these rivers has triggered international disputes around these transboundary rivers (Yoffe et al. 2004). According to Yoffe and Larson (2002), 84% of river issues are over water quantity and infrastructure development (these issues are often interrelated) implying that river disputes are closely related to the developmental needs of states.

Despite the potential of transboundary rivers to lead to disputes, riparian states are also able to negotiate and cooperate over transboundary rivers. About 400 river treaties were signed over the last century, according to Wolf (2007). The presence of river agreements increases the likelihood of peaceful efforts to settle and manage emerging river disputes (Brochmann and Hensel 2009). Hence it is essential to explore the factors that encourage riparian states to resolve contentious issues over international rivers peacefully and how riparian conflicts are managed when they arise.

Sometimes cooperation and the emergence of river agreements are explained from the realist perspective. Lowi (1993) for instance, argues that cooperation is a mere reflection of a power balance when a dominant state in the basin coerces weaker states to sign an agreement. Through reconstructing the history of the Jordan water conflict from the 1950s to 1992 and comparing this case with those

of three other river basins, Lowi (1993) concludes that cooperation is not achieved unless it is in the interests of the dominant power in the basin. Moreover, the dominant state will take the lead in coercing other riparian states towards cooperation. However, if a dominant power is an upstream state and if it does not envision any gain from water cooperation, agreement attainment will be extremely difficult (Lowi 1993). Likewise, Song and Whittington (2004) also find that countries with a high economic and political power imbalance, and countries that share “western civilisation”, are more likely to conclude an agreement.

Yet in the existing literature there is no consensus on the factors that enable states to manage their riparian disputes peacefully and reach an agreement. Scholars mention various factors that are believed to increase the chances of cooperation over international rivers. In addition, factors which decrease interdependency or a lack of trade might explain the lack of river agreements. For example, Espey and Towfigue (2004) in their large-n study revealed that economic, political and language differences do not have any effect on treaty formation, while religious differences and lack of trade relations are found to hinder treaty formation. Wolf (1997) also argues that despite many differences, such as institutions, law and enforcement, and the power balance between riparian states, these differences are not so prohibitive as to preclude cooperation. Likewise, Dinar et al. (2011) suggest that power asymmetry is not a significant factor for the formation of bilateral agreements. Thus, there is no consensus as to whether power imbalance issues from a realist perspective can provide much explanation for riparian cooperation.

However, these findings do not necessarily imply that stronger states force weaker states into signing river agreements. The utilitarian aspect of river water is well placed to encourage a stronger riparian state to seek cooperation

over rivers. A closer review and an analysis of existing explanations suggest that even though power imbalance is found to be an important factor for reaching agreements, it is not clear if cooperation in such circumstances is achieved through coercion or through economic incentives. Elhance (1999), for example, argues that even though states are inclined to exploit international rivers unilaterally, a stronger riparian state seeks some sort of formal cooperation with neighbouring weaker states to regulate the use of transboundary rivers. In this regard, Dinar et al. (2011) argues that river cooperation can also be achieved through incentives such as side payments by more developed states.

Historical and political conditions which reduce uncertainty can be conducive to de-securitisation and can contribute to the emergence of river agreements. Such conditions as perceived cultural and religious affiliation between riparian states are found to be important for concluding river agreements (Lautze et al. 2005). In another example, Hayek (1978) also argues that the evolution of a common language and law may create “spontaneous order”, reducing the uncertainty of social interactions. Thus states with a shared political and cultural heritage may have spontaneous order which can reduce conflict and even the need for formalised river treaties (Hayek 1978). Likewise, Brochmann and Hensel (2011) show that conditions that encourage negotiation onset have different effects on negotiation outcomes in regions such as the Americas, Western Europe and Middle East. Their findings suggest that a close relationship, the importance of the river to negotiating states, and a short term resolution of the problem increase the likelihood of successful negotiation outcomes, whereas water scarcity and the presence of an upstream hegemon decrease the chances of a successful outcome of negotiations (Brochmann and Hensel 2011).

A study by Tir and Ackerman (2009), which was one of the first large-n studies to incorporate a wider theoretical context, concludes that preponderant power distribution, democratic governance, water scarcity and economic interdependence are the factors that promote the emergence of river treaties. They find that contrary to conventional thinking, economically advanced countries do not necessarily sign more treaties (Tir and Ackerman 2009). This is explained by the fact that the majority of developed countries utilise advanced technologies to efficiently use and distribute available water resources and they do not necessarily experience water shortage (Tir and Ackerman 2009). However, there is more environmental concern related to cleanliness of water among economically developed states (Tir and Ackerman 2009). These findings also reveal that power preponderance, democratic governance, economic interdependence and water scarcity are other factors which are permissive for water treaties.

However, apart from the above mentioned factors, we have also observed the increasing involvement of international development banks and international organisations in managing river-related disputes, often under the guise of development assistance (Salman 2003, 2009; Kirmani and Le Moigne 1997). Yet, the existing literature that examines the role of third parties in river disputes is scant and findings are inconclusive. What little literature that exists is limited to the study of mediation efforts in selected case studies (see Zawahri 2009; Nakayama 1997; Biswas 1992, 1999; Nishat and Faisal 2000; Weinthal 2002). Some scholars mention the role of third parties in managing riparian conflicts only briefly (see Wolf 1997; Dombrowsky 2007; Nielsson 1990; Lowi 1993; Turton 1999; Elhance 2000; Dinar 2008). There are several quantitative works but these do not specifically look at the role of third parties. Some scholars (see Hensel et al. 2006; Stinnett and Tir 2009; Tir and Stinnett 2012) study the role of organisations which are specifically created for overseeing river cooperation in

river disputes. These organisations are sometimes the outcome of negotiation efforts by third parties. Some argue that third parties do not have enforcement mechanisms and states are reluctant to relinquish their sovereignty to larger international organisations which, in turn, diminishes the role of these third parties (Lowi 1993; Turton 1999; Dombrowsky 2007). A study by Mitchell and Hensel (2007) suggests that the active involvement of international institutions as third parties in the settling of contentious issues increases the likelihood of compliance with these agreements. Yet, closer examination of the data reveals that the international institutions in their study also include joint river institutions set up by riparian states themselves and their findings include all issues such as territorial, maritime and river claims in the Western Hemisphere, Western Europe and the Middle East (Mitchell and Hensel 2007).

When river disputes are highly charged and securitised, third parties can help de-securitise the issue and propose mutually beneficial solutions using the utilitarian aspect of river water. Third parties may engage with the aim and agenda to assist with the sustainable development of the entire basin or the protection of the river's ecosystem which eventually requires basin-wide cooperation. For example, several authors (see Amery and Wolf 2000; Wolf 1995; Giordano et al. 2002) argue that water relations within and between countries are linked to water and non-water related international events. In particular, those factors that help to exploit the utilitarian value of water, such as development and economic needs, appear to contribute to the emergence of agreements. For example, a study undertaken by Lautze, Giordano and Borghese (2005) analyses internal and external forces to identify what makes African states reach transboundary agreements. Their findings suggest that some of the most important internal factors for the emergence of river agreements are development factors such as the need for water infrastructure

development and the building of dams (Lautze et al. 2005). However, in recent years environmental sustainability has also been highlighted as a development goal which encourages riparian cooperation and such policy initiatives are often promoted by third parties such as the World Bank (Lautze et al. 2005).

Third parties are often involved in river disputes and function as mediators between states by applying various political and economic leverages to bring states towards cooperation. Needless to say, the rise and involvement of non-state third party actors in river disputes has expanded the third party strategies that can be used to facilitate riparian cooperation. Boyce (2002) argues that other actors such as multilateral agencies, international financing institutions, large international NGOs, and the World Bank are gradually moving to address the issues of post-conflict reconstruction and peace building (Boyce 2002). The World Bank, for example, has established the Conflict Prevention and Reconstruction Unit, operates trust funds, has set up demobilisation and reintegration programs, conducts conflict sensitivity assessments, and has launched the Low-Income Countries Under Stress Initiative (LICUS) (Boyce 2002). The IMF and the regional banks are also increasingly involved in post-conflict lending (Boyce 2002). The World Bank is increasingly taking up the role of mediator in river disputes by assisting with the establishment of river basin organisations, and providing financial support and technical expertise (Kirmani and Le Moigne 1997).

Abbot and Snidal (1998) argue that the international organisations (IOs) can act as active agents of cooperation. Even though most of their activities can be modest, even such modest activities in low-level disputes can be very effective. For example, Development Banks are operational IOs with sizeable budgets and bureaucracies, complex organisational structures and operational autonomy which provide efficiency gains that far outweigh the costs that may occur in bilateral attempts (Abbott and Snidal 1998). States are therefore



inclined to use operational institutions as active agents to conduct collective activities, especially when there is a power imbalance between the participating states (Abbott and Snidal 1998).

Wolf (1997), for example, argues that third party involvement is crucial in bringing about conflict resolution of river disputes. Wolf (1999a), argues that states which set up international institutions to govern water before the outbreak of violence are better positioned to handle water conflicts. In his analysis of 140 water treaty resolutions, 14 process case studies and three forums of IWRA's Committee on International Waters, Wolf (1997) concludes that the role of a third party is crucial in facilitating the process of establishing joint water management institutions. He found that the success of third parties was due to financial and political backup as well as the presence of states' commitment to cooperate (Wolf 1997). He argues that during the negotiation stage there are many obstacles, including water quality and quantity, political divisions and shared management, geopolitical setting, the level of development, and the national water "ethos" (Wolf 1997).

Several case studies (see Zawahri 2009; Nakayama 1997; Biswas 1992, 1999; Nishat and Faisal 2000; Weinthal 2002) found that third party involvement assisted in resolving disputes and facilitated cooperation over transboundary rivers. Many of these studies emphasise the importance of financial and political backup in order for third party involvement to be successful. Third parties appear through the delivery of financial aid and development assistance. They can help to reduce political tensions and where possible, to divert the dispute from a zero-sum security issue to a positive-sum utility of transboundary rivers by emphasising the economic benefits of cooperation. For example, Nakayama (1997) examined four cases (Indus River basin, Mekong River basin, Zambezi River basin and Ganges River basin) where third party actors were involved in international water disputes. Nakayama (1997)

concludes that the neutrality of the third party, along with financial assistance as a “stick and carrot”, the willingness of riparian countries to cooperate, and the involvement of people at the highest level, are essential for third party involvement to be successful. In addition, Biswas argues that the World Bank’s involvement in resolving conflict between India and Pakistan was successful due to the personal attributes and leadership of the Head of the World Bank, Eugene Black (Biswas 1999). The dispute over the Indus River had escalated to a dangerous level and only the personal involvement of the Head of the World Bank helped to reduce tension. In this particular dispute, the World Bank, after several rounds of negotiations, helped to separate eastern and western rivers between the two states (Biswas 1999). Even though such a solution implies minimum integrated water management, funding from the World Bank helped to de-securitise the water issue by proposing a technical solution to the problem. The World Bank’s assistance in the Indus basin dispute is believed to have prevented the probability of war over water.

One instance where third parties played a significant role in the setting up of a joint-management organisation was the case of the Senegal River Authority or OMVS (Organisation pour La Mise en valeur de Fleuve Senegal) in the Senegal River basin (Kliot et al. 2001). This organisation evolved from French colonial rule. Since 1963, the Senegal river basin has been jointly managed by OMVS, the members of which are the riparian states of Guinea, Mali, Mauritania, and Senegal (Godana 1985). The OMVS performs such functions as navigation, promotion of irrigation, hydropower production and the authority to construct and operate joint projects. This organisation also helped Senegal and Mauritania to settle a dispute in 1988 when farmers and herders on both sides fought over the same water resources and land (Green Cross 2000, p.84). The role of third parties in setting up and initiating the OMVS was significant in terms of turning a highly-charged securitised issue towards mutually beneficial

cooperation. There were 14 donors and IOs, such as the African Development Fund, USAID, EEC, UNDP, the World Bank and others, who provided the funding and technical aid to support the OMVS (Kliot et al. 2001). Le Marquand (1986) and Ibrahim (1988) mention that the support from third parties contributed to the success of this organisation.

Third party involvement in the Mekong River basin provides a clear example where emphasis was placed on the utilitarian value of water, highlighting the interdependency of states for the sake of economic development. Third parties were able to bring riparian states in the Mekong basin towards cooperation with promises of financial aid (Thi Dieu 1999). Third parties, which included the US and countries of the Western bloc, emphasised the economic potential and benefits of cooperation over the Mekong River. They did this by funding and initiating an exploration mission in order to identify the state of water resources and water infrastructure in riparian states. As a result, the proposal for development was presented at the thirteen's ECAFE meeting in March 1957 where it suggested the development plan for the united Mekong region rather than a separate plan for each riparian country (ECAFE 1957). The report revealed a huge need for irrigation and hydroelectric plants, particularly in the lower basin. The report emphasised the interdependence of riparian states and the utmost importance of a regional approach and cooperation between the four riparian states for the project to be successful (Thi Dieu 1999). The proposal was accepted unanimously by all four riparian states (ECAFE 1957). Third parties were thus able to induce river cooperation by providing financial assistance or aid as leverage for their cooperation.

## **From legal ambiguity to clarity**

As mentioned earlier, many riparian disputes arise because the transcendent nature of rivers obscures ownership rights and creates a dilemma from an

international law perspective. Third parties also attempt to address this issue of legal ambiguity with regard to transboundary rivers. For example, many disputes over river water occur due to large projects on the rivers, such as dam building, irrigation projects, hydroelectric power stations, etc. Yet, as mentioned above, there is no coherent policy guiding interventions by the international community in the development of international rivers and the management of riparian conflicts (Phillips et al. 2006). Due to the absence of international law for transboundary rivers, the World Bank has also had to develop its own policy in response to riparian conflicts (Salman 2009). This could be explained by the fact that international development banks such as the World Bank have been the single largest funders of dams around the world (Miller and Hirsch 2003) having loaned funds for dam development for the past 30 years (Moller 2005, p.2). If a dispute arises during the project approval process, the World Bank encourages riparian states to negotiate and offers their good offices in the first instance (Salman 2009). As a result, the World Bank can act as an arbiter in the dispute and as a communication channel to fill any diplomatic vacuum (Salman 2009, p.230) .

Third parties, therefore, can contribute to creating international standards and norms regarding the usage of transboundary rivers. International development banks can be considered part of the epistemic community. Haas (1990) argues that epistemic communities are able to influence state policy formation, and often (via their authority and expertise) can facilitate cooperation among states, particularly in dealing with environmental problems. Because epistemic communities have expertise and knowledge, their advice is often sought by national governments. In this way, international standards can be created with which the epistemic community can encourage states to comply (Haas 1990). Haas argues that control over knowledge and information is one dimension of power, and dissemination of this knowledge can cause another type of

behaviour and determine international policy coordination (Haas 1992b, p.3). Therefore, the role of the international development banks and other international organisations in dealing with transboundary water conflicts can help define international norms, standards and behaviour.

For example, one of the principles of the World Bank's water policy is the requirement for the assessment of potential significant harm before approving projects on international waterways (Solanes 1992; McCaffrey 1996). Another objective of World Bank policy on international waters is to facilitate cooperation between riparian states (Salman 2009). Normally, if there is an objection from another riparian state, the World Bank encourages riparian states to negotiate and consult and the Bank offers their good offices in the first instance. However, objections from other riparian states do not carry the power of veto and the Bank can finance the project if it deems the project does not cause any significant harm to another riparian state (Salman 2009).

Thus, the World Bank, through its water policy, can act as an informal arbiter in the dispute and determine whether the project will cause any adverse effects to other riparian states. For instance, Iran objected to the Igdir-Aksu project in Turkey, arguing that the project would have a detrimental effect on Iran. But the World Bank determined that the project would not have a detrimental effect and approved it. Nevertheless, Iran was able to get an assurance that the World Bank would provide its good offices in order that the riparian states could reach an agreement (Salman 2009). In this case the World Bank acted as a communication channel as well as helping to shape accepted international norms and behaviour (Salman 2009, p.230).

In another case described earlier, the Slovakia and Hungary dispute over the dam project resulted in an appeal by both parties to the International Court of Justice in The Hague. The Court decided in September 1997 that both riparian

states had broken their contractual undertakings. Both parties were advised to find a shared solution and in the case that they could not, the dam would be placed under a common regime.

Upstream Paraguay and Brazil claimed their national right to erect the dam on the Parana River while downstream Argentina and Uruguay opposed such a move. Argentina obtained a resolution from the United Nations obliging the upstream states to provide sufficient information and undertake proper consultation with other riparian states. As a result, in the early 1990s, these states were able to reach an agreement within the forum of Mercosur (Haftendorn 2000).

Another legal framework which is promoted by international organisations such as the UN is the UNECE Water Convention. The principles of this convention are based on equitable and reasonable utilisation and the no-harm rule, but with certain obligations for riparian states such as “due diligence”, notification to other riparian states of any works undertaken on the transboundary rivers, and access to information. At the same time, it allows and gives the right to riparian states to make final decisions regarding hydrological works on the river. This convention is not accepted by all states, but the UNECE promotes and encourages states to sign the Convention and promotes conferences and workshops to explain the principles of the Convention (UN 2011).

The UNECE Water convention is similar in some aspects to the 1997 United Nations Convention on the Law of Non-navigational Uses of International Watercourses (1997 United Nations Convention). While both conventions address the same subject and their provisions are mutually compatible, the Water Convention is more specifically focused on the prevention, control and

reduction of transboundary impacts and institutional provisions for cooperation. The Water Convention also encourages the conclusion of agreements regarding specific rivers (UN 2011).

The UNECE provides a framework to address climate change concerns, aiming at providing flexible “soft-law instruments”, such as the “Guidance on Water and Adaptation to Climate Change” (UN 2011, p.3). Under the Water Convention umbrella several projects are undertaken to assist states to prepare for the possible consequences of climate change through increasing their capacity. For example, the UNECE proposes the use of their legal framework as a common rule for Central Asian states and the UN is prepared to provide training and other capacity building activities if states adopt this common legal framework.

Thus for international cooperation over transboundary rivers to occur, international arrangements should be designed to reconcile and harmonise the interests of riparian states (Savenije and Van der Zaag 2000). Third parties often assist riparian parties with drafting agreements that incorporate the principles of these norms. Kliot et al. (2001) concluded that all river basins uphold the customary law of limited sovereignty after analysing 12 transboundary river basins. Most of the cooperative arrangements within these basins reflected explicitly accepted international norms, particularly “equitable utilisation of water resources, prevention of harm, consultation and early notification, and consultation and comprehensive planning and development” (Kliot et al. 2001, p.251). Kliot et al. (2001) also found that in all these institutions, third parties played significant roles in their success, because third parties provided necessary support and the means for implementation.

Thus, third parties, either through their own water policies or by promoting doctrine, may help shape certain international norms and the behaviour of

riparian states. This helps to clarify the positions of riparian states from a legal perspective and solidify certain international expectations. They do this by either disseminating these particular policies and knowledge via training, workshops and conferences, or through assistance with the drafting of river agreements where they can incorporate these principles.

Haftendorn (2000) argues that third party participation in the development of norms and principles on the use of transborder water systems is important.

Haftendorn (2000) maintains that the United Nations and its special organisations are important players in the future development of water rights. Therefore, third party involvement helps disputing parties to forgo some of their wishful claims and abandon their extreme approaches and unilateral usage of rivers in order to share the benefits.

## **From credibility problems to credible commitments and transparency**

There is a growing body of literature explaining the role of mediation in the context of bargaining failure which can also give more insight into the role of third parties in river disputes. A brief overview of the models of third party activities by Lewicki et al. (1992, p.231) shows that “third parties can act formally or informally, operate individually or on behalf of some organisation or constituency, can come invited or uninvited, be more or less neutral, be advisory or directive in their actions, and favour the substance (outcome) or procedure (process) in their involvement”. Lewicki, Weiss and Lewin (1992) suggest three possible forms of third party control: “process control (how disputants interact during dispute resolution), content control ( the substantive resolution of the dispute itself), and motivational control (the source of power a



third party uses to influence the disputants, e.g. persuasion, legitimate authority, threats and promises)” (Lewicki et al. 1992, p.231).

Mediation is one of the widely used strategies to provide communication between disputing parties. Third parties or mediators are therefore seen to be able to ameliorate these bargaining problems in recent mediation literature (Kydd 2003; Rauchhaus 2006; Svensson 2006). Many international conflicts can be hard to resolve and may take considerable time and effort, and parties may fail to coordinate their activities which can lead to conflict. In such cases where negotiations result in stalemate, third parties can make a substantive contribution to the negotiation process through coordination, mediation, and proposing an alternative solution (Walter 1997; Touval and Zartman 1985; Zartman and Touval 1996). Third parties can also design procedures for negotiation so that a number of possible solutions can be considered during the negotiation process (Powell 2002). Mediators can play a role in preventing bargaining failures by monitoring members’ behaviour, lowering transaction costs, enabling the transmission of information and facilitating coordination, and sanctioning defectors which reduces the fear of being cheated (Beardsley et al. 2006; Rauchhaus 2006; Keohane and Martin 1995). For example, the World Bank acted as a mediator by playing a more active role between India and Pakistan over their dispute over the Indus river and proposed the potential solution, which was accepted by both parties (Zawahri 2009).

When the parties have more transparent information about each other’s intentions and capabilities, those parties are in a better position to identify mutually acceptable solutions able to be obtained by peaceful means (Fearon 1995; Powell 1999; Fearon 2004). The availability of relevant information ensures that each party is aware of where the other party stands in regard to the dispute and that they do not miscalculate their own capability as well as

their opponent's capability and reservation points<sup>19</sup>. For example, with regard to transboundary rivers, third parties may assist with funding or providing technical expertise to obtain and exchange scientific data and information. Third parties can help to increase capacity and build infrastructure allowing open access and exchange of information. For example, Dukhovny and Sokolov (2003) state that third party actors assisted with the projects related to the information system in Central Asia. Okaru-Bisant (1998) mentions that the World Bank's assistance with the Lake Malawi/Nyasa Biodiversity Conservation project enhanced the capacity of scientific research in Malawi, Mozambique and Tanzania which laid the basis for basin-wide cooperation.

One way to enhance cooperation is to establish dialogue and information sharing through training between water experts and technical staff. For example, Savenije and Van der Zaag (2000) argue that technical experts are more informed and knowledgeable about water issues and are more aware as to what the other parties are doing and why, compared to the political elite who can base their decisions on inaccurate assumptions. For example, technical experts are believed to have diffused the tensions over rivers between Switzerland and the Netherlands during the Sandoz disaster in the Rhine in 1986 and between Tanzania and Malawi during high water levels of Lake Malawi in the 1980s (Savenije and Van der Zaag 2000). Accurate information and precise data on hydrological, biological, and chemical properties which are freely exchanged, together with joint databases may help avoid inaccurate assumptions about the activities of other parties and thereby avoid poor political decisions.

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<sup>19</sup> Reservation point is a point or price beyond which a negotiator disengages and is no longer interested in a negotiated agreement. It is often referred to as the "walk away point" (Steedman 1987).

Third parties in river disputes appear to facilitate communication between the riparian states involved through seminars and symposiums. Seminars are a good way to bring disputing parties together to discuss the problem. This leads to improved communication between hostile parties, and gives an opportunity for parties to discuss the issue with international experts, reduce the points of difference, and lower tensions. It is also possible to come up with a potential resolution of conflict. Even though one meeting may have little impact, an accumulation of such formal and informal meetings in the so-called concept of "dialogue accumulation" significantly improves the communication between conflicting parties. (Amer et al. 2005, p.11).

Communication through information exchange about each party's intentions can increase knowledge, build trust and help to build cooperation (Keohane and Martin 1995; Haas 1992a). Third parties involved with riparian disputes can appoint an expert or commission to study the issue, gather and share information, and bring together adversarial parties for dialogue. Uitto and Duda (2002), for instance, in their analysis of institutional approaches in respect of riparian states in Africa, Central Asia, and Latin America, conclude that joint fact-finding at the stage of diagnosis can be conducive to cooperation. Elhance (1997) mentions that the World Bank, European Union, the United Nations Development Program and the US Agency for International Development undertook various conferences and working groups involving representatives of different countries which helped to facilitate regional cooperation in Central Asia.

In relation to river disputes, financial assistance is frequently used as leverage to encourage a riparian state's cooperation. Several studies show that third parties often use financial leverage to facilitate and encourage states to cooperate over transboundary rivers and the success of third parties can be

contingent on the financial support they can provide (Nakayama 1997; Wolf 1997). Sometimes, as Zawahri and Mitchell (2011) mention, high transaction costs can impede states from reaching river agreements.

Some authors (Bernauer and Ruloff 1999; Cortright 1997b; Drezner 1999; Long 1996) consider incentives separately as an effective tool which can achieve political concessions in light of security issues. They argue that economic incentives are powerful tools to achieve desired outcomes in terms of meeting security challenges that states have met post-Cold War (Bernauer and Ruloff 1999; Cortright 1997b; Drezner 1999; Long 1996). In this regard, it is not unusual that third parties can provide incentives to facilitate international cooperation. Dorussen (2001) considers such incentives as a linkage strategy and claims that incentives can facilitate desired action and help overcome internal resistance to policy changes. Dorussen (2001) also argues that incentives play a role in international politics and give an important angle to understand the relationships between states from a theoretical and empirical aspect.

It has long been recognised that aid provided to states comes with strings attached. For example, even though the Articles of Agreement of the World Bank specify that loans should be made “with due attention to consideration of economy and efficiency and without regard to political or other non-economic influences or considerations”<sup>20</sup> (Boyce 2002, p.1032), Boyce mentions that it is almost impossible to separate economic factors from political ones. The political aspect is especially likely to overlap in unstable countries and if the World Bank were to follow to the letter the Articles of Agreement, it would imply that the World Bank can not be involved in many places (Boyce 2002). However, sometimes positive inducements can be provided with a long-term

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<sup>20</sup> International Bank for Reconstruction and Development, Articles of Agreement, Article III, Section 5(b).

view in mind and with no immediate request or condition stated, the purpose of which is to build long- term friendly relationships (George and Smoke 1974).

In transboundary river disputes, side payments and issue linkages are often used by third parties in negotiations to offset power asymmetries (Dinar 2008; LeMarquand 1977; Dinar 2011), and can be used to restructure incentives and alter a state's behaviour (Barrett 2003, p.338-340). These incentives and inducement strategies may reduce compliance and cheating problems (Axelrod 1984; Axelrod and Keohane 1985; Oye 1986). Therefore, third parties can increase absolute gains of cooperation via financial aid, making the opportunity costs of non-cooperation and renegeing on agreements too costly. Third party actors can influence the negotiation process via their position and leverage (Touval and Zartman 1985) and can act as guarantors to resolve commitment problems (Greig and Regan 2008).

Third parties may also absorb the costs of negotiation if parties agree to come to the negotiating table in the first place. Likewise, if disputants refuse to cooperate, third parties may employ sanctions or "pressing" actions (Carnevale 1986). Actions like diplomatic boycotts through to military interventions, withdrawal of financial aid and economic support can all be considered as "sticks" that third parties can use to put pressure on parties in dispute. Third parties may stipulate that if any party does not comply with an agreement then any promised economic and political "carrots" could be withdrawn, which may discourage adversaries to renege on agreements. Third parties, through the use of manipulative strategies, can act as a guarantor to resolve commitment problems (Greig and Regan 2008).

One of the ways to deal with the commitment problems and information asymmetries that emerge in transboundary river disputes is through the presence of joint river institutions. The presence of river-related institutions can increase the likelihood of compliance with agreements and decrease the likelihood of militarised conflict (Hensel et al. 2006; Mitchell and Hensel 2007). Third parties often assist in establishing river institutions by providing financial aid and technical expertise (Wolf 1997). Although Zawahri (2009) questions if third party mediators are able to bring about stable cooperation, he concludes that the involvement of a third party in the design and implementation of joint management institutions in the early years can help to build strong river institutions. For example, the river treaty that was reached with the assistance of the World Bank in the Indus basin proved to be resilient even at times of war (Zawahri 2009), while the agreement and institution which was set up without a third party's assistance in the Tigris and Euphrates basin was too weak to be able to ameliorate the conflict (Zawahri 2009).

## **Transcendency and the occurrence of third party involvement**

Another area of research inquiry, apart from understanding whether and how third party actors facilitate river cooperation, is to understand when and where third party involvement occurs. There are almost no studies that identify the factors that explain the occurrence of third party intervention in river disputes. Hence, there is not much literature on which to build. This section mostly incorporates the literature on international mediation and influence strategies to identify the factors that explain where mediators or third parties intervene. In order to understand the occurrence of third party involvement from the perspective of the transcendency framework, the explanation of third party intervention in this section will be from the perspective of riparian states. Even

though it is acknowledged that there is a supply side or mediators' perspective in understanding third party intervention, this perspective is not discussed in this particular section<sup>21</sup>. The aim of this section is to explore the features of transboundary rivers and riparian states (or primary parties) which can explain and determine third party intervention in river disputes.

It is worthwhile to come back to the transcendency framework to explore how the transcendency feature, which is pertinent to transboundary rivers, explains the occurrence of third party involvement. First, the transcendency feature of rivers, such as upstream/downstream relationships, can counterbalance the power imbalance. Therefore, there are two factors that need to be considered. One is the conventional political power distribution between rival states which is believed to determine the occurrence of mediation. Existing water-related literature relates to hegemonic stability theory that explains how asymmetric power distribution affects conflict and cooperation within basins and the emergence of agreements (Zeitoun and Warner 2006; Warner et al. 2008; Daoudy 2009; Lowi 1993; Frey 1993). While some authors claim that power parity encourages the onset of successful mediation between disputing parties (Bercovitch and Langley 1989; Kriesberg 1992), another body of literature claims that power parity may reduce the occurrence of mediation due to competition between disputants (Organski 1968; Wright 1965). Mitchell (1995) for example suggests that it is when conflicting parties cannot resolve their dispute through conflict that they resort to seek third party assistance in order to resolve the issue via negotiation. For example, Greig (2005, p. 262) finds that rivalries where at least one major power is present are 72% less likely to experience the onset of mediation compared to rivalries that do not involve a major power. Another study claims that power asymmetry between riparian

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<sup>21</sup> Nevertheless, variables such as previous mediation experience, colonial history and hostility to major Western powers that take into account a third party's perspectives have been included in the analysis and discussed in the methodology section in Chapter III.

states that share an upstream/downstream relationship favours bilateral arrangements (Daoudy 2009). This finding counter-intuitively implies that if power preponderance between states allows for the reaching of an agreement by force, there would be no need for third party assistance, and any power imbalance would prevent third party intervention.

The second factor, in addition to conventional power distribution, is the geographic position of the river feature and the riparian states which create a position of dominance. In river-related disputes, the geographic position of riparian states can be one of the factors of the power dimension and may increase the costs of negotiation, thus affecting whether third party intervention occurs. First, as discussed in previous sections, when states share upstream/downstream relationships, this creates commitment and information asymmetry problems. Second, the upstream state is in a more advantageous position in relation to the downstream state because of an upstream state's ability to control the flow of river water.

There are two scenarios possible. First, a politically and economically weaker riparian state can be in the upstream position, thus giving this state an opportunity to counterbalance the political power of the downstream state. Because of the upstream state's beneficial geographic position, downstream states may fear that their upstream neighbour can turn off the tap at anytime. Second, an upstream state may be more powerful politically than the downstream state. In such cases, it is to be expected that the upstream hegemon is in a position to impose the resolution of conflict according to their preference and has no incentive to engage third party mediators. Further, if third parties need to be involved, their intervention could be too costly when the upstream state is a hegemon.



In addition to upstream/downstream and power relationships, there is another factor that may determine the likelihood of third parties becoming involved in the dispute. Some riparian states share more than two rivers. In such cases it is highly likely that none of the states can be solely an upstream or downstream state because the patterns of rivers may vary. This transcendent geographic feature allows avoiding or at least minimising the commitment problem because each side has leverage with which to keep the other side in check. The greater the number of rivers they share, the more likely that riparian states may reach an agreement bilaterally due to the possibility of compromise. There may be no need for third party involvement to resolve the issue. For example, when states share several rivers, state A can seek more concessions from state B over one river in return for state A giving more concessions to state B with regard to another. On the other hand, Gleditsch et al. (2006) mentions that the larger a river basin, the more benefits it can bring. For example, there are more opportunities for irrigation, abundant fisheries, hydroelectric power and transportation, but these benefits may also be the cause of greater rivalry (Gleditsch et al. 2006), which may complicate the resolution of dispute and be too costly for third parties to intervene.

Disputes over river waters can range from mild verbal discord to military conflict. The intensity and the nature of conflict may determine the occurrence of mediation in a conflict. In the mediation literature some suggest that mediators get involved in relatively “easy” conflicts (Beardsley 2005; Greig 2005), while some argue that mediators enter to manage the conflicts that are difficult to resolve (Svensson 2006; Bercovitch 1997). For example, Bercovitch and Jackson’s (2001) study suggests that international disputes which are characterised by high complexity, high intensity, long duration, and unequal and fractionated parties, may attract more mediation efforts.

Due to interdependency and legal ambiguity, any activity on the river by one riparian state may lead to objections by others. Therefore, riparian states may need to negotiate before such activity can proceed. Yet, the transaction costs of negotiation could be costly for low income states, and in this regard they need external assistance to increase their gains from cooperation.

Thus, it is not only in the interests of third parties but also in the interests of the states themselves to engage with third parties. In this regard, Moller argues that riparian states with less capability and fewer resources are more likely to need third party assistance in resolving their disputes (Moller 2005). In addition, Cortright (1997a) postulates that the success of incentives depends on the nature and the needs of recipients. If the recipient is in need of financial support or international recognition, incentives are most likely to have an effect (Cortright 1997b). Bercovitch and Schneider (2000) mention that less developed nations are more likely to enter the mediation market. Therefore, third parties are also more likely to get involved with low income states because they believe they are more likely to increase the likelihood of cooperation via incentives such as financial aid, development assistance, and expertise.

Haas and O'Sullivan (2000) also argue that states with highly concentrated decision-making processes and countries in trouble, either economically or strategically, are more likely to be amenable to financial or other incentives. Bernauer and Ruloff (1999) imply that for positive inducement to be successful the offered incentive should be valuable enough for recipient states to offset the behavioural concessions and the price paid by the regime in terms of forgone policy. The second condition is that the party which promises benefits and the party which receives these benefits must be able to deliver on their commitments (Bernauer and Ruloff 1999). In this view, Nincic (2006) posits that "carrots" are the most effective when applied to unstable regimes. He argues that when carrots are applied to stable regimes, many inducements "expanded

trading opportunities, access to foreign investment, even minor political-symbolic concessions (major concessions are not conceivable at this stage) are of limited relevance to supportive elites, and, by extension, to the regime's political calculations" (Nincic 2006, p.327 ).

However, the primary parties' interests are not necessarily able to be described in monetary terms. Cortright (1997a, p.269) mentions that access to emerging political cooperation and economic development among major states is one of the major motivators for peaceful relations in the world today. The prospect of a good relationship with a major power, such as the USA or other western developed states, is a powerful inducement for cooperation. For example, some states in Central and Eastern Europe, as well as states in Africa, Asia and Latin America, desire to achieve economic development, democracy and peaceful security in cooperation with Western states (Cortright 1997a). Thus, access to this system of cooperative development can be used as an incentive in order to achieve a required change of behaviour from aspiring states (Cortright 1997a).

### Conclusions and propositions

Chapter II concludes that third party actors may address the problems that arise out of transcendency of international rivers. Thus, based on previous literature, the author develops the following hypotheses which will be tested:

**The first hypothesis** of this study is that third parties may increase the likelihood of reaching river agreements among riparian states that experience river disputes.

**The second hypothesis** is that third parties may assist in the de-securitisation of river disputes and help riparian states to change focus from the security to the utilitarian side of water usage.

**The third hypothesis** is that third parties may promote certain international norms and behaviour through specific policies or through disseminating knowledge, and as such can address the legal ambiguity that emanates out of the transcendent feature of rivers.

**The fourth hypothesis** is that third parties can also help address the credibility problems that arise due to the transcendent feature of rivers such as the upstream/downstream relationship.

It is to be expected that third parties will help with the facilitation of communication and information exchange through various means such as mediation, workshops, conferences and training, feasibility studies, providing financial incentives, and increasing capacity through the provision of technical and information expertise. Third parties may also address commitment problems by increasing the costs of reneging on agreements and of non-cooperation.

**The fifth hypothesis** is that factors such as being an upstream hegemon, sharing upstream/downstream relationships, and having a higher intensity conflict over river water, mean that the likelihood of third party intervention will decrease due to the increased cost of intervention.

# Chapter III Research Design

## Introduction

In the previous chapter, I elaborated on the theoretical framework where I proposed that third party actors assist states to reach river agreements by addressing problems as well as utilising opportunities that arise out of the transcendent features of transboundary rivers. It was proposed that third party actors address securitisation, legal ambiguity and credibility problems in order to promote riparian cooperation. The purpose of this Chapter is to explain the research design and methodology used to answer the proposed research questions in the study.

The choice of approach depends on the research questions being posed. For my research, I argue that combinations of quantitative and qualitative methods are appropriate. The puzzle is to identify if third party involvement increases the likelihood of reaching river agreements across many cases and how and why they are able to do so. While the first part of the question requires a quantitative approach, the second part needs an in-depth case study method to trace down the processes and activities undertaken by third parties that encourage riparian cooperation.

The first section of Chapter III starts with reviewing the existing literature on methodology to discuss the comparative advantages and disadvantages of the statistical analysis and case study methods. The second section starts with a discussion of the qualitative approach. In this section, the case selection as well as the method of data collection during the fieldwork is explained. Section three addresses the quantitative methodology and explains the process of data collection, operationalisation of third party involvement, and the statistical models used. Section three also includes an explanation of how some

additional variables were created and the methods used to explain the occurrence of third party involvement.

## **Pros and cons of quantitative and qualitative methods**

There is a debate between qualitative and quantitative researchers over which method is best for studying international relations. There are strengths and limits in both quantitative and qualitative methodologies and a trade-off is required when using either one or the other. In order to select the most appropriate research design for the study of the role of third parties in the conflict management of river disputes, the pros and cons of using either quantitative or qualitative methods had to be considered. Before entering into a discussion of the advantages and disadvantages of both methods, it is useful to provide the definitions of both. "Quantitative research uses numbers and statistical methods. It tends to be based on numerical measurements of specific aspects of phenomena; it abstracts from particular instances to seek general description or to test causal hypotheses; it seeks measurements and analyses that are easily replicable by other researchers" (King et al. 1994, p.3-4). In contrast, qualitative research does not rely on numerical measures. "Such work has tended to focus on one or a small number of cases, to use intensive interviews or depth analysis of historical materials, to be discursive in method, and to be concerned with a rounded or comprehensive account of some event or unit" (King et al. 1994, p.4). In this study, I use the term 'qualitative study' to refer to case study methods.

Studies on transboundary river conflicts try to explain the broad range of political, social, economic and environmental interactions between countries and organisations. Therefore, the current study requires a systematic approach to explain the causal processes that bring about cooperation and conflict. In the context of transboundary river disputes, there are few case studies outlining

the role of third parties in resolving river disputes. However, whether the findings of these cases are applicable to a larger number of cases is doubtful. Since most existing literature on third party involvement mostly involves case studies, one of the goals of this research is to identify the effect of third party involvement on the emergence of river agreements across a number of those cases.

In addition, while large samples are considered necessary and useful, large-n study researchers also run a risk of “conceptual stretching”<sup>22</sup> by putting together a number of dissimilar cases in order to create a larger sample (George and Bennet 2005 p.19). For case study methods such an approach is inappropriate and counterproductive (Achen and Snidal 1989). In this regard, the aim of case study researchers is to provide explanations in contingent ways rather than choose cases that are representative (McKeown 1999). Hence, in relation to the study of the role of third parties in river disputes, case study method is more appropriate in answering the questions why and how third party actors promote cooperation.

Thus, there is trade-off involved as to whether to provide rich or more parsimonious explanations. If a researcher aims to provide a rich explanation, this explanation can be less applicable to other types of cases. The theory which is parsimonious and applicable to a larger number of cases may lack richness and specificity in explanation. Case study researchers thus have to sacrifice generalisability and develop specific and contingent theories which are applicable to a well-defined sub-type of cases (George and McKeown 1985; McKeown 1999). One of the important aspects to consider in both quantitative and qualitative research approaches is the problem of selection bias. Selection bias is defined in statistical terms as “commonly understood as occurring when some form of selection process in either the design of the study or real-world

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<sup>22</sup> See (Sartori 1970) for more discussion on conceptual stretching.

phenomena under investigation results in inferences that suffer from systematic error” (Collier and Mahoney 1996, p.59).

Braumoeller and Sartori (2004) argue that statistics allows academics to be explicit about assumptions and pressure the researcher to avoid the selection of cases supporting his/her proposed theory. In addition, coding procedures ensure that a researcher makes explicit what is measured and helps to avoid observing only the patterns that are sought (Braumoeller and Sartori 2004). It is also argued that statistical techniques help to test if the observed correlation between two variables is due to chance (Braumoeller and Sartori 2004).

Yet, Collier, Mahoney, and Seawright (2004) argue that statistical analysis can also be vulnerable to selection bias due to regression analysis. Selection bias can occur if the sample data used in a regression analysis is non-randomly selected data which can omit some important data. Results based on such samples may result in errors or overestimation/underestimation of the effect of the main variable. Collier, Mahoney and Seawright (2004), therefore, postulate that case study analysis is less susceptible to selection bias because this method employs causal process observations which is a different tool for inference than regression.

However, there can also be severe and common cases of selection bias in qualitative research. One of the biases with severe consequences is the confirmation bias. It happens when the cases are selected where independent and dependent variables vary according to suggested hypotheses and cases with different outcomes are ignored. This selection bias can happen even if there is a variation of both dependent and independent variables and variables can assume a wide range of values (Bennett 2004). Thus, the selection bias can underestimate or overestimate the proposed relationship, and is particularly



dangerous when the findings are proposed to be applicable to a larger sample (Collier and Mahoney 1996, p.71-72).

Nevertheless, case study researchers often argue that the selection bias can be justified if the selection suits to serve some purpose. If a particular variable is hypothesised to be a necessary condition for a particular outcome, then the researcher can prove this through the study of one case where the outcome occurred despite the absence of the necessary variable (Bennett 2004). King, Keohane and Verba (1994) propose to increase the number of observations across cases or within cases in order to address the issue of selection bias which single case studies are prone to.

In terms of my research design, only conflict dyads have been selected for the dataset. This may raise the question of selection bias<sup>23</sup>. However, as mentioned earlier, the research purpose is to identify the role of third parties in the conflict management of river disputes, that is, the phenomena which occur in conflict settings. Second, this issue of selection bias has been dealt with statistically, being discussed in the section about statistical models used in this study.

With regard to which methods to use, Brady and Collier (2004, p.9) argue that neither qualitative nor quantitative researchers can provide a 'ready-made formula' for producing good research. It rather depends on the goals of the research as to which methods could be relevant and appropriate. There is a trade-off between a rich but small number of cases and the large-n study, the findings of which can be generalised across a larger number of cases. Which methods to choose depends on the aims and purposes of the research, and each approach could be suitable to serve the specific purpose of the research project.

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<sup>23</sup> The discussion of the possible selection effect in my research design is provided in the section "Methods of analysis: Heckman selection model and Cox regression model" on page 133.

Hence, the methods chosen for this study are directly dictated by the proposed questions. The first research question, which aims to identify if third party involvement increases the likelihood of reaching river agreements, can well be answered through statistical methods utilising a large number of cases. On the other hand, the second question, on how and why third parties promote reaching river agreements, can be addressed better by a deep case study. Therefore, in this research I combine both methods to increase the leverage of my research.

### **Qualitative approach: Case study methods, process tracing and case selection**

As mentioned earlier, even though the statistical part of the research project can establish the relationship between third party involvement and the likelihood of the emergence of agreements, this approach is not particularly helpful in revealing much about the processes that explain how third party actors are able to help riparian states to reach a river agreement. Therefore, through an in-depth case study I aim to identify these underlying processes, and determine how these independent mechanisms and processes interact and affect the outcome.

Different types of case study methods can serve to meet different research objectives. For example, comparative case studies were favourably accepted as a method to develop new knowledge and theory after World War II (George and Bennett 2005). Comparative case study methods involve a comparative analysis of a small number of cases. One of the best known comparative case study methods is 'controlled comparison'. This involves the study of cases which are similar in every respect but for one main independent variable (Lijphart 1975). When such cases are found, they provide research tools for a researcher to identify causal explanations which can be equivalent to an

experiment. However, it is extremely difficult to find cases with these characteristics in the real world.

### **Process tracing: third party involvement in CA**

Process tracing is the most suitable method for this case study because the effect of a third party is a longitudinal process with a number of various events leading to a particular outcome. Such an effect can only be evident over time. The process tracing method looks at “the decision process by which various initial conditions are translated into outcomes” (George and McKeown 1985, p.35). Process tracing also allows observing the change of an independent variable over time that might have had a causal effect (George and Bennett 2005). In addition, the process tracing method complements other methods (George and Bennett 2005). For example, statistical methods, despite some differences, are complementary methods rather than competitive, which is important given the combined methods that I am utilising.

Process tracing also has some similarities with historical explanation (George and Bennett 2005). Historical explanation relies on a chronological narrative of the event. Kasowicz (2004), for example, states that the process tracing method is no different from a detailed and careful historical analysis undertaken by diplomatic historians. However, process tracing has features which are not present in historical studies, largely due to its emphasis on theory development and theory testing. Even though the historical method is useful for the subsequent development of theory, historical explanation is not believed to contribute directly to theory (George and Bennett 2005). In the case of this research, a “transcendancy” framework is used to explain how third parties promote cooperation; it allows testing as to whether the proposed analytical framework has explanatory power.

There are also various types of process tracing. According to George and Bennett (2005) there are detailed narrative, analytic, use of hypothesis and generalisation types, together with more general explanation types of process case studies. In a detailed narrative study, it takes the form of a story or narrative. The aim of this type of study is to provide an informative story about how the event occurred. There could be some explanatory variables but they are implicit. Historical chronicles are examples of process tracing which are independent of theory (Eckstein 1975). However, the narrative study can lay the foundation for a theoretically-focused study and can suggest various possible causal paths for a researcher (George and Bennett 2005). Some narrative process case studies can provide a causal hypothesis to explain the outcome but without the use of theoretical variables and any attempt at generalisation (George and Bennett 2005).

In another type of process tracing, a researcher attempts to provide a general explanation, rather than a detailed causal process. This type of process tracing is relevant when the data for a detailed explanation is not available, or when there is a need for abstraction to explain phenomena at a high level of generality (Sartori 1970). With this type of analysis there is no need to provide small details of causal processes or focus on the individual decision-making level (George and Bennett 2005). A researcher can employ various levels of theoretical explanation. This depends on the research objective and focus of the study, or the inability to explain all steps in a hypothesised process and lack or unavailability of data (George and Bennett 2005). Due to my inability to access and interview high level political leaders and individuals who were directly involved in decision-making processes some years ago, analytic and general explanation types of process tracing are considered to be relevant to serve the research purposes of the current study.

I aim to provide an explanation through the framework *transcendancy* but also am open to alternative explanations if such explanations exist. The design and methodology of the case study methods are largely based on the findings of the statistical study. According to the statistical analysis, third party involvement, power preponderance and water scarcity variables appear to be significant predictors for the emergence of agreements. For this reason the analysis of the cases will be couched in the context of these variables.

The case study involves one single process tracing case study. Ideally, there should be a variance in respect of either the dependent variables or the independent variables with at least two cases for comparison. However, a statistical analysis is also undertaken to identify the effect of third party involvement on the emergence of agreement across a large number of cases with variance on the dependent and independent variables. In this instance, a large-n study can be considered as a comparative case study. Thus, in the second stage, the point is to identify the processes and activities regarding how third parties promote cooperation; this is done through one in-depth process-tracing case study. Therefore, the selection of the case was based on the presence of the main independent variable such as third party involvement and the presence of a river agreement.

In this regard, the Central Asian case (Kyrgyzstan, Uzbekistan, Kazakhstan, and Tajikistan) was selected for theoretical and pragmatic reasons; after the collapse of the USSR it was expected that violent conflict would erupt over the transboundary waters in this region. Smith (1995, p.351) stated that "nowhere in the world is the potential for conflict over the water resources as strong as in Central Asia". This was because the shared rivers that were once managed within one state became international. Each independent state wanted to use

these transboundary rivers to serve their national needs. Yet, this created the dispute between them because the regime of water release from upstream states to downstream states was incompatible with the interests of the upstream states. The latter demanded compensation for water release, while the downstream states refused point-blank. In addition, river water plays a very important role in the economies of each of these CA states, especially the downstream states<sup>24</sup>.

Yet, despite these gloomy predictions, the CA states were able to cooperate and reach several agreements. There was also the active involvement of International Organisations (IOs) and international development banks as third party actors who got involved in transboundary river management in these four CA states. Therefore, CA presents the ideal case, where it is possible to trace the activities of third party actors in an environment where the relations over transboundary rivers have been tense and identify if and what activities have promoted reaching river agreements. Central Asia presents a case where the main variables of interest such as third party involvement, as well as dependent variables such as river agreements, are present.

Kazakhstan, Kyrgyzstan, Uzbekistan and Tajikistan are included in this study. Turkmenistan, although considered part of CA and a signatory to some of the river agreements, is not included in the case study. Turkmenistan is politically isolated and has had little interaction over hydropolitics in the region compared to the other four countries. Therefore, the case study is limited to only four CA states. The study covers the Syr Darya, Amydarya and Chu-Talas basins.

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<sup>24</sup> Please refer to Chapter V for a detailed discussion about CA states.

## **Data collection: selection of participants and interviews**

The data collection draws on primary and secondary sources, with more emphasis on the former for the latest events. Hydro relations between four CA states have been analysed chronologically as well as through the *transcendancy* framework. The study analyses the events starting from the early 1990s after the collapse of the USSR, when these CA states became independent. This made the river basin international, thereby giving rise to the disputes. The processes that led to river agreements are traced in chronological order and through the prism of a *transcendancy* framework. The following questions were asked during tracing the process that led to agreements: 1) What aspect of the transcendancy problem did exist, and how was it addressed? 2) What was the role of third parties in addressing the transcendancy problems and in reaching a particular agreement? Did third parties play any role in the emergence of agreements? 3) What activities were undertaken to promote specific agreements and how did these activities promote the reaching of river agreements?

I undertook three weeks of field research in Kyrgyzstan, Tajikistan and Kazakhstan from 6<sup>th</sup> of September till 28<sup>th</sup> of September in 2012 ; approximately one week was spent in each country. This was possible due to prior arrangements and appointments with people via email and phone before my arrival. Fieldwork research in Uzbekistan was not possible due to security reasons<sup>25</sup>. I also undertook six interviews via Skype while I was still in New Zealand, including two interviews with representatives from Uzbekistan. Two types of sources were utilised to collect the data. First, while in Central Asia relevant documents related to transboundary rivers were explored and

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<sup>25</sup> There was an ethnic conflict between Uzbeks and Kyrgyz in the south of Kyrgyzstan in 2010. It was reported from informal sources that since the outbreak of this conflict, it had become difficult and dangerous for holders of Kyrgyzstan passports to travel within Uzbekistan. In addition, it was also difficult to obtain Ethics Approval from the University for security reasons so therefore I had to bypass travel to Uzbekistan.

collected. This was complemented by information from secondary sources such as existing publications and research. The second source of data collection was semi-structured interviews with the government officials, individuals working in various IOs and development banks who are or were involved in transboundary river-related projects, representatives of ICWC, and some international water experts.

#### *Selection of participants for interviews*

The method of recruitment was purposeful sampling (see Bernard 2011). The advantage of this method is that it can generate the desired data for the research questions posed. This technique helped to select participants who are knowledgeable about a matter of research interest.

I conducted four interviews with government officials in Kyrgyzstan, four interviews with government officials in Tajikistan, three interviews with government officials in Kazakhstan, and two interviews via Skype with the former government officials in Uzbekistan. I conducted five interviews with representatives of IOs and the World Bank. In total, I conducted interviews with 18 participants.

I tried to interview the representatives from all four CA states, although the representatives from Uzbekistan were underrepresented. This was due to an inability to travel to Uzbekistan. However, the material from secondary sources on the water issues in Central Asia was sufficient to compensate for this.

One of the limitations of this research is that it was impossible to access the highest political leaders who can make decisions on water-related issues such as Presidents and Ministers. Also, it was difficult to identify and access some of the politicians who made the decisions or were directly involved in negotiations of agreements in the early years.



### *Semi-structured interviews*

I undertook semi-structured interviews with the participants. This method was selected because it provides sufficient structure, but is flexible enough to change the direction of the questions and clarify the meaning of what was said (Bernard 2011). A set of questions for each participant was prepared in advance, according to their position, experience and expertise. However, the basic structure and main topics of interest were still kept (Bernard 2011). The semi-structured method allowed maintaining a relatively sincere conversation about the issues related to transboundary rivers in CA, yet I felt that some participants were reluctant to share some information. Interviews lasted from 30-45 minutes. The guide questions used during the interviews are provided in Appendix III.

## **Quantitative approach: Data, models and operationalisation**

The statistical study utilised Tir and Ackerman's (2009) dataset as a point of departure. Tir and Ackerman used Toset, Gleditsch and Hegre's (2000) data to identify the relevant universe of cases and their units of analysis were dyad-years in the 1948-2000 time period. The universe of cases are contiguous pairs of states in Asia and Africa which have at least one river in common. Even though some studies focus on basin level cooperation, the dyad-year provides more fine-tuned data to explore the factors that contribute to interstate cooperation. In addition, third party involvement involves numerous interactions over time. Therefore, the dyad-year level allows examination of the changes in observations taken over time. Further, only conflict dyads have been included in the dataset. The reason for this is that in this study I am interested

in the conflict management of river disputes and aim to identify the role of third parties in managing river disputes.

In order to select conflict dyads, I utilised the International Water Event Database (Yoffe and Larson 2002). Water events in the Water Event Database are defined “as instances of conflict and cooperation that occur within an international river basin, that involve the nations riparian to that basin, and that concern freshwater as a scarce or consumable resource (e.g. water quality, water quantity) or as a quantity to be managed (e.g. flooding or flood control, managing water levels for navigational purposes)” (Yoffe and Larson 2002, p.9). This ensured that only events related to transboundary issues were considered.

There are certain limitations to the Water Event Database. First, it was compiled based on media-reported events which may raise concerns regarding reliability and objectivity of data. Second, event data for earlier periods is less comprehensive because of a relative lack of contextual information in the datasets used (Yoffe and Larson 2002). But since there is no alternative database where water-related events can be obtained, this database provides the best way to select cases where conflict events over rivers have occurred.

The Water Event Database provides an intensity scale of cooperation or conflict for the event and a Bar Scale (Water Event Intensity Scale) rating and detailed summary of the event. The Bar Scale rating ranges from 7 (being an extremely positive relationship) to -7 (being an extremely negative relationship, such as declaring war) (Yoffe and Larson 2002). All dyads that have any negative interaction (from -1 to -7) between 1948-2007 are included in the data starting from the year when the first negative event occurred. For example, if the first negative event occurred in 1980, the dyad has been included only from 1980

until 2007. All dyads that have only positive interactions are excluded from the data because these dyads have only positive interactions over river issues. The definition of intensity of conflicts is obtained from the Water Event Database (Yoffe and Larson 2002). The definitions are provided below.

<b>BAR Scale (Water Event Intensity Scale)</b>	
<b>Bar Scale</b>	<b>Event Description</b>
-7	<b>Formal Declaration of War</b>
-6	<b>Extensive War Acts causing deaths, dislocation or high strategic cost:</b> Use of nuclear weapons; full scale air, naval, or land battles; invasion of territory; occupation of territory; massive bombing of civilian areas; capturing of soldiers in battle; large scale bombing of military installations; chemical or biological warfare.
-5	<b>Small scale military acts:</b> Limited air, sea, or border skirmishes; border police acts; annexing territory already occupied; seizing material of target country; imposing blockades; assassinating leaders of target country; material support of subversive activities against target country.
-4	<b>Political-military hostile actions:</b> Inciting riots or rebellions (training or financial aid for rebellions); encouraging guerilla activities against target country; limited and sporadic terrorist actions; kidnapping or torturing foreign citizens or prisoners of war; giving sanctuary to terrorists; breaking diplomatic relations; attacking diplomats or embassies; expelling military advisors; executing alleged spies; nationalising companies without compensation.
-3	<b>Diplomatic-economic hostile actions:</b> Increasing troop mobilisation; boycotts; imposing economic sanctions; hindering movement on land,

	<p>waterways, or in the air; embargoing goods; refusing mutual trade rights; closing borders and blocking free communication; manipulating trade or currency to cause economic problems; halting aid; granting sanctuary to opposition leaders; mobilising hostile demonstrations against target country; refusing to support foreign military allies; recalling ambassador for emergency consultations regarding target country; refusing visas to other nationals or restricting movement in country; expelling or arresting nationals or press; spying on foreign government officials; terminating major agreements. <i>Unilateral construction of water projects against another country's protests; reducing flow of water to another country, abrogation of a water agreement.</i></p>
-2	<p><b>Strong verbal expressions displaying hostility in interaction:</b> Warning retaliation for acts; making threatening demands and accusations; condemning strongly specific actions or policies; denouncing leaders, system, or ideology; postponing heads of state visits; refusing participation in meetings or summits; levelling strong propaganda attacks; denying support; blocking or vetoing policy or proposals in the UN or other international bodies. <i>Official interactions only.</i></p>
-1	<p><b>Mild verbal expressions displaying discord in interaction:</b> Low key objection to policies or behaviour; communicating dissatisfaction through third party; failing to reach an agreement; refusing protest note; denying accusations; objecting to explanation of goals, position, etc.; requesting change in policy. <i>Both unofficial and official, including diplomatic notes of protest.</i></p>

Since with statistical analysis it is difficult to establish causality, there is a possibility that third parties may be involved when there is already a river

agreement in place. In order to take this into account, all dyads where third party involvement took place after a river agreement was signed were excluded from the analysis.

With regard to classification of regions, the UN database was used (UN Statistics Division 2010). However, I did not follow the exact classification because the UN database did not have Middle East as a region. I excluded the dyads that were included in the Issue Correlates of War (ICOW) database as Middle East. There are 25 conflict-dyads covering Asia and Africa over the 1948-2007 time period.

### **River agreements as dependent variable**

There is a debate about the depth of cooperation and one line of argument is that states sign agreements and comply with them because they would behave that way even without an agreement (Downs et al. 2009). These arguments suggest that a large number of signed agreements were “oversampled on the shallow end of the cooperation spectrum” (Mitchell and Hensel 2007 p. 722). Bernauer (2002) for instance, in an analysis of works of several authors (see Wolf 1997, 1995; Wolf et al. 1999; Durth 1996) criticises that they equate reaching agreements as a success, ignoring the effectiveness of these treaties. Dombrowsky (2007) also postulates that neither states nor international institutions have enforcement mechanisms and therefore proposes to investigate further the effectiveness of a large number of international water agreements.

Yet, having river agreements in place, according to Brochmann and Hensel’s (2009) study, helps riparian states regulate the usage of river water and avoid potential violent conflicts. Brochmann and Gleditsch (2006), utilising the Water Event Database, explain that treaties are associated with cooperative events as well as conflictive events. They suggest that this is because treaties are

generally signed between states that have a more conflictual relationship and therefore they see that the important role of international organisations in the first few years is to monitor and mediate between states (Brochmann and Gleditsch 2006). Despite these questions of the effectiveness of river treaties, the presence of river treaties helps to regulate the dispute via peaceful means.

The dependent variables in this study are river treaties which are identified from the International Freshwater Treaties Database (Wolf 2007). According to the International Freshwater Treaties Database, river treaties that are included in the database relate to “international freshwater resources, where the concern is water as a scarce or consumable resource, a quantity to be managed, or an ecosystem to be improved or maintained” and they concern “water rights, water allocations, water pollution, principles for equitably addressing water needs, hydropower/reservoir/flood control development, and environmental issues and the rights of riverine ecological systems” (Wolf 2007). All other treaties that regulate navigation rights and tariffs, division of fishing rights, and delineation of rivers as borders or other territorial concerns are not included in the database nor in this study. The study includes all river use treaties because disputes often arise not only out of the rivers’ direct consumptive use, but also from such developments on the river as hydroelectricity generation projects and dam building causing riparian disputes. Moreover, treaties do not always spell out the specific use of rivers (Wolf 2007). Multilateral treaties were separated into bilateral treaties before inclusion into the dataset (Tir and Ackerman 2009). In my dataset, there are a total of 34 river treaties.

## **Data collection and operationalisation of third party involvement**

The main independent variable is third party involvement. New data was collected on the involvement of third parties dealing with river issues in Asia and Africa. Databases such as Factiva, Water Event Database, *New York Times (Historical)*, *Times Digital Archive*, as well as case studies and books, have been used to identify the events when third parties were involved in river cooperation or dispute. Factiva covers events only from 1980 to the present; therefore, *New York Times (Historical)* and *Times Digital Archive* databases were included to cover the period from 1948 to 1980. These databases, including the International Water Event Database, cover media-reported events. The reliance on media reports may raise a concern as to whether the media reports provide objective or useful data about the involvement of third parties dealing with issues around transboundary waters. But given the difficulty of obtaining information about third party activities in transboundary river issues, data obtained from the media can be a useful indicator to identify the presence and level of involvement of third parties in issues related to international rivers and the best possible strategy for this study.

Only events which are reported to have occurred are included in the dataset. The offer to be a mediator, or an event which is reported to occur in the future, were not coded as third party involvement and were not included in the data.

### *Third party actors*

Third party actors could be state, intergovernmental organisations, development banks, individuals, global NGOs, international corporate organisations, or regional organisations.

### *Third party activities*<sup>26</sup>

The techniques used by third party actors are numerous. The majority of existing research focuses on more active types of third party techniques such as mediation. But for lower level disputes numerous other less intensive intervention techniques are expected to be employed by third parties. Moreover, river disputes are closely related to development issues, therefore, the types of third party activities are not restricted to the political dimension. A wider range of activities by third parties are included in the data and are described below.

Conflict management practices vary in the present day and scholars use different classifications of conflict management techniques. In the context of my research, the following activities are considered as conflict management practices by third parties: activities facilitating communication (use of good offices, seminars, conferences) mediation, inquiry, adjudication, arbitration, projects facilitating riparian cooperation over river usage, and financial aid or funding. Definitions of some of these third party techniques were taken from the ICOW general codebook (see Hensel 2008).

### *Good offices*

“Good offices” refers to the least intrusive form of third-party participation, involving an attempt by the third party to facilitate communication between the claimants” (Hensel 2008, p.9). Third party actors often provide a neutral place for meetings or meet with each party separately to exchange proposals and communicate between them. The main purpose of providing “good offices” is to increase communication between parties rather than proposing any solution or recommendation.

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<sup>26</sup> Arbitration and adjudication were also included as third party involvement techniques. However, there was no such technique identified in this study and the definitions of these types of involvement were not included in the chapter.



### *Seminars/symposiums/conferences*

Often, third parties facilitate communication between disputing riparian states through seminars and symposiums. Seminars are a good way to bring disputing parties together to discuss the problem. This leads to improved communication between hostile parties, and gives an opportunity for parties to discuss the issue with international experts, reduce the points of difference, and lower the tension. It is also possible to come up with a potential resolution to conflict. Even though one meeting/seminar/conference may have little impact, the accumulation of such formal and informal meetings, called “dialogue accumulation”, significantly improves the communication between conflicting parties and can have a significant impact on cooperation (Amer et al. 2005, p.11). Seminars/symposiums/conferences which are financed and coordinated by a third party were included in the dataset. Seminars/ symposiums/ conferences organised by disputing states themselves are not included in the data. However, if another riparian state (not involved in the dispute) organised a seminar on this particular dispute it is coded as a third party involvement.

Seminars organised by local actors such as local NGOs are not coded as third party involvement. Their role in pushing the governments to more cooperative relationships with other riparian states is recognised. However, not all events organised by local NGOs are captured in the news. Due to inconsistency in the news coverage, these actors are not included. However, if seminars or conferences are organised through local NGOs but the event is financed by external actors, these events are coded as a third party involvement.

Sometimes it is not clear who organised and financed the conference, or seminar. In this case, it was excluded. If there is a meeting with the

representatives of IGO or other third party organisations to discuss particular issues, it is still coded as third party involvement.

In many cases, the attendees of a seminar (official government representatives, representatives of third parties, or heads of the international organisations, etc.) are mentioned in the news. However, there are cases when there is no information on participants of the seminar (except that there are representatives from riparian states). In such cases, the seminar is still coded as a third party intervention as it is believed that relevant experts in the field attend the event, and they can subsequently have an impact on decision making.

#### *Projects undertaken by third parties*

Often third parties set up projects with the aim of facilitating cooperation and increasing the dialogue for sustainable water management. A cooperative environment can be created by the exchange of data or establishing standard sampling, analysis and data management techniques for all partner countries, or establishing a social framework (i.e. annual international meetings) for whole-watershed management. Only projects which focus on facilitating a cooperative environment in the basin are included. The projects which focus on one particular issue (such as improved water sanitation, or irrigation facility) which do not affect the relationship of riparian states are not included. For example, if the aim of the project is to stop traditional slash and burn agriculture and illegal logging which cause sedimentation, such a project is not coded as third party involvement. Integrated Water Management Projects (such as ZACPLAN, Nile Basin Initiative, etc.) for the basins are also coded as a project. Flood management projects are considered to regulate the flow and quantity of river water which requires riparian cooperation. Such projects and symposiums (which discuss associated issues) are included if third parties undertake and assist with flood management projects.

There could be the question as to whether projects are undertaken after river agreements have been signed. Even though projects may be undertaken after an agreement has been reached, there are cases when the projects and financial incentives were provided by third parties but no agreement has been reached. For example, the Nile Basin Initiative project is supported by third parties but no agreement has been signed with Egypt, the main contestant in the basin. For example, UNDP provided financial assistance to support a fact-finding mission, and also organised a second meeting of the ministers in Addis Ababa in January 1989, but these efforts were unsuccessful (Swain 1997). Another example is the case between Armenia and Azerbaijan over the Kura-Arak river. Third party actors assisted with various small-scale projects to facilitate cooperation over the river, yet these states have not reached a river agreement.

#### *Mediation*

In mediation, a third party plays a more active role. The third party actor discusses the issue with disputants and proposes a plan for conflict resolution (Hensel 2008). In mediation, the mediator is actively involved in negotiations, can transmit the information and proposals to disputing parties, and can suggest alternative solutions. Mediation can be more structured than conciliation, and in mediation a mediator's skills, expertise and position may play an important role. For example, the role of the World Bank in the Indus basin dispute between India and Pakistan is considered as mediation. The World Bank was even a signatory to the river agreement.

#### *Conciliation*

Conciliation is a fact-finding exercise by a third party actor who investigates the claim or issue in an impartial way and helps to establish the facts. Unlike mediation, conciliation is less intrusive and does not propose a solution, except by non-binding recommendations. Yet such investigation does not necessarily

result in a recommendation. Personal attributes, expertise and the standing of the person involved may not play as important a role in conciliation compared to mediation. In addition, in conciliation a dispute is formally submitted to a commission of conciliation, which then studies the facts and questions involved. The conciliator then issues a final report containing the conciliator's conclusions and offering a (nonbinding) recommendation for settlement (Hensel 2008, p.9 ).

#### *Feasibility study*

A feasibility study is another type of fact-finding exercise which aims to study the possibility of joint river management, or to study the physical features of a river or basin. Disputes sometimes arise over the flow and volume of a river or any other physical characteristics of a river. This sort of exercise helps to establish the facts, collect the data and study the social and economic infrastructure of the basin countries. This gives an opportunity to draw a plan for joint management of a river or gives the objective facts and data from where the parties can start negotiation over the disputed issues. It may also give the third party objective information to bring the parties together and offer options for cooperation in various areas in the development of the basin.

#### *Financial aid and funding*

States can be induced to sign a treaty or agreement by financial or political leverage. Because financial and political leverage plays an important role in the emergence of an agreement, financial aid to enhance cooperation between riparian states has been included as a third party technique. For example, in the case of the Mekong basin, donors provided grants and financial support to set up the Mekong Committee. The aim of the Committee was to promote regional cooperation in the development of the river. However, the aid to only one riparian state to develop the river is not considered as a third party

involvement or when aid or funding is not used as a leverage for riparian cooperation. For example, Canada and Japan gave a grant to the Republic of Vietnam for the Mekong river development in 1966. This case is not considered a third party involvement because it is aid to only one state. Even though the aid to an individual state could be the donor's leverage to convince the state to enter into agreement, it will not necessarily be true in all cases.

### **Control variables**

Other variables that are included in the dataset were also present in the dataset used by the Tir and Ackerman (2009) study. However, their study covers the time period between 1948 and 2000 and therefore the figures for variables from 2000 to 2007 were further updated.

*Power* is considered by many to be a central concept in explaining conflict and information was obtained from the Correlates of the War Material Capabilities (Bennett and Stam 2000). It is expected that power imbalance is conducive to the emergence of river agreements and that power preponderance allows stronger states to coerce weaker states toward cooperation or offer incentives to encourage cooperation. Power includes six indicators - military expenditure, military personnel, energy consumption, iron and steel production, urban population, and total population – which are included in this data set. It serves as the basis for the most widely-used indicator of national capability, CINC (Composite Indicator of National Capability) and covers the period from 1816 to 2007. Power distribution is indicated by the natural logarithm of the ratio of the stronger state as opposed to the weaker state. COW datasets do not include dyadic level information; therefore, I used EUGene software to produce data at the dyadic level, the same measurement that was used by Tir and Ackerman.

*The level of economic development-* Economically –more-developed states are expected to be pushed by the industrial sector and middle class to secure the future usage of water thus forcing states to conclude a river agreement. In order to indicate the level of economic development for a dyad, the less-developed state's gross domestic product per capita was used (Banks 1979). The state's gross domestic product per capita from 2000 to 2007 was obtained from the World Bank database.

*Water availability-* The inclusion of the water availability variable takes into account whether water scarcity increases the likelihood of the emergence of agreements. The data on water availability per capita (the log number of water-poorer countries) are obtained from Engelman (2002). Engelman used data from AQUAstat as a primary source, and in his publication data is only available until 2000. Since there was no data for each year, it was extrapolated from 2000 to 2007 with the assumption the data is relatively invariant and the population growth is at a relatively similar rate.

The river flow pattern (the upstream/downstream relationship) and the number of rivers were found in the Toset, Gleditsch and Hegre (2000) dataset. An upstream state is perceived to be able to control the flow and quality of the river water. This logic leads to the hypothesis that states that share an upstream/downstream configuration find it hard to reach an agreement. In addition, if states share more than two rivers, it is more likely riparian states will reach an agreement due to the possibility of compromises. For example, when states share several rivers, state A can seek more concessions from state B over one river in return for state A giving more concessions to state B with regard to another.

*Interdependence*- Interdependence creates the tools to resolve the disputes without entering into violent conflict (Gartzke et al. 2001) and the opportunity costs of the war would be so great that states restrain from resorting to war (Hirschman 1977). Therefore, it is expected that the more the states are economically interdependent the more likely they will come to an agreement over the use of river water. This variable is created utilising the data on trade and GDP, when the volume of dyadic trade was divided by the size of the dyadic economies (Gleditsch 2002).

*Regime difference* – The variable “regime difference” helps to measure how similar or different institutional arrangements are between dyads. It is expected that dyads which have similar institutional arrangements (e.g. joint democracy or joint autocracy) are more likely to reach agreements. I obtained the data for this variable from Polity IV database. The "Polity Score" captures this regime authority spectrum on a 21-point scale ranging from -10 (hereditary monarchy) to +10 (consolidated democracy) (Marshall and Jaggers 2006). This variable was created by subtracting the lowest score from the highest. The higher the number, the further apart these dyads are in terms of their institutional arrangements. The lower the number, the more similar the dyads are in their institutional arrangements.

I was not able to include some other control variables such as alliance and recent militarised disputes due to unavailability of data from 2000 to 2007. However, these variables were included in the additional analyses to test for the robustness of the findings covering the observations only up to 2000 (see the Appendix VIII).

*Alliances*- As a response to security threats, states may form alliances in order to “balance” against a major enemy or “bandwagon” (ally with the major enemy )

to reduce the potential threat (Waltz 1979; Hinsley 1963) . Thus it is believed that states entering into an alliance decrease the security threat which can lead to increased trust (Keohane 1984; Liska 1962) and it is expected that states which are allies are more prone to produce river agreements. I was not able to include alliance as a control variable in the main analysis because the data was only available until 2000. However, as a robustness check, alliance was included in the analyses up to 2000 (see the Appendix VIII). The data on alliances are available from Gibler and Sarkees (2004).

*Recent militarised dispute-* Following the security dilemma logic, states that experienced militarised conflict are therefore less likely to trust each other. In this study it is expected that the potential of emergence of river agreements is minimal among members who had militarised conflict. The data for militarised interstate disputes (MID) was obtained from Polity IV and was only available until 2000 (Ghosn et al. 2004). This variable measures the potential of militarised dispute between states within the dyad by the logged number of years since the last militarised interstate dispute. This variable was included in additional analyses up to 2000 as a robustness check for the findings<sup>27</sup>.

### **The occurrence of third party involvement**

Another aspect of this research, as mentioned in previous chapters, is to understand where third party intervention occurs and what factors promote third party intervention in river disputes. In Chapter II, the theoretical considerations where third party actors may intervene have been provided. The following additional variables, apart from the variables described above, were included in the statistical study.

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<sup>27</sup> In addition, the results were tested for fixed effects (FE) by including country dummies. The results show that findings are robust.



### **Dependent variable**

The dependent variable in this case is third party involvement.

### **Independent variables**

*Upstream hegemon* variable represents if a state in a dyad is both an upstream state and more powerful. The dyads that have such composition when an upstream state is also a hegemon are coded as 1 and 0 otherwise. The information on power was obtained from the Correlates of the War Material Capabilities (Singer et al. 1972). The information on the upstream and downstream positions was obtained from (Toset et al. 2000). In their dataset they have an upstream state average variable indicating which state is most often upstream/downstream in the river system counting all shared rivers in the dyad.

### **Control variables**

It is acknowledged that there is another dimension in understanding where third party involvement occurs, namely the supply side or mediators' perspective. Touval and Zartman (2001) for example, mention that although the mediators intervene in order to influence the resolution of the conflict, mediators by offering their service can also pursue and advance their interests. Likewise, Terris and Maoz (2005) found that a mediator's credibility along with the strategic interests of the mediator can have an impact on their decision whether to intervene in the conflict.

#### *Colonial history as strategic interest*

Some factors, such as former colonial history, can indicate whether states are of strategic interest to third parties. Former colonial powers are more likely to feel morally obligated to take up a mediator's role in their former colonies because former colonial powers share historical ties with their former colonial

territories (Greig 2005). For example, Bercovitch and Schneider (2000) suggest that it is the residual power of Great Britain and France that gets them involved in mediation efforts in their former colonial territories. Former colony means if one of the states in a dyad was a former colony. The former colony variable was created using the ICOW Colonial History dataset (Hensel 1999). However, colonial history can be dated back to the 19th century, therefore only states that gained independence from a colonial power after 1940 were coded as having colonial history and ties with colonial powers.

#### *Previous mediation as strategic interest*

Another factor that can capture the strategic interest of third parties and increase the likelihood of third party intervention is previous intervention. When third parties have more interests at stake in resolving the dispute, the more likely it is that an actor will offer to mediate (Greig and Regan 2008; Touval and Zartman 2001) and more likely to offer mediation several times. For example, Melin and Svensson (2009) found that if the third party was involved in conflict management previously, the likelihood that the third party would offer mediation again increases. Previous mediation was coded as 1 in the dataset from the year the dyad has experienced a second mediation.

#### *Hostility to major Western powers*

Crocker et al. (2003, p.152), in this instance, suggest that “cultural fit” which comprises close contact, ties and previous access to the parties is one of the factors that indicates the mediator’s readiness to intervene. Therefore, a dyad containing a state that is hostile to major western powers or is not open and integrated in the international community is less likely to experience the occurrence of mediation in their river dispute. This is because western powers became major players in the mediation market due to their global hegemonic

position, expansive alliance network, and availability of resources to offer the leverages. A hostile relationship to one of the western powers may substantially reduce the chances of third party involvement due to a limited number of potential third party actors willing to be involved and invest their resources, given they cannot promote their interests. Likewise, a riparian state which is not on good terms with the western powers may not be willing to engage with the western states or organisations, who can be perceived to be representing western interests.

In order to determine if any state in a dyad has a hostile relationship with the major western powers, I utilised the Diplomatic Exchange Dataset 1817-2006 (Bayer 2006). The information on the major western powers was obtained from the Correlates of War Project (2008). The Correlates of War Diplomatic Exchange dataset captures diplomatic representation at the level of *chargé d'affaires*, minister, and ambassador between members of the Correlates of War interstate system. If one of the states in a dyadic set has no diplomatic relations with a powerful Western state, it was coded 1 and 0. The negative relation (that is coded as 1 which means having no diplomatic relationship) was included from the year it was first recorded that diplomatic relations were severed until the relationship resumed. If both states in a dyad have negative relations since the earliest year, then it was included. However, the absence of diplomatic relations does not necessarily translate to bad diplomatic relations, therefore, the case was explored further to confirm the situation. Also, it should be noted that some Western powerful states entered or left and again entered the list during a period of time. If any dyad had a relationship during the time the state was not considered as a major power, it was not included in the data. So only when powerful states were considered to be such during a certain period of time, were they included in the data.

### *Conflict scale*

In the mediation literature, some suggest that mediators get involved in relatively “easy” conflicts (Beardsley 2005; Greig 2005), or on the contrary, in conflicts that are difficult to resolve (Svensson 2006; Bercovitch 1997).

Therefore, this variable was created to take into account whether conflict intensity can determine the occurrence of third party involvement in river disputes.

The variable is taken from the Water Event Database (Yoffe and Larson 2002). Sometimes conflict events happened several times a year. In this case, the highest intensity conflict event was included for that year. However, if there was no event recorded in following years, then the conflict event that occurred after the highest intensity conflict event (since exact dates were provided including days and months) was recorded for the following years until another event occurred. For example, if events of -4, -3, -2 occurred in 1970 but in different dates and months, then the event of -4 was included for 1970. If there was no event in 1971, then the next event (e.g. at -2) which occurred at the latest date (for example, an event of -2 occurred in December 1970 while conflict of -4 occurred in January 1970) was included. Events in the database concern water as a scarce or consumable resource or as a quantity to be managed. There were also some events which were not related to transboundary issues. These types of events were not considered.

### **Method of analysis: Heckman selection model and Cox regression model**

Two methods were employed in the statistical analysis. First, the Heckman Selection Model was employed to exclude the possibility of selection bias because I selected only the dyads that experienced a conflict. The results show

that the selection effect is not present, therefore the Cox Regression Model is utilised. Nevertheless, the key findings are robust in both models<sup>28</sup>.

I discuss the methodological considerations of the Heckman selection model in this section. However, I provide the statistical results and diagnostics of the Heckman Selection model in Appendix IV.

#### *The Heckman Selection Model*

I am selecting only pairs of states that have experienced a dispute over transboundary rivers, which raises the possibility of selection effect. This is not unusual when empirical research relies on a sub-sample of population because truly random samples of population are rare in social research. Therefore a reliance on a subsample often raises the question of selection bias whenever inferences are attempted to be made from a non-random sample. When selection bias is present, it leads to biased results overestimating or underestimating the causal effects. But Thiem (2007) suggests that when the inferences are limited to selected observations the selection bias can sometimes be neglected. However, the selection effect should be dealt with theoretically and the substantive influence of the selection process should be excluded (Breen 1996). If the selection effect is theoretically substantial, then this can be dealt with through statistical procedures (Thiem 2007, p. 128).

It should first be established whether selection bias exists. When the dependent variable is truncated (which means the dependent variable does not have the full variance of its value), this may lead to a correlation between the error term and the independent variables. This correlation violates the assumption of linear regression that independent variables and the error term must not be correlated. This problem may result in underestimated as well as

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<sup>28</sup> In the early stages of the research process, the Logit method was also used and the key findings are consistent across all three models.

overestimated causal effects. However the truncation of the explanatory variable does not present an inference problem because the variation in the dependent variable is not restricted (Thiem 2007; King et al. 1994; Winship and Mare 1992). Yet the findings of such studies should be limited to the selected sample of the population.

My data are sample-selected observations because the criteria for selection of observations (dyads) are dependent on another variable (occurrence of conflict). This is because third party involvement (my main variable of interest) most likely occurs when conflict is present. The research question of this study is also to identify the role of third parties in the conflict management of river disputes. Yet, one may ask that systematic selection of only conflict dyads may raise the concern of whether river agreement is a function of conflict occurrence. So what we observe as a third party effect on the emergence of river agreements could be simply that a pair of states experiencing conflict are more likely to reach an agreement than dyads with no dispute. The results, therefore, could be biased because of the selection effect. It is important to address this to ensure that the estimates are not biased.

Thiem (2007) suggests that the selection bias can be dealt with formally or informally. Formally, it should be done via statistical models, while informally the inferences should be limited to the selected sample only (Thiem 2007). A scholar can specify the selection and outcome model to assess the character of selection by explaining how dependent and independent variables of the two stages are related. In case the researcher wants to apply statistical procedures, a researcher should make sure that data is available for both the selection and outcome stage (Thiem 2007).

According to Breen (1996), estimating selection effect is possible only for a sample selected or a censored sample. In this case, estimating the selection

effects in large-n studies could be done via the Heckman model (Thiem 2007). The Heckman model allows for the estimation of the selection and the outcome stage. These statistical procedures involve a two-stage process. For example, in the first stage (selection stage), the probability that a river dispute occurs should be estimated. It is assumed that the selection bias results from correlation  $\rho$  ( $=\rho$ ) between the error terms of both stages. The correlation coefficient of the error term and the inverse Mill's ratio (sigma symbol) would be used as an independent variable in the outcome stage. If the correlation of the error terms of both stages ( $\rho$ ) is equal to 0, selection and outcome can be seen as independent (Breen 1996).

The main purpose of undertaking such procedures is to present unbiased estimates of the effect of explanatory variables on the outcome variable. Yet, one needs to apply these procedures with caution because these statistical procedures are parametric procedures and susceptible to violations of their distributional assumptions and their application can be problematic (Thiem 2007). Yet, if the reasons for the violations of the assumptions can be justified and considered alongside theoretical considerations, the estimation of the selection effects can be useful (Thiem 2007).

It is advised to include a variable in the selection stage that is not included in the outcome stage in order to identify the model, a variable that affects selection, but not the outcome (Sartori 2003). I included boundary length as an additional variable in the selection stage. Starr (2002) finds that boundary length is associated with the greater probability of conflict. However, it is unlikely that boundary length can have much effect on the emergence of river agreements. Boundary length has also been used as an independent variable to test if this variable has any effect on the emergence of agreements. The results show that there is no effect of boundary length on concluding agreements between riparian states. Although states with longer boundary lengths are also

more likely to share more rivers, variables such as the number of rivers and upstream/downstream relationships that control this relationship are also included in the selection stage.

#### *The Heckman Selection Model*

In order to model the selection process statistically, I employ the Heckman probit estimation model which involves two equations and also allows for a binary dependent variable in the outcome stage because both equations are probit models. In the **selection stage**, the following variables are included:

*Dependent variable* in the data is the conflict dyad. If the dyad is involved in a river dispute, it is coded=1, otherwise=0

*Independent variables*: water availability, number of rivers, upstream/downstream relationship, level of economic development, power parity and boundary length.

In the **outcome stage** the following variables are included:

*Dependent variable* is river agreements, where the presence of river agreements is coded 1, 0=otherwise.

*Independent variables*: water availability, number of rivers, upstream/downstream relationship, level of economic development, power parity and third party involvement.

Yet, there is also the possibility that the dependent variable “river agreement” is also associated with the occurrence of conflict. While the Heckman probit model cannot incorporate dependent variables into the selection stage, a seemingly unrelated recursive bivariate probit analysis (see Brooks 2007; Greene 2003) can allow the factors that cause equation 1 to be removed from the analysis of equation 2 (Kimball 2006).



I employ two selection models for the purposes of identifying if the selection bias is present. The first, the Heckman probit estimation model, includes all variables, including third party involvement in the outcome stage, and allows testing of the selection bias. But this would not allow testing for the dependent variable, agreement. The second unrelated recursive bivariate probit analysis allows the removal of the effect of the dependent variable “river agreement”, but does not allow us to include the third party involvement variable in the outcome stage. If the two models show that  $\rho=0$ , selection bias is not evident and the Cox regression model can be used.

The results of a seemingly unrelated recursive bivariate probit analysis and the diagnostics of this model are attached in Appendix IV.

#### *Cox-Regression Model*

To test the hypotheses in this study, I used the Cox regression model. This event history model is also suitable when the dependent variable is dichotomous and it can also accommodate the presence of right censored observations (Box-Steffensmeier and Jones 2004), which other models like logit cannot. Event history models are also called survival models and many social science problems involve the notions of timing and change (Box-Steffensmeier and Jones 2004).

Why do riparian disputes fail to persist? This question indicates the notion of “survival”. For example, what is the risk or the probability that riparian states reach an agreement when a third party becomes involved in the management of a dispute? These are important concepts to consider when selecting the appropriate model. Event history data are derived from *failure-time processes* (Petersen 1995, p.7). Failure time process is when units (dyads) are observed at a particular starting point and are observed over a period of time. During this time, the unit is at risk of experiencing some event. For example, the dyad from

the point where they have a dispute is at risk to reach an agreement (an event). After the event occurs, the unit is not observed any longer, or is at risk to experience another event. Sometimes, the unit does not experience an event within the observed timeframe, and an event may occur after the last observation point. These cases are considered as *censored*. Thus, the units can fail (or an event occurs) or remain censored (unobserved) (Box-Steffensmeier and Jones 2004).

In my data, the units can be left censored and right censored because the dyads can have disputes and agreements after the last point of observation and the agreement may have existed before the dispute arose during the observation time. There are also instances when the dyads can have multiple agreements over time, and multiple disputes and several agreements may emerge to address various disputes that may arise. These are called “multiple spells” (Box-Steffensmeier and Jones 2004). So I assume that from the point that a dispute arises, the dyads address this particular issue over which the dispute arises in their agreement. It is also important to distinguish censored and uncensored cases in the analysis, and failure to incorporate this in the analysis may lead to misleading conclusions. Event history methods can accommodate the presence of left and right censored observations (Box-Steffensmeier and Jones 2004).

One of the advantages of the Cox model is also that this model allows us to explore the relationship between covariates and the hazard rate, independent of the nature and shape of the baseline hazard rate (Box-Steffensmeier and Jones 2004, p.88). However, if time dependency is of interest, the Cox model has disadvantages because the baseline hazard is closely adapted to the observed data.

The Cox model uses the partial likelihood method to obtain estimates of the parameters. The partial likelihood method includes information on ordered failure time, rather than interval between failure time regarding relationship between the covariates and the hazard rate. However “ties”, or events occurring at the same time, cannot be accounted for in partial likelihood. The Cox model can still be adapted to handle tied data. One way to handle tied data is the Breslow method (Breslow 1974). The basic assumption of the Breslow method is that the size of the risk set is the same for all events that occurred at the same time because there is no information regarding which event occurred first (Breslow 1974, p.54 ). The partial likelihood function is based on the ordered duration times but not on the length of the interval between duration times. Thus censored observations contribute information to the “risk set” but do not contribute any information regarding failure times (Box-Steffensmeier and Jones 2004). There are instances when states reach river agreement the same year when third party involvement occurs. Therefore the Cox model’s flexibility to take into account the events occurring at the same time well suits the research purpose.

There are also time-varying covariates (TVC) such as GDP, water availability and power balance present. These are covariates that change over time. Fortunately, the Cox model is able to account for the inclusion of covariates that change values over time. One of the processes that is used with TVCs is the counting process (Fleming and Harrington 1991), which can be included in the Cox model.

In the context of the duration model, the assumption that the observations are independent may not hold true due to the entry of multiple records of data per observation. The method that handles this problem is “robust” estimators, which relaxes the assumption that the observations are independent. This can

be done through clustering the observations within the data set and re-estimating the variance (Box-Steffensmeier and Jones 2004, p.114). The observations are clustered based on dyads and re-estimated using robust estimators to relax the assumption that observations are independent.

I have attached the diagnostics of the Cox regression statistical analysis in Appendix V.

## **Conclusion**

Chapter III has explained the research design and methods utilised to answer the research questions posed in this study. After discussing the pros and cons of using either only case study methods or only statistical methods, it has been concluded that a mixed method is appropriate for the current project. The current research project will involve the statistical method, for which new data were collected, and explore if third party intervention increases the likelihood of reaching river agreements. The case study will explore how and why third party intervention increases the likelihood of cooperation. The next chapter thus aims to present the empirical findings from the statistical study and will show not only the results of statistical analysis, but will also present through descriptive statistics different types of third party actors involved and the activities they undertake to enhance river cooperation.

# **Chapter IV Quantitative Results: Third Party Involvement in Transboundary River Disputes**

## **Introduction**

In previous chapters, I discussed the methodology and methods used to undertake the present research. This Chapter starts with a presentation of the results of the analysis. The first section begins with descriptive statistics on third party involvement techniques and a description of third party actors followed by the results from the statistical analysis. The second section presents results from the analysis that explores the occurrence of third party involvement in river disputes. This section also includes a description of states involved in riparian disputes, followed by a presentation of the statistical analysis and effect of various variables on the occurrence of third party involvement. I also include some descriptive statistics on concessions in river agreements obtained from the ICOW database. This analysis is presented in the context of power imbalance arguments, and since the results of my findings show that power imbalance plays an important role in the emergence of river agreements, I deemed that the findings from the ICOW database may enrich the analysis. The implications of the statistical findings in this Chapter are more extensively discussed in Chapter VI.

## **Third party involvement techniques and type of third party actors**

The analysis begins with an examination of the types of third party involvement in riparian disputes. According to the data, 91 events of third party involvement occurred in Asia and Africa from 1948 to 2007. The type of actors involved and the techniques they utilised reflect the nature of the

various river disputes. The study reveals that third party actors are involved in riparian disputes, not necessarily just as mediators. For example, mediation makes up only 12% of cases, whereas conciliation is 5% and good offices<sup>29</sup> is 4%. The majority of mediation and conciliation efforts took place in the Indus basin between India and Pakistan, between countries in the Mekong basin, and between Angola and Namibia in the Zambezi basin. There are also five instances where the use of good offices has taken place. Third party actors such as UN and UNDP provided good offices in negotiations between South Korea and North Korea over the shared Tumen River between 1991 and 1995. In another case, the OSCE offered good offices in London for Central Asian countries in 2000. Unlike conventional thinking which associates third party involvement with mediation and individual mediation efforts, third parties in river disputes can induce river cooperation by conducting feasibility studies, providing funding and aid, setting up river-related projects, and by organising various seminars and meetings. According to Figure I, an examination of the type of third party involvement shows that aid or funding is the most frequently used technique, comprising 23% of all third party techniques. This finding is not surprising given the nature of river disputes that are usually related to competing development needs.

The facilitation of communication between disputing riparian states also appears to be a frequently used effective strategy. They do so by arranging numerous meetings and talks, seminars and conferences, good offices, and conciliation to ensure continued discussion and dialogue. Therefore, it is not surprising that the next most frequently used third party technique is meetings<sup>30</sup> and talks contributing 19%, followed by projects comprising 16%,

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<sup>29</sup> There are about 14 mediation efforts and six conciliation efforts

<sup>30</sup> There were about 21 meetings and talks found, 16 conferences and seminars, 18 projects and 28 funding and aids provided for cooperation over transboundary rivers.

with conferences and seminars taking up 14%. Third parties dealing with transboundary river issues also appear to frequently use feasibility studies as a tool to obtain necessary information and explore the potential of a river for development purposes. Feasibility studies<sup>31</sup>, for instance, comprises 7% of all involvement. Third parties can assist in collecting the necessary information to determine the technical and economic feasibility of joint projects on international rivers, and third parties using this new information can, in turn, create and communicate clear benefits of riparian cooperation. Therefore, investments and assistance with obtaining and sharing information provided by third parties encourages disputing parties to reach an agreement.

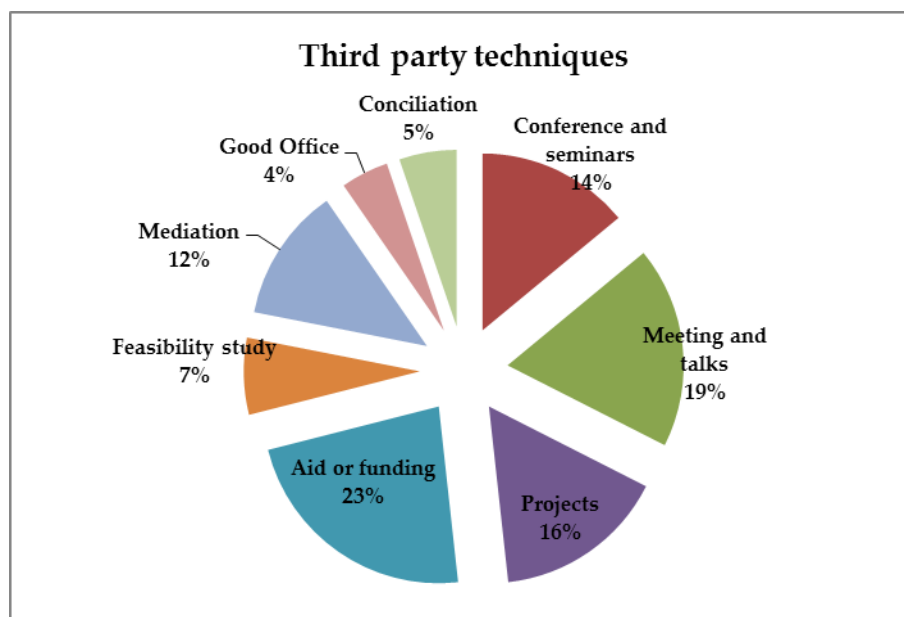


Figure 1 Pie chart of third party techniques

### *Third party actors*

The types of actors also vary and include states, intergovernmental organisations, international development banks, UN, OSCE, EU and other

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<sup>31</sup> There were about eight feasibility studies identified, the majority of which took place between countries sharing the Nile river and the Zambezi river.

organisations. As indicated in Figure 2, an analysis of the distribution of the type of third party actors that are most frequently involved in settling river disputes are Inter-Governmental Organisations (IGOs) comprising 42% of all actors. The United Nations comprises 8%, OSCE comprises 1%, EU comprises 1% and other actors comprise 1%. For example, there are two occasions of the EU's involvement between Ethiopia and Sudan and Cameroon and Nigeria, and two occasions of the OSCE's involvement in Central Asia. Some of the most frequently involved IGOs are the UNDP and UNEP. Even though these organisations are part of the UN system, the UN and its branches have been separated in the pie chart to provide a more nuanced picture.

International development banks are the next most frequently involved third party actors making up 25% of all actors. The growth of population presents challenges to nations to keep up with developmental needs. More resources and funding are required to build infrastructure and utilise the river resources which require substantial amounts of funding which states, particularly developing nations, seek from development banks. Consequently, banks and financial institutions are drawn into disputes and have to take up the role of arbiter and mediator in river disputes. The most frequently used international development banks are the World Bank, the ADB, and the African Development Bank.

States make up 22% of all actors. States also often get involved through their aid agencies like USAID, CIDA, SIDA and Japan's Council for Environmental Cooperation Promotion. Some of the less frequently involved actors are the IMF and World Meteorological Organization.



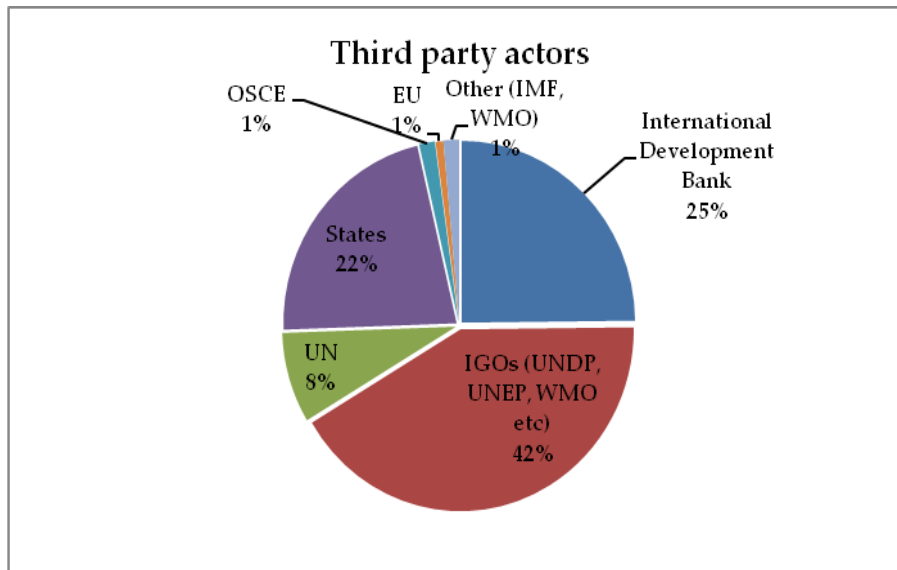


Figure 2 Pie chart of third party actors

## The effect of third party involvement on the emergence of river agreements

As indicated in Table I in Model I on page 160, third party involvement along with other variables such as power distribution and water availability, have a significant effect on the emergence of river agreements. The reported numbers are coefficients and hazard ratios with standard errors. The positive sign of the coefficient of third party involvement indicates that third party involvement increases the likelihood of the emergence of agreements. The significance level of the p-value of 0.000 and the hazard ratio of 6.16 indicates that third party involvement is also the strongest predictor of the emergence of river agreements. The “power distribution” is also a significant predictor with a p-value of 0.006 and a hazard ratio of 1.73. However, it is not as strong as third party involvement and water availability. This result indicates that power imbalance is conducive to the emergence of river agreements. The “availability of water” variable is also a significant predictor with a hazard ratio of 1.84 and a p-value of 0.000. The positive sign of the “water availability” variable is

contrary to my expectation but not surprising. The implication of this result is that dyads with more water find it easier to reach an agreement, or conversely dyads with water scarcity are less likely to reach an agreement. The “interdependence” as expected is a significant factor in explaining the emergence of agreements with a p-value of 0.000. The pairs of states which have higher volumes of trade and are interdependent are more likely to reach agreements. All other variables such as the “upstream/downstream relationship”, “number of rivers”, “regime difference”, and “level of economic development” have no significant effect on the emergence of river agreements in conflict settings. The statistical findings of this study answer the first research question. The findings show that third party involvement in river disputes increases the likelihood of reaching river agreements.

The involvement of international banks in the development of international rivers via funding and aid can be considered as a conflict prevention mechanism and these investments can be used as carrots or sticks to facilitate riparian cooperation. Even though the main objective of the banks is to facilitate development, riparian conflicts among states may hamper the development process and banks need to facilitate cooperation between states to achieve wider development goals for states and the region. Given the dyads in this study are mainly developing nations<sup>32</sup>, which are dependent on foreign assistance, third parties clearly have more tools at their disposal to induce river cooperation.

In order to explore if pure diplomatic third party involvement and development type of involvement may have different effects on reaching river agreements, third party involvement is separated into two different categories. In the same Table 1 in Model II, I have also collapsed different types of third

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<sup>32</sup> Countries were classified as developing nations according to the International Monetary Fund.

party involvements into two different variables: “peace diplomacy” and “development third party involvement”. The variable “meetings and talks” is coded further into diplomatic meetings and developmental meetings. The meetings which are purely political/diplomatic, the aim of which is to discuss possible cooperation, are coded as diplomatic meetings. The following variables were included in the variable “peace diplomacy”: conferences and seminars, diplomatic meetings and talks, mediation, good offices, and conciliation. The following variables were included in the variable “development third party involvement”: river related projects, funding and aid, feasibility studies, and developmental meetings.

The results show that both diplomatic and development types of involvement play significant roles in the emergence of river agreement. Model II shows that both development and diplomatic involvement, with a p-value of .000 and a hazard ratio of 6.14 for peace diplomacy and 5.32 for development involvement, are strongly correlated with the emergence of river agreements. The slightly higher hazard rate for the diplomatic type of involvement may imply that before proceeding to assist with managing transboundary rivers, political issues need to be resolved. This may require a frequent number of meetings and negotiations, which is reflected in the statistical findings. Water availability and power imbalances are also significant predictors in Model II. Additional analyses were undertaken as a robustness check for the findings. The findings are provided in Appendix VIII and the results confirm that the findings are robust and the effect of third party involvement in reaching river agreements is significant. In addition, diagnostic tests have been undertaken for the Cox regression model and the results are provided in Appendix V. The summary of statistics for the variables is provided in Appendix VI.

**Table 1 Cox regression estimates of the effects of third party involvement and other variables on the emergence of river agreements**

River Agreements			
Variable	Model I Third party involvement	Variable	Model II Peace Diplomacy and Development involvement
Third party involvement	1.892*** (.374) [6.35]	Peace diplomacy	1.925*** (.346) [6.37]
Water availability	.632*** (.242) [2.26]	Development involvement	1.697*** (.361) [5.42]
Upstream/downstream relationship	-.019 (.198) [1.02]	Water availability	.656*** (.144) [1.99]
Number of rivers	-.021 (.117) [1.00]	Upstream/downstream relationship	-.025 (.205) [1.31]
Level of economic development	.0001607 (.000299) [.99]	Number of rivers	-.019 (.110) [1.00]
Power distribution	.693*** (.145) [2.12]	Level of economic development	.0001405 (.0002556) [.99]
		Power distribution	.670*** (.149) [2.10]
Interdependency	255.067*** (55.19432) [2.4e+131]	Interdependency	249.043*** (53.18722) [2.3e+122]
Regime difference	.051 (.050) [1.06]	Regime difference	.042 (.057) [1.01]
Time at risk	864	Time at risk	864
Number of observations	524	Number of observations	524

Main entries are coefficients, standard errors are in parentheses, hazard ratios in square brackets, and p-value (or significance levels) \*\*\*p<.01; \*\*p<.05, \*p<.1, one-tailed test, number of observation is 524. Unit of analysis is dyad-year.

*Cox regression survival plots for third party involvement*

Figure 3 demonstrates the survival plots for third party involvement. In other words, this plot presents graphically the probability of the emergence of agreements according to each point in time for cases with third party involvement and cases without third party involvement. The survival rate for cases with third party involvement is much shorter, implying that dyads experiencing third party involvement are more likely to reach agreement sooner.

Figures 4 and 5 present the survival plots for different types of third party involvement. As shown in the figures, both types of involvement have almost the same rate of survival implying that their involvement has a similar effect.

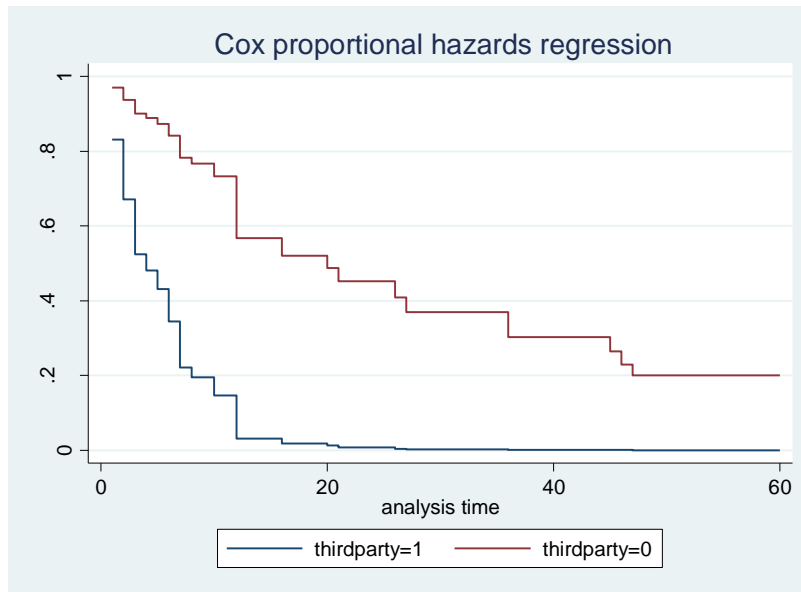


Figure 3 Cox regression survival plot for third party involvement

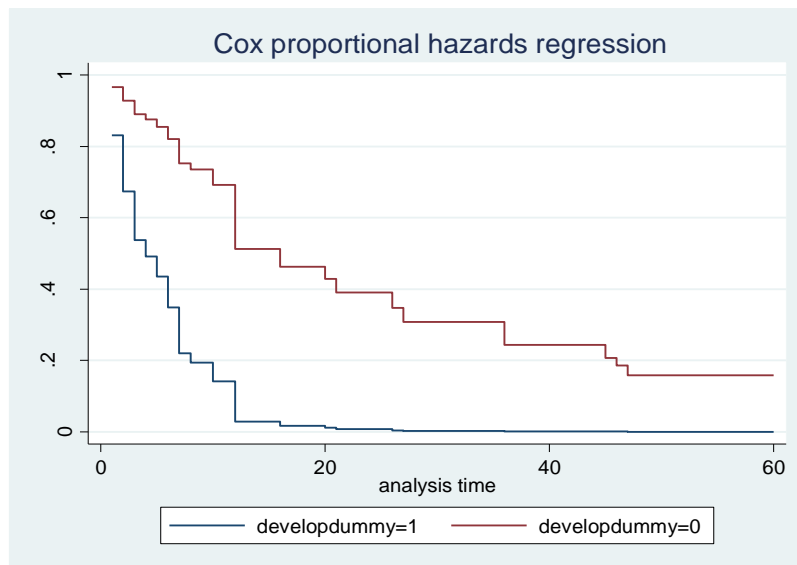
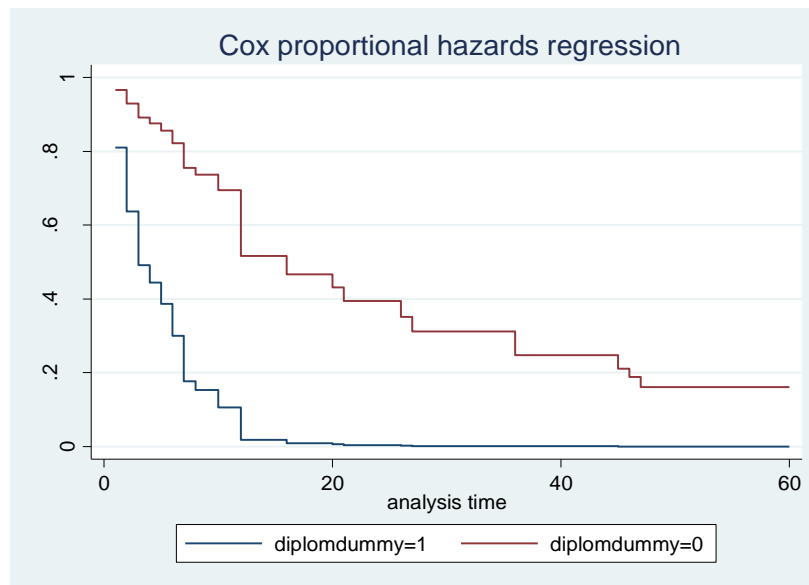


Figure 4 Survival plot for third party involvement through development means



**Figure 5 Survival plot for third party involvement through peace diplomacy**

The descriptive statistics above show different measures and activities that were undertaken by third party actors on an aggregate level. As Figure 1 shows, apart from diplomatic measures such as mediation, conciliation, and good offices, there are also unconventional means of involvement such as feasibility studies, financial aid, and projects. The diversity of tools used by third parties for river cooperation can reflect the nature of river disputes. The fact that a substantial proportion of third party activities comprise development types of involvement shows that third parties link river cooperation to the developmental needs of states. This is because river water is considered an economic resource that has utilitarian value and third parties seem to fully exploit this feature to create cooperative relationships. In addition, the diversity of third party actors also reflects the multidimensional aspects of river disputes. According to the descriptive statistics, it is IGOs such as UNDP, UN, as well as international development banks, that are the most frequently involved actors. The involvement of the OSCE, a security organisation, in river disputes shows that water is indeed presented as a security issue. Yet, the extensive involvement of development banks also shows that river disputes are dealt with via economic means.

In addition, other aspects of river disputes such as legal ambiguity and credibility problems are most likely dealt with through diplomatic means, conferences, seminars, feasibility studies, financial incentives, and various projects.

### **The effect of third party involvement on concessions in agreements**

Power imbalance, as shown in Table 1, also appears to be conducive to the emergence of agreements. Although it is possible that a dominant state coerces weaker states to cooperate, it is also possible that stronger states can create space for cooperation by giving more concessions to weaker states. It is not unusual for an economically stronger riparian state to give side payments to another party for cooperation. For instance, in the 1957 Mekong agreement, Thailand helped fund a hydroelectric project for Laos in exchange for a proportion of the generated power. South Africa helped to fund a diversion facility for Lesotho according to the 1986 Lesotho Highland Treaty. South Africa secured the right to drinking water for Johannesburg and Lesotho received all the power.

In this regard, an interesting finding from the ICOW (The Issue Correlates of War) dataset on river claims could complement my study. Before I proceeded to undertake my own data collection, I explored the existing ICOW data on river claims. While I did not ultimately use this dataset for research purposes, the findings regarding the concessions by stronger riparian states to weaker states and the role of third parties are worth discussion, given that my findings suggest that power imbalance is a strong predictor of the emergence of river agreements.

### *Description of ICOW data on river claims*

I have analysed data which includes information about attempts to manage or settle each ICOW claim through either peaceful or militarised techniques. This includes details of settlement attempts (such as the date, participants, and scope of the attempt), the outcome of the attempt (whether or not an agreement was reached, the scope of agreement if any, and whether or not the agreement was ratified and carried out by the claimants), and summaries of recent interactions over the claim. Please note that this dataset includes territorial claims, maritime claims and river claims for the Middle East, the Western Hemisphere and Europe. My study focuses on only river claims in the regions specified earlier.

### *Power preponderance, concessions in agreements and third party involvement*

I have explored the relationship between state power, concessions in agreements, and the effect of third party involvement. Overall, the results show that stronger states give 26% more concessions in agreements than weaker states. According to results displayed in Table 2 and Figure 6, third party involvement results in even concessions for both weak and strong states, while bilateral negotiations result in stronger states giving twice as many concessions as weaker states. Similar results hold true for dyads with a 3:1 advantage or disadvantage based on CINC (Composite Index of National Capability) (see Table 3). The finding that third party involvement results in even concessions compared to agreements reached via bilateral means may simply imply that third parties may get involved when riparian states cannot reach agreement via bilateral negotiations. The fact that stronger states give more concessions can explain why river agreements are reached in the first place, thus leaving out the cases where neither party agreed to concede. The even concessions in



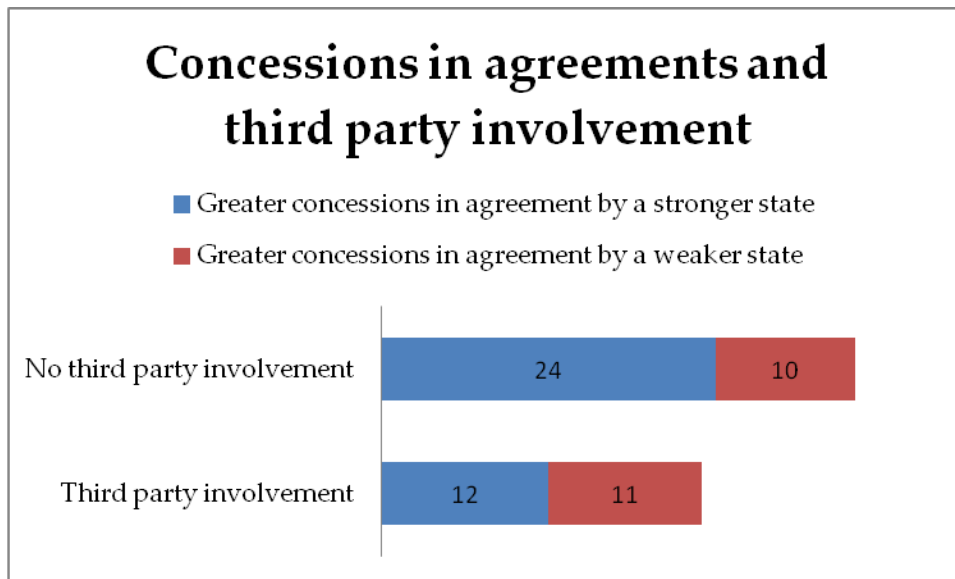
agreements that resulted when third parties got involved could be that third parties may have increased the size of the pie by providing financial or other incentives to make cooperation a “win-win” solution for all parties.

**Table 2 Concessions in agreements and the role of third parties**

	<b>Greater concessions in agreement by a stronger state (with any advantage in relative capability)</b>	<b>Greater concessions in agreement by a weaker state (with any disadvantage in relative capability)</b>
<b>Third party settlement</b>	12	11
<b>No third party settlement</b>	24	10
<b>Total</b>	36	21

**Table 3 Concessions in agreements (3:1 advantage in relative capability) and the role of third parties**

	<b>Stronger state concession (3:1 advantage in relative capability)</b>	<b>Weaker state concession (3:1 disadvantage in relative capability)</b>
<b>Third party</b>	11	5
<b>No third party</b>	17	5
<b>Total</b>	28	10



**Figure 6 Concessions in agreements and third party involvement**

## Occurrence of third party involvement in river disputes

### *States as third party actors*

The findings that explain the occurrence of third party involvement are important in many respects. Firstly, it helps to understand the factors that promote the occurrence of third party intervention in river disputes and brings forward some explanation as to why, and under what circumstances, third party intervention takes place. As indicated in Figure III, analysis of the distribution of states as third party actors shows that states from Western Europe are the most frequent third party actors, comprising 60%. Western Europe is followed by the USA comprising 17% of cases, Japan making up 9%, then by Canada making up 7%. Australia makes up only 1% of cases. There are also some other states that get involved on rare occasions; they comprise around 6% of states.

Western European states make up almost 60% of all third party states. It needs to be mentioned that Western Europe is presented as a region consisting of

many European countries, while other sections in the pie chart are individual states. It was not possible to include all European states as separate sections in the pie chart because this would have made the chart unviable. Nevertheless, this still reflects the dominance of Western European states as third party actors in the field. The explanation: Western European states are increasingly more concerned about environmental issues and are more likely to get involved and assist other states.

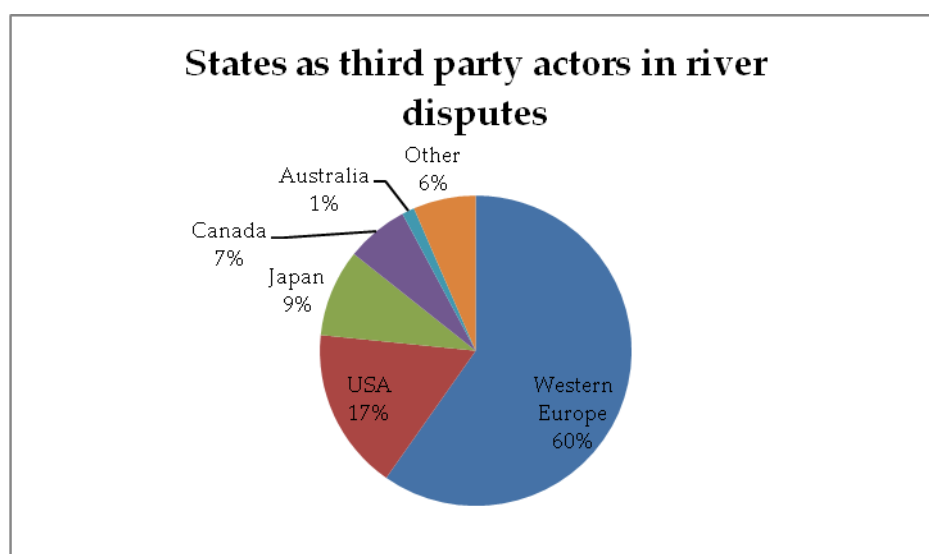


Figure 7 Pie chart of states as third party actors

### The effect of variables on the occurrence of third party involvement in river disputes

As indicated in Table II, hostile relationships with major western powers, along with the number of rivers and previous mediation efforts, have a significant effect on the occurrence of third party involvement. The negative coefficient relating to hostile relationships indicates that states which are hostile to major western powers are less likely to experience third party intervention in their river disputes. The strongest predictor is hostile relations with western powers with the significance level of p-value of 0.002 and the hazard ratio of .055. For

mediation to take place, the parties must be willing to accept the mediator and there should be a mediator which is willing to offer its services.

As proposed previously, the resolution of river disputes may require substantial resources and any potential third party actor should estimate the potential costs and its ability to bear such costs. Also, these descriptive statistics show that the majority of third party actors involved in conflict management of river disputes are international development banks, the World Bank, UN, IGOs, and western states (principal mediators). Third party actors who get involved in the resolution of river disputes are powerful third parties with resources. Potential minor third party actors may not wish to get involved due to their inability to bear such costs as well as the possible cost to their reputation, while powerful third parties are also cost sensitive and may only choose to get involved in cases that relate to their strategic interests. When one of the riparians is hostile to a major western power, it potentially limits the supply of third party actors willing to get involved.

Other frequently involved third party actors such as the World Bank and IMF are also believed to represent the interests of powerful Western nations. For example, Swedberg (1986) argues that the World Bank and IMF are indeed used by powerful Western nations to intervene in favour of free trade capitalism in the internal affairs of third world countries. This association of international financial institutions with Western powers also explains why states hostile to western powers are less likely to experience third party involvement in their river disputes. There will be fewer third party actors who will be willing to engage with such an outcast state. In addition, an outcast riparian state is also less likely to be open to engage with mediators they may perceive to represent western interests or bias.

The number of rivers that dyads share is a significant indicator with a p-value of 0.045 and a hazard ratio of 0.89 which explains whether riparian states experience third party assistance. It appears that the greater the number of rivers riparian states share, the less likely they are to experience the occurrence of third party involvement in their river disputes. When states share multiple rivers, a multitude of possible issues, as well as a multitude of opportunities, between riparian states may exist. None of the parties may be able to control the tap because both states may be upstream or downstream states in relation to the various rivers involved. This may reduce potential commitment problems so that states are able to reach bilateral solutions. Unlike riparian states that share one river, states that share several rivers have the option to utilise other rivers which may diffuse tension.

The “previous third party mediation” variable is also a significant predictor with a p-value of 0.016 and a hazard ratio of 3.17. Thus, if riparian states experienced mediation efforts previously, they are more likely to experience third party intervention again. This may imply that dyads which experience a river dispute are of strategic interest to third party actors. Previous mediation experience also may indicate that riparian states are more open to third party assistance. All other variables such as “upstream/downstream relationship”, “water availability”, “former colonial history”, “upstream hegemon position”, “conflict intensity” and “level of economic development” have no significant effect on the occurrence of third party involvement.

The study finds that contrary to my expectations, upstream/downstream relationships, the distribution of power, and an upstream hegemonic position do not necessarily explain or determine the occurrence of third party involvement in riparian conflicts. Even though upstream/downstream patterns may increase the cost of mediation, third party actors are prepared to intervene

when they have a strong strategic incentive to bear the cost and assist in resolving the dispute. The presence of a powerful upstream state does not necessarily prevent the occurrence of third party involvement, as the case concerning India and Pakistan illustrates.

Such factors as water availability, the level of economic development, and colonial history and conflict intensity do not play a significant role in the occurrence of third party intervention. Even though water scarcity was found to be linked to increased militarised disputes, there is no evidence that states that are water scarce may experience a higher level of third party involvement in their river disputes. Similarly, states that were former colonies are not necessarily more likely to attract third party involvement in their river disputes than states that were not colonised. The levels of economic development and levels of conflict do not play significant roles either. Rather, it is the third party's strategic interest in the resolution of disputes as well as the riparian states' openness to the international community, particularly the riparian states' relation to powerful Western states, which determines if the riparian states experience and expect third party assistance in managing riparian conflict.

**Table 4 Cox regression estimates of the effects of variables on the occurrence of third party intervention in river disputes**

Variable	Occurrence of third party involvement
Hostile relationship to major western powers	-2.850219 *** (.9369609) [.055]
Upstream hegemon	.2130589 (.1953146) [1.22]
Conflict intensity	.0535825 (.1424651) [.94]
Number of rivers	-.1282495* (.0733471) [.89]

Power preponderance	-.2328231 (.1653813) [.81]
Water availability	.0237241 (.1808348) [1.01]
Former colony	.4153256 (.2900891) [1.44]
Upstream/downstream relationship	.1722072 (.2083478) [.89]
Previous third party involvement	1.151753** (.4881548) [3.17]
Economic development	.0001106 (.0001355) [1.00]
Time at risk	872
Number of observations	524

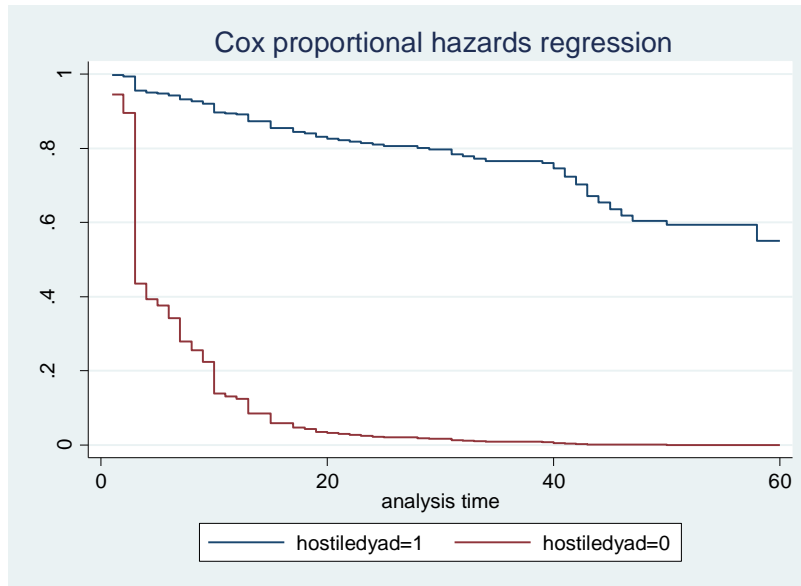
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Main entries are coefficients, standard errors are in parentheses, hazard ratios are in square brackets, and p-value)

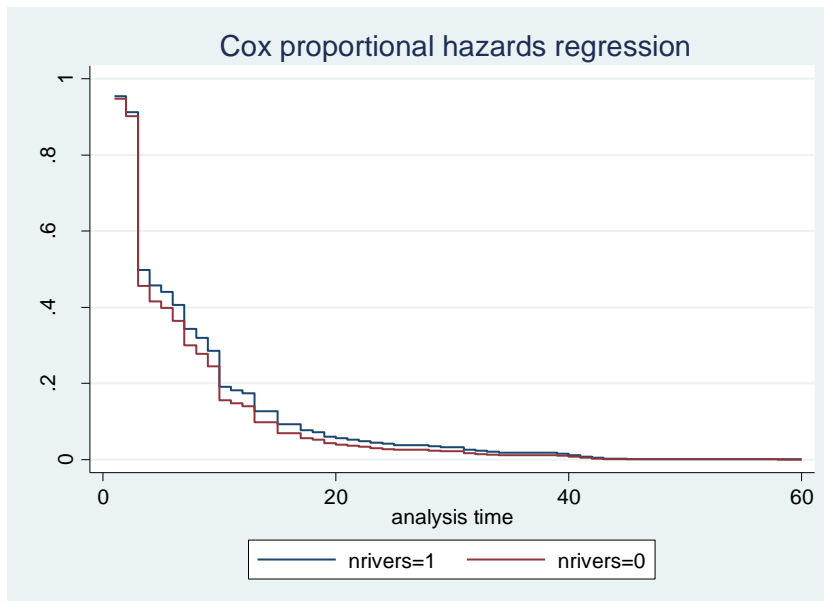
\*\*\*p<.01; \*\*p<.05, \*p<.1, one-tailed tests.

### *Survival plots*

Figure 8 demonstrates the survival plots for the dyads which are hostile to major Western powers. This plot presents graphically the probability of the occurrence of third party intervention by each point in time for dyads that are hostile to major Western powers and those dyads that are not hostile. Figure 9 presents the survival plots for the number of rivers and the survival rate is presented between cases having more than one river and cases with only one river. Figure 10 presents the survival plots for the occurrence of previous mediation between cases that experienced previous mediation and cases that experienced no previous mediation.

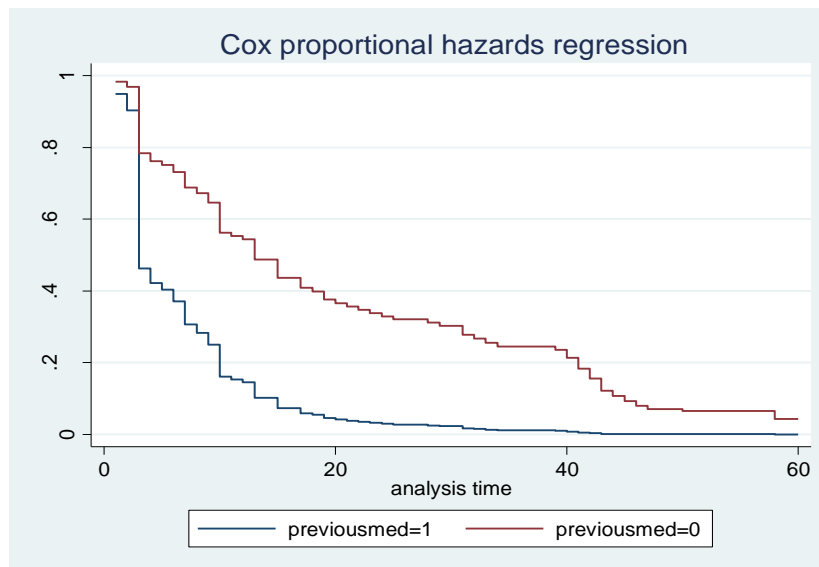


**Figure 8 Survival plot for hostile dyads**



**Figure 9 Survival plot for number of rivers**





**Figure 10 Survival plot for previous mediation**

## Conclusion

This Chapter provides the statistical findings. These descriptive statistics show different types of third party activities and the third party actors involved in river disputes. Some of the most frequently used techniques by third party actors are financial assistance and meetings and talks. As for the most frequently involved third party actors, they are IGOs, states, and international development banks. The statistical analysis explores the relationship between third party involvement and the emergence of agreements and shows that third party involvement significantly increases the likelihood of reaching river agreement along with power imbalances, while water scarcity decreases the likelihood of reaching river agreements.

As for the statistical analysis exploring the occurrence of third party intervention, the results show that hostility to major western powers and the number of rivers involved significantly reduces the occurrence of third party

involvement in river disputes, while states that experienced previous third party involvement are most likely to again attract third party involvement.

The findings of statistical analysis support the hypothesis that third party involvement increases the likelihood of reaching river agreements. The findings also reveal that third party intervention is most likely to occur in states which are strategically important to third party actors. Also, the greater the number of rivers they share, the less likely it is that they will experience third party involvement. This statistical analysis has provided a large picture of third party activities and third party actors, and confirmed the importance of third parties in the conflict management of river disputes, yet the specific mechanisms as to how and why all these activities contribute to the emergence of agreements, and how these activities address the transcendence problems, is still not clear. The next Chapter will discuss these mechanisms and I will analyse the role of third parties in river disputes in Central Asia.

# Chapter V The Role of Third Parties in Conflict Management of Riparian Disputes in Central Asia

## Introduction

The previous Chapter has shown that third party intervention increases the likelihood of reaching river agreements. In addition, the actions of third party actors have also been identified on a more aggregate level. However, the precise mechanisms and how and why third party actors and their actions promote riparian cooperation is yet to be explored. While the previous Chapter has addressed the question as to whether third party involvement increases the likelihood of reaching river agreements, this section aims to answer how and why third party actors increase the likelihood of reaching agreement. This Chapter aims to identify the causal processes and mechanisms at work that lead to reaching river agreements.

Most agreements were initially basin-wide during the beginning of their cooperation attempts, and later these were followed by bilateral agreements. This reflects the nature of relations between states over transboundary rivers. The nature of transboundary rivers requires basin-wide cooperation, yet at the same time each state attempts to regulate the usage of transboundary rivers on a bilateral basis by specifying the mechanisms of cooperation over the rivers.

This chapter draws on primary and secondary sources, with more emphasis on the former for the most recent events. Hydro relations between the four Central Asian (CA) states have been analysed chronologically, as well as through the transcendence framework. The study analyses events starting from the early 1990s after the collapse of the USSR, which resulted in these CA states becoming independent. This event also led to a change in the status of domestic

Soviet Union river basins which now became international basins, and so gave rise to disputes between CA states.

This Chapter will show that third party actors can increase the likelihood of reaching river agreements through providing financial incentives and capacity building, assisting with information provision and facilitating communication. These activities assist in shifting the focus from perceiving a water issue as a zero-sum security issue to being seen as a utilitarian positive-sum issue. The above-mentioned activities also help to clarify riparians' positions on a normative framework, and address information asymmetry and commitment problems.

Chapter V starts with a brief overview of the main transboundary river-related problems in Central Asia to give the reader a quick insight into the existing issues in the region. It is then followed by an overview of each CA state and hydrological information on shared basins. In the next section, the processes that led to river agreements are traced in chronological order. It is only in the next three sections that the hydro-relations of CA states and the role of third parties are analysed through the prism of the transcendence framework.

## **Brief overview of hydro-relations in Central Asia**

Environmental hazards around the Aral Sea and conflicts around transboundary river water management are ongoing problems in Central Asia (CA) and are a legacy they inherited from the Soviet Union. After the collapse of the USSR in 1991, there were concerns that political battles, mismanagement of water and the securitisation of 'water' issues in the region would cause violent interstate conflict. (Smith 1995; Panarin 1994; Wolfson 1990).

However, evidence shows that violent interstate conflict over water in Central Asia has not occurred, but instead CA states have managed to cooperate in

relation to transboundary rivers to date. International organisations and donors entered the region with the agenda of tackling environmental problems and facilitated cooperation among CA riparian states so that those CA states were able to put in place several transboundary river agreements.

There are two major problems that CA states are attempting to tackle regarding transboundary river waters. First, is the environmental disaster of the Aral Sea due to the expansion of irrigation fields. Development ambitions of the Soviets encouraged expansion of the cotton fields in Uzbekistan so that the Syr Darya and Amu Darya Rivers flowing across CA states and discharging into the Aral Sea, have been diverted to these irrigation fields. The Aral Sea started shrinking in the 1960s, and by the 1990s, it had shrunk to a third of its former size causing one of the world's worst man-made environmental disasters (UNEP 1992).

After the Soviets realised the extent of the environmental disaster, they established a grand plan to divert the Ob River from Siberia to save the Aral Sea. However, the collapse of the USSR halted this plan and the CA states were left to deal with this problem on their own.

The second problem is related to transboundary river management. The first issue is related to the timing of water release from water reservoirs from upstream states to downstream states. The second issue is related to recent disputes over the building of new dams on these transboundary rivers. After the collapse of the USSR, the Aral Sea and Chu-Talas basins became international, and each state in CA has started pursuing its own national interests. Kyrgyzstan<sup>33</sup> and Tajikistan are the upstream countries, whereas Uzbekistan and Kazakhstan are the downstream countries. The Soviet Union constructed a massive hydroelectric facility at Toktogul on the Naryn/Syrdarya in Kyrgyzstan and the Nurek Dam on the Vakhsh River in Tajikistan. The

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<sup>33</sup> Kyrgyzstan and Kyrgyz Republic are used interchangeably. Kyrgyz Republic is often used in official documents and agreements.

Soviets built the Toktogul reservoir to provide a sufficient water supply to the downstream countries of Uzbekistan and Kazakhstan for irrigation purposes during summer. As compensation, gas and coal were supplied to Kyrgyzstan and Tajikistan from downstream countries during winter (Sojamo 2008). However, after the USSR dissolved, downstream Uzbekistan and Kazakhstan started charging international prices for oil and gas they provided for upstream states. Due to their inability to pay for gas and oil, the upstream states started storing water during summer in order to release it during winter for electricity production. In addition, in order to gain energy independence, upstream Kyrgyzstan and Tajikistan resumed plans to complete unfinished dam projects on their rivers. These hydro development plans and a new regime of water release have led to disputes between the riparian states in CA.

## **Brief overview of Central Asian states**

### *Uzbekistan*

Uzbekistan is the most populous among the four CA states with a population of 29,559,100 (State Committee on Statistics of Uzbekistan 2012). It borders Kyrgyzstan and Tajikistan to the east, Kazakhstan to the west and north, and Afghanistan and Turkmenistan to the south. This country is landlocked, with an area of 447,400 square kilometres, which makes it the second biggest country among the CA states by area. About 10% of its area is dedicated to agriculture, mainly for producing water intensive crops such as cotton. In 2011, Uzbekistan ranked as the seventh largest producer and fifth largest exporter of cotton in the world (National Cotton Council of America 2012). Almost 60% of the population lives in densely populated rural areas (CIA 2012). The economy's focus on cotton dates back to Soviet times, when Soviet policy makers prioritised the production of cotton and its export above other crops, which led to the diversion of rivers to irrigate the vastly expanded cotton fields.

Such policies led to the shrinkage of the Aral Sea. Apart from cotton, Uzbekistan is rich in gold, uranium, and natural gas (CIA 2012).

Similar to other CA states, Uzbekistan became part of Tsarist Russia in 1920 and in 1924 became one of the Soviet Socialist Republics. Uzbekistan declared its independence in 1991 after the USSR had collapsed.

### *Kazakhstan*

Kazakhstan is the ninth largest country in the world by land area with its territory of 2,727,300 square kilometres, and is the largest landlocked country in the world (Agency of Statistics of the Republic of Kazakhstan 2012).

Kazakhstan borders Russia, China, Kyrgyzstan, Uzbekistan, and Turkmenistan, and also borders a large part of the Caspian Sea. The population is about 16.8 million (2012 estimate) (Agency of Statistics of the Republic of Kazakhstan 2012).

Kazakhstan possesses an abundant supply of fossil fuel reserves and has the 11th largest proven reserves of oil and gas in the world. Oil production and mineral extraction constitute about 57% of the nation's industrial output (International Crisis Group 2007). Agriculture also plays an important role in Kazakhstan's economy, accounting for 5.2% of Kazakhstan's GDP in 2011 (CIA 2012). Some of the most important agricultural export commodities are grain, livestock, and wheat. Kazakhstan became part of the Russian Empire in the 19th century and later, in 1920, became an autonomous republic within the Soviet Union. After the USSR dissolved in 1991, Kazakhstan declared its independence on December 16, 1991.

### *Tajikistan*

Tajikistan is the smallest country in Central Asia by area with a population of about 7,768,385 (CIA 2012). Almost 90% of its territory comprises mountains. It

borders China to the east, Uzbekistan to the west, Afghanistan to the south, and Kyrgyzstan to the north. Tajikistan also became part of the Russian Empire in the 19<sup>th</sup> century. In 1929, Tajikistan became one of the republics of the USSR after first being an Autonomous Soviet Socialist Republic within Uzbekistan. Civil war broke out in 1992 after the collapse of the USSR, lasting for five years (UN 2012).

Tajikistan was already the least developed republic in the Soviet Union, and it is still the poorest country in Central Asia. Civil war and economic difficulties in the early 1990s prevented Tajikistan from undertaking development works on transboundary rivers.

### *Kyrgyzstan*

Kyrgyzstan is a landlocked and mountainous country in Central Asia. It borders Kazakhstan on the north, China on the east, Tajikistan on the southwest, and Uzbekistan on the west. Kyrgyzstan has a population of 5.5 million (National Committee on Statistics of Kyrgyz Republic 2012). Due to its mountainous landscape only 8% of its land is used for cultivation and crop production. The climate in Kyrgyzstan can largely be described as dry continental but yet it varies depending on the region. Kyrgyzstan became part of Tsarist Russia in 1876 and became one of the Soviet Republics in 1936. In August 1991 Kyrgyzstan became an independent republic.



## Geographical features of the Amu Darya, Syr Darya and Talas-Chu basins

### *Amu Darya and Syr Darya basins*

There are two main rivers in the region: the Amu Darya and Syr Darya. However, the basin contains the water catchment areas of the following rivers: Amu Darya, Syr Darya,



Picture 1 Syr Darya and Amu Darya basins. Source: (Micklin 2007 p.48)

Zerafshon, Kashkadarya, Kafirnigan, Murghab,

Tejen, Turgai, Sarysu and Chu (ICAS 1996). The largest river in the region is the Amu Darya which drains a catchment of 692 300 km<sup>2</sup> (O'Hara 2000). The tributaries of the Amu Darya originate in Tajikistan and Afghanistan forming the Pyandz at the Tajik-Afghan border, which is joined by the Surkandarya, finally forming the Amu Darya. The Amu Darya flows across Tajikistan, Uzbekistan and Turkmenistan and back to Uzbekistan (O'Hara 2000).

The second largest river, the Syr Darya, originates in Kyrgyzstan. There are two main tributaries: the Naryn River which is fed by more than 700 glaciers in the Tien Shan mountains, and the Kara Darya which originates in the Alay Mountains. These two main tributary rivers merge in Uzbekistan and form the Syr Darya. The Syr Darya flows into Tajikistan and then to Uzbekistan, finally entering Kazakhstan before discharging into the Aral Sea (see the Picture 1). Compared to the Amu Darya, the water discharge of the Syr Darya is smaller

(WARMAP 1996, cited in O'Hara 2000). Together, these rivers make up almost 90% of usable water in the Aral Sea basin. More than 55.4% of the water is derived from Tajikistan and 25.3% comes from Kyrgyzstan, accounting for almost 80% of all water in Central Asia (O'Hara 2000).

The Aral Sea Basin includes the catchment and drainage areas of the Syr Darya and the Amu Darya which flow and drain to the Aral Sea and is spread across five Central Asian countries and parts of Afghanistan and northern Iran. The water inflow into the rivers mainly comes from surface runoff; the mean annual flow of the Amu Darya is 69.5 cubic kilometres; the Syr Darya's annual flow is 37 cubic kilometres (Elhance 1997). The total area of the basin (Afghanistan, Iran and China not included) is about 158.5 million hectares (Dukhovny and Sokolov 2003). The Aral Sea was the fourth largest lake in the world before 1960. It started shrinking after the 1960s, mainly due to major transfers of river water for irrigation (Elhance 1997). The Amu Darya is the biggest river in the region in terms of water availability and the Syr Darya is the longest (Dukhovny and Sokolov 2003).

### *The Chu-Talas basin*

The Chu-Talas basin is formed by three main rivers: the Asa, the Chu and the Talas. Almost 80% of the flow from these rivers is derived from within the territorial boundaries of Kyrgyzstan



**Picture 2 Chu-Talas basin. Source: UNEP/DEWA/GRID-Europe 2007**

by seasonal snowmelt from the mountains and by glaciers (Wegerich 2008). The total volume of water in the basin is estimated to be about 1.5 km<sup>3</sup> ; the river is 661 km long and its watershed is 52,700 km<sup>2</sup> (Wegerich 2008).

The Chu River is 1,186 kms long; 336 kms run through the territory of Kyrgyzstan and 850 kms through Kazakhstan. As for the Talas River, it is formed by the confluence of the Karakol and Uchkosha. The river is 661 kms long, 453 kms of which lies within the Kazakh territory of the Jambul region.

The main water reservoir on the Talas River is the Kirov reservoir in Kyrgyzstan, built during the Soviet era for the purpose of controlling the flow of the Talas River for the irrigation needs of downstream Kazakhstan (Wegerich 2008).

#### *Water availability*

According to international indicators of water scarcity of a limit of one thousand m<sup>3</sup> per capita<sup>34</sup> (1993), none of the CA countries come close to this limit (see Table 6). However, the degree of vulnerability to water shortage can be measured in various ways. For example, another indicator measures the dependency of a country on exogenous water resources. In this regard, the distribution of water varies considerably between countries. Upstream countries Tajikistan and Kyrgyzstan have an abundance, with endogenous water resources, while the availability of local water in downstream Uzbekistan (459m<sup>3</sup>) and Turkmenistan (304m<sup>3</sup>) falls well below the minimum threshold, making them dependent on water resources originating beyond their political boundaries (Kloetzli 1997, p.421).

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<sup>34</sup> 1,000m<sup>3</sup> is the minimum needed to support the quality of life in a moderately developed country

**Table 5 Annual water availability, 1991 (m<sup>3</sup> per capita)**

Country	Total	Endogenous
Uzbekistan	5,215	459
Turkmenistan	18,847	304
Kyrgyzstan	11,080	11,080
Tajikistan	17,731	8,846
Aral Sea basin (Central Asian part)	3,565	2,971

Source: adapted from Smith (1994, p.60-61).

The largest percentage of water in CA goes to agriculture. Household and industry make up only a very small percentage of total water use. For example, 75% of water in Kazakhstan and 92% of water in Uzbekistan is used for irrigation (Abdullayev et al. 2010).

Another measure can be provided by the virtual water flows theory (Chapagain and Hoekstra 2003; Fraiture et al. 2004). Looking at the grain trade, Kazakhstan exports water (around 5 to 15km<sup>3</sup> annually) and Tajikistan, Kyrgyzstan, Uzbekistan and Turkmenistan each import about 5km<sup>3</sup>. However, Uzbekistan and Turkmenistan have changed from importers to exporters of wheat grain in recent years. If we look at cotton production, the region exports 60km<sup>3</sup> of water annually with Uzbekistan exporting about 30km<sup>3</sup> of water (Abdullayev et al. 2010).

## **River agreements in Central Asia and the role of third parties**

Since the 1990s, CA states have been able to cooperate over transboundary waters and have signed three main international agreements in 1992, 1993 and 1998 (Wouters et al. 2007). There was also a bilateral agreement signed in 2000 between Kyrgyzstan and Kazakhstan on the Chu-Talas basin. Another bilateral *Agreement on joint use of fuel, energy and water resources in 2000 and 2001* between Kyrgyzstan and Uzbekistan regulates the exchange of water from the Toktogul water reservoir for energy deliveries which can be considered as a subsequent agreement of the 1998 regional agreement. The agreements related to water resources in Central Asia, particularly transboundary rivers, are either regional, subregional or bilateral and non-binding soft law conventions.

There are also some sub-regional instruments which cover water resources such as the 1998 *Agreement on cooperation with respect to environmental protection and rational use of natural resources* (Kazakhstan, Kyrgyzstan and Uzbekistan) and the 1996 *Agreement on the use of fuel and energy and water resources, construction and operation of pipelines in the Central Asian region* (Kazakhstan, Kyrgyzstan and Uzbekistan). There are some regional instruments, such as the 1999 Agreement on the status of the International Fund for Saving the Aral Sea (IFAS) and its organisations, which define the legal status and responsibilities of regional institutions dealing with managing and protecting water resources in Central Asian States (UNECE 2010).

It also appears that the 2006 *Framework Convention for the protection of the environment for sustainable development in Central Asia* mostly deals directly with water resources. However, only three countries (Kyrgyzstan, Tajikistan and Turkmenistan) signed the Convention and it is not yet in force. The framework

that the Convention provides is of a general nature and provides a legal basis for long term cooperation by CA states on a wide range of environmental issues (UNECE 2010).

There are some other legal instruments such as decisions by Heads of State on establishing or modifying the institutional mechanisms and cooperation bodies for managing and protecting the region's water resources, yet these are not agreements. Nevertheless, these decisions have changed some provisions of previous agreements<sup>35</sup> (UNECE 2010). However, these legal instruments will not be analysed in this study as they are not formal river agreements but rather soft law instruments. In this study, the three main regional agreements of 1992, 1993 and 1998 and one bilateral agreement are analysed.

### **Agreement of 1992 and the role of third parties**

The first agreement was the *Agreement on cooperation in joint management, use and protection of water resources of inter-State sources* signed by Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan and Turkmenistan in 1992. The 1992 Agreement established the Inter-State Commission for Water Coordination (ICWC) and subordinated Basin Water Organisations "Syrdarya" and "Amudarya" to the ICWC. The section below will provide an analysis of the processes that led to reaching the agreement in 1992.

After the disastrous environmental consequences of river transfers to cotton fields, the Soviet government decided to form a single water management

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<sup>35</sup> For example, the decisions of Heads of State on establishing or modifying the institutional mechanisms and cooperation bodies: Decision on "Founding the International Fund for Saving the Aral Sea" of January 4, 1993; and Decision on "Restructuring the International Fund for Saving the Aral Sea" of February 28, 1997. The "institutional" acts also include a variety of "Regulations". For example, Regulations of IFAS; Regulations of the Executive Committee of IFAS etc; The Declarations and statements of the Heads of State of Central Asia can be considered as "soft law" instruments and these include the following: *Nukus Declaration of Central Asian States and International Organizations on Sustainable Development of the Aral Sea Basin (1995)*; *Ashgabat Declaration (1999)*; *Tashkent Statement (2001)*; *Dushanbe Declaration (2002)*; *Joint Statement of the Heads of State - Founders of IFAS (2009)* (UNECE 2010).

organisation for the whole basin in 1982. The political liberalisation reforms in the late 1980s prompted the rise of nationalist movements which called upon the Soviet regime to tackle the environmental mismanagement of the Aral Sea. In 1987, the Ministry of Water Resources of the USSR approved the framework for the single water management organisation. Initially, two Basin Water Organisations (BWO) were set up: BWO "Amu-Darya" with its headquarters in Urgench, and BWO "Syr- Darya" in Tashkent (Dukhovny and Sokolov 2003). These two BWOs were set up to manage allocation and control over hydrotechnical installations and manage resource conflicts efficiently (Kloetzli 1997).

With the rise of grassroots movements within the USSR and the relative opening of the Soviet Union, Western NGOs and IOs sought to contact Soviet environmental groups and scientists (Weinthal 2002). There was increasing interest from IOs and the international community in the Aral Sea basin disaster, which was a precursor for their later intervention. CA states also realised the need for international involvement as they believed that the disaster was caused by Soviet policy makers (Weinthal 2002). As a result, in January 1990, the UNEP signed an agreement with the USSR for a two-year program for developing a rehabilitation plan for the Aral Sea (Weinthal 2002, p.113). UNEP, together with a Soviet scientific group conducted several fact-finding missions and developed an action plan, but the breakup of the USSR halted the program. Nevertheless, it was the first official attempt by an IGO to intervene in the Aral Sea basin. This first effort was primarily concerned with technical, economic and scientific approaches to solve the Aral Sea problem rather than being political in nature (Weinthal 2002).

After the USSR dissolved, the Aral Sea basin became divided by new national borders and the rules set up by the Soviet regime were no longer relevant or considered desirable by CA states. It also gave an opportunity for various third

party actors to enter the Central Asian countries<sup>36</sup>. One of the major donors which became seriously involved was the World Bank (WB). CA states asked the WB for assistance to tackle the problems of the Aral Sea and the management of transboundary rivers (Kirmani and Le Moigne 1997). Apart from the environmental issues related to the Aral Sea, the problems related to water release from upstream states to downstream states also emerged. During the Soviet period, several water storage facilities were constructed to manage the rivers in Central Asia. The Toktogul reservoir was constructed on the Naryn river in upstream Kyrgyzstan with a total storage capacity of 19km<sup>3</sup>. Its purpose was to provide water for irrigation and hydroelectric power (Rasulov and Myradaliev 1990, cited in O'Hara 1990). Another water reservoir, Nurek, was constructed on the Vakhsh River in Tajikistan with a capacity of 10.5 km<sup>3</sup> (Zonn and Glantz 1993, cited in O'Hara 1990). The reservoirs were built to provide water for irrigation, flood control, flow regulation and hydroelectric power production. Yet, the main purpose of these reservoirs was to provide water for irrigation to downstream states during summer, and therefore upstream states were compensated by fuel, gas and oil to meet their energy needs during winter. The collapse of the previous water management arrangements, uncertainty over future arrangements, and nationalist movements created tension between states and disputes arose as to how the transboundary rivers ought to be managed.

In order to avoid potential interstate conflict around transboundary rivers, third parties such as the World Bank and other international organisations pressured CA states to quickly sign an agreement in 1992 on water allocation (Heltzer 2002). The essence of agreement was that they recognise the unity of the Aral basin and that the waters of the basin be used on the principle of

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<sup>36</sup> Weinthal (2002) for example, identified the following actors before 1998: World Bank, ADB, small western NGOs, EU, the UN, NATO, USA, Germany, Israel, the Netherlands, Japan, and Switzerland. NGOs involved at that time were: the Dutch organisation NOVIB, the Aral Sea International Committee, ISAR, Medecins Sans Frontieres (Doctors Without Borders), Mercy Corps International, Crosslinks International, and Farmer to Farmer (Winrock International).



equality. The agreement also envisaged restoring the waters of the Aral Sea in the future. Despite criticism that the agreement preserved the Soviet-era water allocation system, this agreement probably avoided a stalemate and facilitated the smooth transition of CA Soviet republics into sovereign powers. Weinthal (2002) also mentions that this first agreement was an interim agreement to fill the void left after the collapse of the USSR.

In addition, following the signing of the agreement on February 18, 1992, the ICWC was also set up. According to this first agreement, the previous water usage system was retained for annual planning for this new Commission until the new regional and national strategy and principles could be developed (Dukhovny and Sokolov 2003). This Commission incorporated the two organisations (Amu-Darya and Syr-Darya BWOs) and the Scientific-Information Center which were setup during Soviet times. The main purpose of the ICWC was to assist CA riparian states with water allocation, monitoring, and assessments of proposals (Dukhovny and Sokolov 2003, p.13). The governments of CA countries appointed five members to the Commission who had equal rights and responsibilities, and who could implement the decisions of the Commission upon reaching consensus.

Thus, the agreement of 1992 was an interim agreement, where third party actors played a somewhat minimal role assisting with the administrative side of the agreement due to the urgency of the issue. Yet, third parties were instrumental in encouraging the parties to sign an agreement to start the negotiations on possible assistance they could provide with the Aral Sea basin and the management of transboundary rivers. Riparian states all realised that disagreement over water at times of political volatility can be potentially dangerous for all parties. In addition, there was the potential to get some financial assistance and recognition from the international community. For all parties, cooperation was a win-win situation. With the collapse of the USSR,

there was a legal void that had to be filled. Uneven water distribution between upstream/downstream states, and the potential ability of upstream states to control the water flow presented potential grounds for disputes. Therefore, riparian states quickly signed an agreement to fill the void until the new arrangements could be negotiated.

### **Agreement of 1993 and the role of third parties**

The 1993 *Agreement on joint action to address the problem of the Aral Sea and surrounding areas, environmental improvement and ensuring the socio-economic development of the Aral Sea region* (the signatories are: Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan) provides the general basis for regional environmental cooperation in CA. The agreement “calls for rational use of the scarce land and water resources of the Aral Sea Basin, maintenance of adequate water quality in rivers, reservoirs and underground sources, and guaranteed water inflow into the Aral Sea” (UNECE 2010, p.9). This Agreement was concluded for a ten-year period with the possibility for extension for a similar time period. This agreement contributed to improving the discipline of water use in the basin and developed a legal framework (UNECE 2010). The 1993 Agreement also established the Inter-State Council on the Aral Sea Basin.

After the 1992 agreement was signed, the World Bank conducted several missions during 1992 to fully understand the Aral Sea problem and the actions that would need to be taken. The resulting proposal was different from the solutions desired by CA states. The report emphasised that the initial idea of diverting water from the Ob River, along with a significant reduction of water allocation, was not a feasible solution. Instead, they offered a regional program as well as assistance to national programs to tackle the Aral Sea crisis which

required regional cooperation (Kirmani and Le Moigne 1997). One of the basic strategies of the Bank was to promote regional cooperation and sustainable development (Kirmani and Le Moigne 1997). The proposal suggested that the WB could assist with stabilising, rehabilitating the disaster zone, and management of shared rivers through building institutions to implement the suggested programs (Kirmani and Le Moigne 1997, p.11).

Kirmani and Le Moigne (1997) mention that the representatives of the CA states were rather surprised by this proposal, despite their awareness of the Bank's view. The WB stressed the importance of cooperation and joint efforts and it promised to mobilise the donors' financial assistance. Representatives of the CA states requested a few hours of recess before they made their decision. All five republics accepted the proposal. However, they also requested that the option for the diversion of water remain open.

The World Bank's investigation also concluded that the agreement of 1992 was not sufficient to prevent potential conflicts in the region in light of the importance of fresh water to regional economic development (World Bank 1993). The Bank's director and Vice President negotiated directly with the Heads of the Republics about the potential for future cooperation (Kirmani and Le Moigne 1997). In addition, the World Bank along with the EU, the United Nations Development Program (UNDP) and US Agency for International Development (USAID), also undertook various conferences and working groups including representatives of different countries and water sectors (Elhance 1997). The WB consequently made it clear that unless there was a new agreement compliant with the principles of water law<sup>37</sup> and the establishment of an international water basin institution, financial aid would not be provided

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<sup>37</sup> Four of the principles of international water law are to inform and consult with water-sharing neighbours before taking actions that may affect them, to regularly exchange hydrological data, to avoid causing substantial harm to other water users, and to allocate water from a shared river basin reasonably and equitably. For a discussion of international water law, see (McCaffrey 1993).

(Weinthal 2002). In response to this condition, CA heads of states met in Qyzlorda in Kazakstan on March 26, 1993 and signed a new agreement.

Following this 1993 agreement, generous financial injections became available for water-related projects. International organisations and development banks such as the World Bank, UNDP, EU Program of Technical Assistance to the CIS (TACIS), and USAID helped to bring the international community's attention to the Aral Sea crisis (Sievers 2002). Since 1993, the ICWC in conjunction with the IBRD (International Bank for Reconstruction and Development), have developed seven programs which include 19 projects. The first lot of these immediate projects were approved by the heads of states on 11 January 1994 and were presented to the donors' meeting in Paris on June 23-24, 1994 (Weinthal 2002). The donor meeting was organised with the assistance of the WB, UNDP and UNEP with the aim of raising funding for the Aral Sea Basin Program (Weinthal 2002). During this meeting the donors approved the "Program of Concrete Actions," which had a total cost of US\$41 million (Weinthal 2002).

Donor countries and international agencies promised to finance the proposed projects. One of the first steps was to build a regional organisation to promote regional cooperation in the management of transboundary river waters. Since the agreement was signed, the WB has worked closely with CA riparian states to develop the Aral Sea Basin Assistance Program (ASBP). This project was planned to be undertaken over 15-20 years with the initial budget set at US\$250 million, which was further increased to US\$470 million (World Bank 1998, p.9). The main goals of the ASBP were to implement the strategies suggested by the WB's 1992 proposal (Heltzer 2002). The program had a long-term perspective and involved three phases with the last stage continuing until 2025 (Weinthal 2002).

In line with the ASBP program, CA riparian states established two institutions in 1993 with the encouragement and support of the WB. These two organisations (Interstate Council for Addressing the Aral Sea Crisis (ICAS) and the International Fund for the Aral Sea (IFAS) were set up to obtain WB assistance, as well as to fulfill the ASBP's agenda (Elhance 1997). The ICAS was set up for program coordination and the IFAS was set up for raising and controlling funds (Dukhovny and Sokolov 2003). The ICAS was supposed to be the leading management organisation responsible for sharing and management of water among CA riparian states. This organisation also required CA member states to allocate 1% of their budget annually towards saving the Aral Sea (Elhance 1997). ICAS consisted of 25 senior officials from five CA countries that convened twice a year (World Bank et al. 1994).

Since the first meeting of 1993, the heads of five CA countries have met annually. However, there has not been a strong financial commitment to support the IFAS (Kloetzli 1997). This was partly because CA states were facing serious economic challenges in the 1990s due to the collapse of the USSR, and faced difficulties in meeting their financial obligations to support the IFAS. In addition, the IFAS could not raise the required funds because each state defined its own scope of work and allocated the funding towards these works without any involvement of the IFAS (Dukhovny and de Schutter 2011). Finally, the IFAS slowly became a Kazakhstan- dominated organisation (Dukhovny and de Schutter 2011).

Later, the ICWC became a subdivision of the Interstate Council for the Aral Sea (ICAS) (Kloetzli 1997). In 1997, these two organisations (IFAS and ICAS) were merged under the name of IFAS. The president of one of the five member states was nominated to be the chairman of the IFAS for a two-year term, while the board members of the IFAS were deputy prime ministers of five CA countries (Dukhovny and Sokolov 2003). The main objectives of the IFAS Executive

Committee were to ensure the implementation of decisions and projects on the Aral Sea, raising and allocating funds, and coordinating and facilitating the activities of relevant branches (Dukhovny and Sokolov 2003, p.15).

Since the 1993 agreement was supposed to be compliant with the principles of international law, which required a regular exchange of hydrological data, participants agreed to create a common information system. Given the upstream/downstream relationship of riparian states, access and exchange of information was seen to be crucial for maintaining cooperation. Therefore, the next important measure after the setting up of the regional organisation, was the project aimed at increasing the capacity for obtaining reliable information and its exchange. The ASBP program started with the implementation of the EU "WARMAP" project and the World Bank's "Principal Provisions of Water Strategy of the Aral Sea Basin" (Dukhovny and Sokolov 2003).

Article III of the agreement also stipulated that Russia would participate in the Interstate Council work as an observer in addressing the Aral Sea crisis and the rehabilitation of the disaster zone. It was also mentioned that Russia would provide the required financial and technical assistance for the water supply system, as well as providing assistance in the scientific and technical spheres, the designing of projects of regional significance, and in the provision of expert services and the training of specialists. The involvement of Russia was necessary from a technical as well as from a political perspective. These four CA states still needed the expertise and assistance of Russia, since they were once part of the former USSR. However, Russia itself was in a dire economic situation in the early 1990s and further analysis shows that Russia did not play any significant role in transboundary river management in the 1990s.

## **Agreement of 1998 and the role of third parties**

The intergovernmental *Agreement on the use of water and energy resources in Syrdarya basin* was signed in 1998. The signatories were: Kazakhstan, Kyrgyzstan, and Uzbekistan. Tajikistan was an observer, but was included in the agreement in 2000. The agreement stipulated that water from the water reservoirs of the Naryn-Syrdarya cascade should be released during the irrigation season in exchange for energy supplies. The main objective of this agreement was to set up a scheme for water and energy exchange and hence the scope of the agreement was narrow. The Agreement was valid for a five-year period with the possibility for automatic extension for a further five-year period.

As mentioned earlier, the upstream water reservoirs were built with the purpose of providing water for irrigation for downstream states, and therefore upstream states were compensated with fuel, gas and oil to meet their energy needs during winter. However, after the collapse of the USSR, downstream states had stopped providing free energy deliveries for water, and started selling gas and fuel according to world prices. Upstream states started utilising dams to produce hydro-electricity during winter and storing water during summer. Yet, downstream states expected that water reservoirs would continue to work to serve their irrigation needs. Because all previous agreements were more of a general nature, they did not address the specific issue of water release from upstream states to downstream states. This was one of the major issues leading to disputes. Therefore, disagreements over water usage from water reservoirs still existed.

The United States Agency for International Development (USAID) therefore set up a program which focused on the Syr Darya Basin, specifically, the Toktogul

dam and reservoir, the storage facility currently owned by Kyrgyzstan. USAID also funded the Environmental Policy and Technology project that lasted from 1993 to 1998. This project also aimed to improve the supply of drinking water in the Amu Darya delta, assisted in the development of water policies and agreements, and provided advice to riparian governments on water management issues (Micklin 1998). As a result of this program, the agreement of 1998 was signed, where upstream Kyrgyzstan guaranteed supplies of electricity and release of water from Syr Darya to the downstream countries of Uzbekistan and Kazakhstan for their cotton fields. In return for water release during summer, a supply of coal and gas was promised by downstream states. Prime ministers from Kazakhstan, Uzbekistan and Kyrgyzstan (with observers from Russia and Tajikistan) met in March 1998 with the aim of achieving a system of trade for natural resources (Vinogradov and Langford 2001). Six documents were signed to establish a consortium on hydro-energy resources. Kazakhstan and Uzbekistan promised to barter coal and oil for water releases from the upstream states of Tajikistan and Kyrgyzstan (Vinogradov and Langford 2001).

It is believed that USAID promoted the establishment of a barter agreement in 1998 (Lange 2001; Weinthal 2001). There was an incentive for CA states to sign, because, following this agreement, USAID launched the SPECA program (United Nations Special Program for the Economies of Central Asia) in 1998 with the aim of strengthening sub-regional cooperation in Central Asia (Wegerich 2008). This program also aimed to assist them in enhancing cooperation in CA and integration into the world economy (Libert 2008a). In 2001, USAID started a new Natural Resource Management Project which lasted for five years and assisted with the management of water, energy and land (Micklin 2004).



In addition, other actors such as the World Bank, the United Nations Development Program (UNDP) and the Swedish International Development Agency (Sida) established the Global Water Partnership (GWP) in 1996 with the aim of bringing parties together for dialogue (Guterstam 2008). The WB played a cooperative/advisory role, while IFAS managed the project which lasted from 1998 to 2003. As a result, in June 2008, the five Country Water Partnerships (CWPs) of the GWP CACENA region (Armenia, Georgia, Kazakhstan, Kyrgyzstan and Tajikistan) received formal accreditation by the GWP Global Secretariat. This accreditation implies that member states abide by the main values of GWP such as inclusiveness, openness, transparency, accountability, tolerance, equity, and solidarity (Guterstam 2008).

It is worth mentioning that Article 2 of the 1998 agreement stipulated that the parties should harmonise ecological laws, interstate normative and legal regulations in the area of environmental protection, and the use of natural resources. Despite previous efforts to make the agreement of 1993 compliant with international law, legal ambiguity still existed, leading to disagreements. For example, the argument around whether to define their rivers from an “absolute sovereignty” or “absolute integrity” approach was a stumbling block during the Nukus meeting. In September 1995, the UN organised an international conference in Karakalpakstan where the Presidents of the CA states called for international assistance to tackle the problems of the Aral Sea in their “Declaration of Nukus” (Kloetzli 1997). This conference brought all parties together and helped CA states agree on the need to tackle environmental and water problems cooperatively. Despite all four CA states pledging to conform to relevant international conventions<sup>38</sup> during this meeting, only Kazakhstan and Uzbekistan ratified the UNECE Water Convention, while the two upstream states, Kyrgyzstan and Tajikistan, did not

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<sup>38</sup> The UN Convention to Combat Desertification, the UN Framework Convention on Climate Change, and the Convention on the Protection and Use of Transboundary Watercourses and International Lakes.

sign due to disagreements over the use of the term “transboundary watercourses” (Dukhovny and de Schutter 2011). Therefore, the 1998 agreement needed further improvement on legal aspects related to transboundary river management.

In addition, Article V of the 1998 agreement recognises the possibility of commitment problems arising. Therefore, the agreement includes a clause stating that the “parties shall undertake essential measures which will ensure the fulfilment of their agreement commitments to the other parties using various forms of guarantees, such as lines of credit, security deposits, or other forms”. This agreement did not, however, specify a pricing regime for commodities, which became a stumbling block later because of differences in domestic and global prices (Elhance 1997). As a result, this agreement was effective only between 1998 and 2002. Kyrgyzstan attempted to tie the price of electricity to the price of gas, and Uzbekistan and Kazakhstan did not agree to this price setting (Dukhovny and de Schutter 2011). There were delays in the signing of the protocols because of these disputes. Riparian states later had to reach an agreement each year to regulate river flow, sometimes on a bilateral basis.

There is a bilateral *Agreement on joint use of fuel, energy and water resources in 2000 and 2001* between Kyrgyzstan and Uzbekistan which regulates the exchange of water from the Toktogul water reservoir for energy deliveries. These two bilateral agreements can be considered as subsequent agreements of the 1998 agreement. The purpose of these agreements is the same as the agreement of 1998, but they specify the amount of water to be released by upstream Kyrgyzstan and the amount of compensation provided for water by downstream Uzbekistan for the given year. As mentioned earlier, the agreement of 1998 was effective only until 2000 due to disagreements related to

the pricing of electricity and energy deliveries. Therefore, these agreements are based on the initial 1998 agreement but are short-term agreements which take into account changes in prices for electricity, gas and oil.

### **Bilateral agreement of 2000 between Kazakhstan and Kyrgyzstan and the role of third parties**

In 2000, Kazakhstan and Kyrgyzstan signed a bilateral *Agreement between the Republic of Kazakhstan and the Kyrgyz Republic on the use of inter-State water facilities of Chu and Talas Rivers*. This bilateral agreement in 2000 provided compensation for the maintenance costs of water reservoirs on the Chu-Talas Rivers in upstream Kyrgyzstan by downstream Kazakhstan.

Close examination of the history of this agreement shows that the role of third parties was significant in the emergence of this agreement and its implementation. Firstly, it is the 1998 agreement which provided the basis for the 2000 *Chu Talas agreement* between Kyrgyzstan and Kazakhstan. As mentioned earlier, USAID launched the SPECA program after CA states signed the 1998 agreement. The Chu Talas basin agreement is believed to be one of the successful outcomes of the SPECA program which was facilitated and financed by third parties, and the agreement is perceived as the success story that could possibly be transferred to other CA countries (Wegerich 2008; Libert 2008a). Second, this initiative was also supported by the OSCE/UNECE/UNESCAP project (“Chu-Talas I”) and financed by Sweden and the United Kingdom. Libert (2008a), for example, emphasises the clear contribution of international organisations in the successful outcome of this project.

After the ratification of the agreement in 2002, the governments of Kazakhstan and Kyrgyzstan asked UNECE and UNESCAP for assistance to set up an intergovernmental transboundary water commission in order to effectively

implement the agreement. As a result, on July 26, 2006, Kyrgyzstan and Kazakhstan set up the Commission on the Use of Water Management Facilities of Intergovernmental Status on the Rivers Chu and Talas.

In this regard, third parties such as the OSCE, EU and other third parties helped with the development and approval of the Statute of the Commission, as well as guidelines for financing costs of repair, operations and other activities related to water infrastructure. The OSCE helped to raise funds and acted as a co-partner in the implementation of the project. The project was also complemented by activities funded by the Asian Development Bank (ADB). The ADB, for example, assisted with setting up the Commission secretariat and renovating some infrastructure on the rivers, while UNDP assisted in project information dissemination (Libert 2008a).

Another follow-up project, Chu-Talas II, started in 2007 with efforts to broaden cooperation further. This cooperation also involved the revision of the bilateral agreement (Libert 2008a). The objective of the project which was supported by third parties was to make the Chu Talas agreement operational. The project helped with drafting background documents for the Commission, preparing background documents and developing procedures for sharing the costs of maintenance, mediating between the two Governments on the above documents and developing a plan for involving the public in the management of the river basin. The Chu-Talas I project thus resulted in a positive outcome for the riparian states in CA (Libert 2008a).

Furthermore, it seems that the Chu-Talas agreement, which was strongly supported by third parties, laid the ground for further cooperation. For example, very recently the President of Kazakhstan, Nursultan Nazarbayev, after the meeting with the President of Kyrgystan, Almaz Atambayev, in August 2012 announced a planned project to build an electricity transmitting

station "Kemin-Almaty" connected to the two states. The President of Kazakhstan stated: *"We need a joint electricity grid, therefore Kazakhstan is planning to build this station. We depend on each other, because we need water and electricity, and Kyrgyzstan can only sell the electricity to Kazakhstan. We should convert this interdependency to friendship of two states"* (News Report 2012).

During this meeting, the possibility of building new joint hydroelectric stations was also discussed.

## **The role of third parties in Central Asia within the transcendence framework**

### **From securitisation to utilisation and the role of third parties in Central Asia**

An analysis of transboundary river disputes in Central Asia shows that water's superordinate and utilitarian values can give rise to disputes as well as cooperation. The disputes that emerged in 2001 around the controversial law on 'water', issued and approved by the parliament of the Kyrgyzstan, is a clear example of how water is perceived from superordinate and utilitarian perspectives. The 2001 law of the Kyrgyzstan "On intergovernmental use of water resources and water facilities of the Kyrgyzstan" stirred a dispute among riparian states of Central Asia. The main point of this decree was that water should be considered as an economic good and enshrines the state's right of property on water resources and water facilities within its territory. The law particularly stated that payment should be made for water which is stored and maintained in water reservoirs.

The first official reaction to this 'water' decree was from the President of Kazakhstan, Nursultan Nazarbaev, who arrived in Kyrgyzstan right after this law had been passed. He openly opposed this legislation, stating that water is not a resource which can be sold and given economic value (Usabaliev 2002,

p.11). Negative reactions also ensued from downstream Uzbekistan. There were several official letters exchanged between prominent politicians and the Ministers of Foreign Affairs of Kyrgyzstan, Uzbekistan and Kazakhstan. Some of the statements made by politicians of downstream states were that “water is a God-given gift and cannot belong to anyone but belongs to everyone” (Usubaliev 2002, p.26). Some other arguments were that “we should treat water as a spirit, idea and a legacy”, and water is a “legacy which is necessary to save, protect and treat accordingly” (Usubaliev 2002, p.36). Downstream states opined that water should be considered as a legacy which had been passed on to the present generation, and which should be passed to the next.

Yet, Kyrgyz politicians insisted that water should be considered as an economic good. For example, Usubaliev (2002, p.36) wrote in his letter, *“while recognising water as a legacy, we also use water for our economic activities and if the precious water is not protected, maintained and preserved, water could also be exhausted”*. Kyrgyz politicians cited and provided various international examples. For example, they cited a statement made in the International Conference on Water and the Environment (ICWE), Dublin, Ireland, organised on 26-31 January in 1992. The statement says, “Water has an economic value in all its competing uses and should be recognised as an economic good”. Another statement used was from the United Nations Conference on Environment and Development, Rio de Janeiro, 1992, the so-called “Earth Summit”. Statement 18.8 from Chapter 18 states that, “integrated water resources management is based on the perception of water as an integral part of the ecosystem, a natural resource and a social and economic good”. Therefore, Kyrgyz politicians stated that water is an economic good which cannot be delivered for free. They also claimed that the statements made by politicians of downstream Kazakhstan and Uzbekistan about water being a “free resource”, “legacy” and “Gift of God” were unsubstantiated.

The utilitarian value of water had been brought forward by Kyrgyz politicians in their dispute regarding the water law. They maintained that for the years between 1992-2000, the total costs of maintaining all water reservoirs and facilities was 226.8 million dollars, but only 25% of the water stored in these reservoirs was used for the needs of Kyrgyzstan (Usubaliev 2002). Uzbekistan and Kazakhstan were able to expand their irrigated area up to 400,000 ha for which almost 90% of water was provided from the Toktogul water reservoir. However, none of these costs was covered by downstream riparian states that used most of the water from Kyrgyz reservoirs. Furthermore, they argued that the downstream states received economic benefits from the use of water for agricultural purposes; for example, Uzbekistan made US\$360 million, Kazakhstan US\$240 million, and Tajikistan US\$60 million dollars (Usubaliev 2002). Several examples of how water is utilised as an economic resource were provided. For example, they stated that the US paid 5 cents for one cubic meter of water to Canada, that Germany buys freshwater from Switzerland, and Turkey bought water during the drought season from Bulgaria for 0.12 cents per cubic meter of water in 1993 (Usubaliev 2002).

Eventually, this dispute intensified concerns about the importance of water security. The water resource had begun to be presented as a zero-sum security issue by downstream states. In 2001, the National Security Council of Kazakhstan began assuming authority for forming and implementing the state's water policies (Markov 2001). Uzbekistan allegedly carried out military exercises in very close proximity to the Toktogul reservoir (International Crisis Group 2002). In response, Kyrgyzstan leaders allegedly threatened to blow up the reservoir if any attack was attempted (International Crisis Group 2002).

This standoff later subsided. Finally, in 2002, the Kazakhstan and Kyrgyzstan parliaments ratified a bilateral agreement on the Talas-Chui river basin. According to this agreement, Kazakhstan agreed to pay a part of Kyrgyzstan's

expenses for the maintenance, operation and rehabilitation of a number of dams and water reservoirs that were supplying water to Kazakhstan. The very issue which had been debated in 2001 was successfully resolved, with a compromise from a stronger riparian state.

During the interviews, officials from government agencies raised the issue about water as a unique resource and discussed water's superordinate and utilitarian values.

*Interviewee: Upstream states suffer from hydroegoism. Water is a unique resource because life depends on water. You cannot charge for water because the water has been coming to our states for centuries, and we have all rights to have undisturbed access to it (Official, Committee for Water Resources, Kazakhstan, September, 2012).*

*Interviewee: The livelihoods of many people downstream depend on the river waters. Water is a special resource and you cannot treat water the same as gas or oil, which is what upstream states are trying to do (Official, Ministry of Agriculture and Water Resources, Uzbekistan, Skype interview, August, 2012).*

In another case, water's superordinate value appears to encourage compromise. For example, upstream states believe that downstream states are not fulfilling the terms of the agreement by way of delivering compensatory energy supplies. Despite upstream states' ability to hold the water for several days, which can completely destroy the newly-planted crops during the irrigation season, representatives from upstream states believe that such action is highly unethical.

*Interviewee: Kyrgyzstan has tools to cause damage to downstream states. For example during the vegetation period, it is enough to hold water for 5 days and all baby plants would die. But we will not do this because we are not animals, it is cruel. Water is life and it is a special resource. Because Kyrgyzstan is more democratic, we do not block*



*water (Official, Ministry of Agriculture and Melioration, Kyrgyzstan, September, 2012).*

Participants also recognise that water has an economic purpose. Many participants, particularly those of upstream states, have questioned why water cannot be priced and considered as any other economic good if it is used for economic activity such as cotton production.

*Interviewee: What is water? Is it natural resource which we can consider as an economic good? It is very important to define clearly what water is. Water is not considered as a commodity on many criteria. For example, Uzbekistan claims that water is a natural renewable resource and cannot be considered as a resource which can be sold or given economic value. But yet they use water for economic purposes. It is enough drinking water, but the issue for example for Uzbekistan is economic security connected to water (Official, Ministry of Energy and Industry Development, Kyrgyzstan, September, 2012).*

The analysis of the events which led to the bilateral agreement of 2000 between Kazakhstan and Kyrgyzstan shows that the project implementation of Chu-Talas I was supervised by a Steering Group with representatives of the riparian states as well as representatives from third parties such as OSCE, UNECE and UNESCAP. So the role of third parties in the implementation of the agreement, as well as in its emergence, has played important role. The role of third parties was important in de-securing the issue and helping parties to reach a mutually acceptable solution which was based on the utilitarian side of water usage. Despite the swift standoff between politicians regarding water and its security implications, the previous efforts of third parties helped to sustain the political pressure and helped to resolve the issue which was beneficial for both riparian states. Third parties also helped to raise the funds, and acted as a

mediator, which was clearly stated in the project objectives, and provided technical and administrative expertise.

The same year, the OSCE attempted to promote regional dialogue and the exchange of information as a confidence-building measure. For example, Simao (2011) mentions that in the preparatory documents for the 10th Economic Forum, held in Prague on “Co-operation for the sustainable use and the protection of quality of water in the context of the OSCE” in May 2002, it was clear that the main aim of the OSCE was to act as a facilitator and co-ordinator between the Central Asian states and international donors<sup>39</sup>. One of the aims of the OSCE was to promote economic cooperation among Central Asian states, including the facilitation of reaching agreements on trans-boundary cooperation and confidence-building measures (Simao 2011). The same year, the OSCE, in partnership with the United Nations, established the Environment and Security Initiative (ENVSEC) aimed at addressing environmental issues which could threaten security, stability and peace in South Eastern and Eastern Europe, the South Caucasus, and Central Asia (Simao 2011).

However, security concerns tend to emerge from time to time due to the transcendent features of river disputes and the development ambitions of riparian states. It appears that water resources prompt debate around its superordinate and utilitarian values. The possibility of military confrontation always hovers when disputes over water are concerned. Recent big development projects by upstream states on transboundary rivers have particularly strained the fragile relations between CA states. Political leaders tend to present the river issue as a zero-sum security issue, despite mutually beneficial solutions existing. What is often termed as ‘political will’, unfortunately, is biased towards, and based on, the realist mode of

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<sup>39</sup> Organization for Security and Co-operation in Europe Economic Forum (Senior Council) (2002), “Tenth Meeting of the Economic Forum”, Prague, 28 to 31 May 2002, EF.GAL/13/02, 24 June.

understanding. For example, in a very recent event, during an official press conference in 2012 in Astana, the President of Uzbekistan, Islam Karimov, mentioned the possibility of war over water resources in Central Asia. He voiced his concern about the ambitions of the upstream states of Kyrgyzstan and Tajikistan to build several dams on the Syr and Amu Dary rivers. Uzbekistan considers the building of dams to be a potential threat to its national security.

As mentioned earlier, Tajikistan, due to civil war, was not an active player in hydropolitics in CA until 2000, and it is only recently that it has started utilising the rivers for its own economic and development ambitions. Other than the existing Nurek reservoir, Tajikistan had only limited influence on supporting agriculture downstream during the summer period (Wegerich 2008). Therefore, there were not many disputes involving Tajikistan and Uzbekistan until Tajikistan resumed the idea of building the Rogun dam.

Tajikistan's development plans have been met with strong opposition from Uzbekistan. As a result, relations between Uzbekistan and Tajikistan have deteriorated. In 2009 the joint energy system that has existed since Soviet times was severed and Uzbekistan withdrew from the energy grid (Wegerich 2011). In addition, Tajikistan may face difficulties in selling electricity because Central Asia's present electricity energy grid is located in Tashkent, the capital of Uzbekistan. All electricity trade between the two states has stopped due to the dispute over the Rogun dam, and as a result, Tajikistan has lost the opportunity to import electricity from Turkmenistan.

One of the arguments of Uzbekistan against the Rogun dam is that dam building may bring a potential environmental disaster. They argue that because Tajikistan is situated in a seismic zone, potential damage to the dam may bring catastrophe to the downstream state of Uzbekistan. Tajiks claim that

historically dams have been built and if all safety measures are taken, then dams are able to withstand strong earthquakes. Uzbekistan's own water reservoirs and dams are believed to be in a much worse condition and they have much more potential to bring environmental disaster than the Rogun dam (Papyrin 2011). For example, the Sarez water reservoir in Uzbekistan is reported to be a potentially dangerous dam compared to the Rogun dam (Papyrin 2011).

Despite the dam development being presented by Uzbek political leaders as a security threat linking it to potential environmental consequences, they are more concerned about the potential of upstream states to control the flow of river water. Uzbekistan needs river water for its irrigation needs and given cotton production is one of its major exports, it is more concerned about its economic security. This is also related to the social value of irrigation in downstream Uzbekistan. Almost 40% of the population (mostly rural) find employment in irrigation or irrigation related sectors (Dukhovny and Sokolov 2003). Uzbekistan is also one of the republics most dependent on water originating outside of their territories. For example, Uzbekistan did not have control of the sources of the main rivers of Amu Darya, Syr Darya and Zarafshon but used three-fifths of the regional water for irrigated agriculture (Smith 1995, p.356-357). In addition three-fourths of CA's population reside in mid-stream and downstream of the basin with half of this population being in Uzbekistan (Weinthal 2002, p.116 ).

According to Tajik officials, issues have been raised by Uzbekistan to prevent the economic growth and energy independence of Tajikistan<sup>40</sup>. Tajik officials state that neighbouring Uzbekistan knows that construction of the Rogun dam is economically beneficial for all states, particularly for Uzbekistan.

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<sup>40</sup> These concerns were shared during the interview in September 2012 in Dushanbe.

International experts also mentioned during the interview<sup>41</sup> that all the concerns raised by downstream Uzbekistan can be solved technically, and it would be more beneficial for Uzbekistan if they were involved in this project. The Rogun dam can help to regulate the water flow during the low water season and release water during the irrigation season if the two states can cooperate on this issue. However, the Rogun dam would increase the dependence of Uzbekistan on upstream Tajikistan, which Uzbekistan wishes to avoid and is taking all measures to stop (Libert 2008b).

Even though the issue is being presented as a security issue linked to environmental concerns, the dispute over river water arises because of competing development strategies, such as the extension of irrigation areas and the development of hydro energy (Kloetzli 1997, p.423). It was obvious that despite claims by some riparian states about the superordinate value of water, CA states were more concerned about the economic needs of the states. Libert (2008a), for example, provides a useful insight that in dealing with transboundary river water management issues, it is river management authorities that are involved, not environmental protection authorities. Libert (2008a) mentions that short-term irrigation and development problems appear to be more prevalent than long-term environmental concerns. It has also become evident, especially after the recent tension over the dams built on transboundary rivers and the emergence of agreements linking energy and water, that the development and economic agenda of CA states appear to have overtaken the environmental concerns regarding the Aral Sea.

As explained earlier, water through its utilitarian value can also bring parties together, turning a dispute into a win-win opportunity. Therefore, it was an opportunity for third parties to intervene under the guise of development assistance and focus on the utilitarian aspects of managing transboundary

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<sup>41</sup> The interview with an international expert on water management on July 2012.

rivers. As stated previously, the agreements and the agenda of third party involvement in the early 1990s were related to environmental concerns in respect of the Aral Sea. Later agreements linked the issues of transboundary waters with energy and the trading of resources. Subsequently, third parties have also shifted, or at least incorporated, the development and economic issues in their dealings and negotiations over transboundary rivers in the CA context. For example, the idea of trade in natural resources was also supported and pushed by third parties in the resolution of transboundary river conflicts in CA. Third parties helped to capitalise on the states' differences and induced trade and other linkages. Petroleum, gas, and coal can be traded and used to generate power during winter in exchange for more water being released during summer.

Third parties functioned as a mediator between states by complementing various political and economic leverages to bring states towards cooperation. In this regard, third party actors facilitated communication between riparian states. For example, Kirmani and Le Moigne (1997) state that the World Bank in the CA case played a proactive role and demonstrated development and quiet diplomacy. As stated earlier, in the case of the Aral Sea basin the Bank's Director and Vice President negotiated with the Heads of the CA Republics. Third parties in CA also undertook various conferences, workshops, meetings and training for water specialists in CA states in order to facilitate communication and dialogue between riparian states.

During interviews, representatives of IOs and international experts mentioned the importance of dealing with water issues from its utilitarian perspective rather than considering the water issue from a zero-sum perspective.

*Interviewee: The WB role is much more of a facilitator bringing parties together and helping them reach agreement among themselves. One of the key and basic fundamental*

*points of this process is that the discussion of parties shifted away from allocation of water from cubic meters, which is essentially a zero-sum game, to one to allocating the benefits related to water. That means that you increase the size of the pie and create more opportunities for the parties and underlying this is the fact that the WB and others will finance the investment that parties identified as necessary (Representative of the World Bank, Skype interview, August, 2012).*

***Interviewee:*** *A third set of possibilities is to create the set of ideas on the table so that all parties can mutually benefit and create a win-win situation rather than a zero sum game (Representative of UNDP, Kyrgyzstan, September, 2012).*

***Interviewee:*** *War over water in CA is unlikely. Political questions can be resolved through economic leverages (International expert, Skype interview, August, 2012).*

In addition to facilitating communication and dialogue between riparian states, third parties also provided financial incentives for CA riparian states to turn the water issue into a positive sum outcome and encourage them to reach an agreement. As described earlier, the agreements of 1992, 1993 and 1998 were all linked to financial incentives provided by third parties. It was a clear link that right after signing each agreement, generous financial aid was provided to riparian states to deal with transboundary river issues. Given the fact that these CA states were in desperate financial need after the collapse of the USSR, financial aid turned the issue of transboundary rivers into a win-win outcome for all riparian states. Cooperation over rivers has become more beneficial than contentious. During interviews, participants acknowledged that without financial aid, riparian parties themselves could not have undertaken many activities, and the situation could have been more conflict-based. In addition, financial aid covered the transaction costs of negotiations, which parties may not have been able to cover themselves, and decisions could have been based on false assumptions.

What is the implication of this to the debate on climate change and conflict? Due to water's superordinate value, the debate is securitised. As mentioned earlier, there are neo-malthusian proponents arguing that potential water scarcity would bring violent conflicts. However, the development of technology and increasing trade refuted similar arguments about severe food shortages resulting from exponential growth of population. Although climate change may bring about severe water scarcity and pose the threat of conflict, there is also the potential to offset scarcity if parties focus on the utilitarian aspects of water and find mutual or positive sum solutions.

### **From legal ambiguity to legal clarity and the role of third parties in CA**

Transboundary rivers raise the issue of sovereignty and the issue of legal ambiguity regarding the ownership of rivers. In the CA case, the essence of the problem is also who is the nominal owner of the water resources. The first problem is that disputes arise because downstream states such as Kazakhstan and Uzbekistan emphasise that transboundary rivers are common rivers which belong to all riparian states and as such, downstream riparian states need to be consulted to ensure that no substantial harm will be inflicted by activities on the river. On the other hand, upstream states claim that the rivers which are formed on their territory are their national resources which they own and can utilise as they wish. Kyrgyzstan, for example, states that the rivers on Kyrgyz territory are national rivers because all main rivers within the country are formed on their territory and no single stream from neighbouring states contributes to the formation of rivers in Kyrgyzstan (Usubaliev 2002). This position was clearly stated by Usubaliev in 2000 when he claimed that according to international law, national rivers are defined as rivers which are formed on the territory of a single country and these rivers can only be used based on agreements and mutual benefits (Usubaliev 2002). He claimed that all



rivers are national rivers, therefore they can treat them as any other resource on their territory.

In response to the Kyrgyz law on water as described earlier, the President of Kazakhstan openly said that, “this decree does not have any legal base, and it is not allowed according to international norms to charge for water which is used for irrigation. This rule is not acceptable for Kazakhstan” (Usubaliev 2002, p.11). Disputing parties appear to refer to international norms and UN conventions when disputes arise over transboundary rivers. As mentioned before, states attempt to justify their actions based on international norms and they appeal to international law to legitimise their actions and claims.

However, each side interprets these conventions to their own liking. Again, if we return to the Rogun case in Tajikistan, these two opposing approaches were evident in their disputes. Uzbekistan attempted to promote the absolute integrity concept and insists that any construction on the rivers should be done with their permission. The President of Uzbekistan during his visit to Kazakhstan in October 2012 said: *“Upstream states Kyrgyzstan and Tajikistan are interested in using the waters of transboundary rivers for energy production but they forget that Amudarya and Syrdarya are transboundary rivers. They should act according to international law and there are four UN conventions. According to international norm, they should obtain riparian states’ permission before they undertake any activities on these rivers”*. Tajikistan claims that since they believe that the Rogun dam will not cause any substantial harm, according to international law the final decision is still theirs and they will proceed with the construction of the dam whether Uzbekistan likes it or not. Tajikistan also believes that the rivers on their territory are their national resources and they can utilise them as they wish. An international expert on water resource management stated:

*Interviewee: Briefly, the positions are old and typical. Downstream states claim their historical right to water saying that they have been using the water for 2000 years and they want to use it as usual and upstream states do not have a right to reduce the water flow. Upstream states claim that because water is being generated on their territory they have full right to use it as they fit. These are two different views, but these two views are rejected by international law. Currently the view is in the middle ground. It is about reasonable use taking into account interest from both sides. But the definition of this is not clear (International expert, Skype interview, August, 2012).*

Third parties use various leverage tools to attempt to influence the decisions of riparian states, which in turn creates precedence for other states. For example, the World Bank requested that construction works related to the Rogun dam be halted until a full environmental impact assessment had been completed (Papyrin 2011). Despite the national and strategic importance and urgency of this project for Tajikistan, they agreed to halt all works. Tajikistan is determined to complete the Rogun dam and the decision has been made to build it despite strong opposition from Uzbekistan. Yet, the involvement of the World Bank has appeased Uzbekistan for the time being. First, the rushed decision to continue construction without an environmental impact assessment by international experts could have worsened an already strained relationship between Tajikistan and Uzbekistan. Thus the World Bank modified the behaviour of Tajikistan towards due consideration of the impact of the dam on the other riparian state. The World Bank in turn mentioned the prospect of financial assistance through establishing a financial consortium for dam construction, in case the report finds that the Rogun dam would not cause any significant harm to downstream states (Libert 2008b).

The involvement of third parties since the 1990s has appeased the tenuous relations between riparian states and assisted in reaching river agreements. As for the role of third parties in addressing legal ambiguity, third parties through

national and regional seminars and workshops try to disseminate and promote international UN conventions. Third parties attempt to promote certain behaviour among riparian states in order to deal with this legal ambiguity, and through their own water policies or through various projects and conferences<sup>42</sup> disseminate and educate the interpretations of international conventions of the UN.

An official of a joint river institution mentioned the importance of keeping up communication and constant dialogue in understanding each party's position in relation to transboundary rivers and the role of third parties in facilitating this communication and dissemination of the knowledge on international conventions.

*Interviewee: Constant dialogue is most important. We have constant dialogue in the framework of our commission because it is gathered every quarter. There are conferences which are conducted by IWRW once every two years. In addition, dialogue occurs in the framework of the Aral Sea Fund. The Aral Sea Fund, for example, organises the conferences and meetings with the support of international donors. In this regard EECUN (European Economic Commission of UN) and the German agency of International Cooperation (GIZ) are heavily involved (Representative of ICWC, Uzbekistan, Skype interview, August, 2012).*

Another official from Tajikistan mentioned the importance of bringing parties together for a dialogue in a neutral place because each party still considers the

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<sup>42</sup> Some of the recent activities include seminars like the “International water law and negotiation of mutually beneficial multilateral water agreements in Central Asia”, organised in cooperation with the United Nations Regional Centre for Preventive Diplomacy for Central Asia (Almaty, Kazakhstan, 19-21 April 2009); the national seminar “Legislation and procedures for the application of the Espoo Convention in Tajikistan” (Dushanbe, Tajikistan, 22—23 July 2010); the national seminar “UNECE1 Water Convention and its role in international law” (Almaty, Kazakhstan, 18—19 October 2010); the national seminar “Strengthening integrated water resources management and transboundary water cooperation: the role of UNECE conventions and of the EU Water Initiative National Policy Dialogue”, organised with additional support from Switzerland (Ashgabat, Turkmenistan, 6—7 December 2010); the national seminar “On the way to the International Year of Water Cooperation: the role of international law, including the UNECE Water Convention, in strengthening cooperation on water resources management”, organised with additional support from Switzerland (Dushanbe, Tajikistan, 14—15 March 2011) (UN 2011, p.5).

transboundary rivers from a doctrine representing their interests and claiming ownership rights to rivers.

*Interviewee: I think it is really important just getting parties talk to each other and understand each other, to have a neutral forum, for example, the Kyrgyz Republic might not want to go to Uzbekistan to talk about water whereas they could be quite happy to go Dubai or London. So all parties come to the table as equals rather than one seeing the other as approaching another for something they consider they own themselves (Official, Ministry of Melioration and Water Resource Management, Tajikistan, September, 2012).*

In recent years UNECE has undertaken numerous activities under the capacity building component to promote international water law. For example, the United Nations Economic Commission for Europe (UNECE) project “Regional Dialogue and Cooperation on Water Resources Management” (2009–2011) which was undertaken by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) contributes to strengthening legal frameworks for water resources management in Central Asia and a better understanding and implementation of international water law in this region (UN 2011).

Third parties also promote the compliance of river agreements with the principles of international conventions or ensure that they incorporate certain principles that third parties believe are necessary for riparian cooperation. For example, when CA states wanted aid at the domestic level, the WB pushed for a new agreement that was compliant with the principles of water law and for the establishment of an international water basin institution; if no new agreement, then financial aid would not be provided (Weinthal 2002).

UNECE also collaborated with regional organisations and other international organisations such as the Organisation for Security and Cooperation in Europe (OSCE), UNDP, UNEP, through the Environment and Security Initiative, as

well as UNESCAP. In collaboration with the European Union Water Initiative and the European Commission, UNECE engaged in developing integrated water resources management in the Central Asian States (Libert 2008a, p.39).

Third parties such as UNECE and the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) were involved in CA through its SPECA water and energy program. The importance of their involvement was that UNECE has environmental conventions which provide for a basic international legal framework upon which third parties hoped that CA could build their transboundary river cooperation (Libert 2008a). Within the framework of the SPECA working group, four CA countries, Kyrgyzstan, Uzbekistan, Kazakhstan, and Tajikistan, came up with a regional water and energy strategy which makes a clear link between water and energy and the need for some legal framework cooperation (Libert 2008a). It was expected that the implementation of this project would contribute to improved cooperation on transboundary waters as promoted by the UN Special Program for the Economies of Central Asia (SPECA). The project also aims to contribute to a better understanding of the principles of the UNECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes in Central Asia, and the creation of an enabling environment for the accession of Central Asian countries to the Convention.

Third parties also assisted with the formation of a legal base to set up the Chu Talas Joint River Commission. In 2006-2007, international and national experts reviewed international water law and the national water legislation of two republics alongside global experience in the field of interstate water cooperation with support from ADB, OSCE, UN ECE, and UN ESCAP (Chu Talas Joint River Commission 2007). As a result of this project, it was recommended to develop and harmonise national water and environmental laws of the two republics and reform institutional structures. For example, one

of the recommendations states: *“Detailed development and implementation of national programs of Kazakhstan and the Kyrgyzstan related to joining to global water and environmental conventions and fulfillment of its commitments. Development of activities for ensuring sustainable organisational and economic framework for fulfillment of these commitments”* (Chu Talas Joint River Commission 2007, p.31 ). These efforts are moving national legislation on water towards the rules and norms promoted by the UN. The compliance of states with these rules can eventually help move away from extreme doctrines which only represent each state’s individual interests.

The Presidents of Central Asian countries on 28 April 2009 agreed that the existing institutional and legal frameworks of IFAS should be reviewed by third parties (UNECE 2010). This was done in order to increase efficient interaction with donors. Hence, the UNECE, the IFAS Executive Committee and Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH, along with national and international experts, reviewed the existing legal framework for river cooperation<sup>43</sup>. The feedback of this group was that most of the agreements have not incorporated the principles of the UN conventions on transboundary rivers<sup>44</sup>.

Principles suggested by this working group were from the UN International Convention. It appears that these principles are being promoted and incorporated into existing agreements. The content of existing agreements reached by CA states was influenced by third parties’ conditions to comply with certain international conventions. At the same time, third parties also

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<sup>43</sup> It was undertaken as part of the project “Regional Dialogue and Cooperation on Water Resources Management” in 2009.

<sup>44</sup> For example, these are some of the following shortcomings they identified: “No mention of the universally recognized legal principles and conceptual frameworks of water management such as reasonable and equitable use of transboundary waters, the principle of prevention, the “polluter pays” principle, the ecosystem approach, the basin principle of management; No developed procedures for notification and consultations on planned activities, which may have a transboundary impact; No provisions for access to information concerning the status of water resources and the role of the public in decision-making regarding their use” (UNECE 2010, p.8 )

assisted in reaching very narrow, yet somewhat innovative, agreements which focused on sharing benefits such as resource swaps or sharing maintenance costs in exchange for water. As discussed in Chapter I, bilateral or multilateral agreements contribute to and become part of international law. It is not only that existing principles of international conventions can be incorporated in agreements but also that innovative agreements reached by states can contribute to and set precedence and can consequently become the international norm.

### **From credibility problems to credible commitments and the role of third parties in CA**

In the study of transboundary river cooperation and conflict, power asymmetry may be manifested not only in military-political terms but states may also have a physical or topographical advantage. The physical location of the state can be used as a form of bargaining power. In transboundary river conflict and cooperation, being an upstream state can be used as bargaining leverage and also may pose credibility problems.

For example, Uzbekistan and Kyrgyzstan agree each year that a specified amount of water is to be released downstream during the irrigation season. However, if due to seasonal change there is less water upstream, the downstream state can accuse the upstream state of not complying with the agreement and thus may not believe the claims of upstream states. This was an issue in the early 1990s. Therefore, third parties assisted by bringing parties together for dialogue, and provided financial incentives to address commitment problems and increase compliance with agreements. Third parties encouraged CA riparian states to incorporate the principles of UN conventions which require riparian states to exchange information regarding shared rivers.

Third parties also assisted with creating and enhancing the capacity for obtaining necessary data and building infrastructure for the access and exchange of information. The WB attempted to introduce the rule that relevant information and data on hydrology, rainfall, and dam operations needed to be shared by riparian states. For this reason, third parties helped set up and financially supported the ICWC. The ICWC was a focal coordinating point and this institution played an important role in reaching a peaceful solution and ameliorating the conflict. It has conducted regular meetings to manage transboundary waters, including seasonal water allocations. It has also dealt with strategic concerns, the continuous improvement of management systems, and has developed and implemented information and data monitoring systems (Wouters et al. 2007).

Third parties funded projects that assisted with the collection of data on irrigated water use at the farm level as well as with the development of a GIS-based database for land and water (Micklin 1998). The EU provided a grant of US\$4.5 million for a technical assistance project to establish WARMAP (Water Resources Management and Agricultural Production) in 1994. The EU also assisted with the WAEMAP Program which created an information system at the regional level. The WARMIS database, combined with Geographic Information Systems (GIS) and remote sensing data, was created to assist the ICWC, IFAS, and other water-related organisations (Dukhovny and Sokolov 2003).

Switzerland, for example funded the Central Asian Regional Water Information Base Project (CAREWIB) which aimed to improve the exchange and availability of water- and environment-related information (Libert 2008a). This system incorporates information on the availability of water resources, their allocation among river reaches, and water-management systems, which



also include GIS maps for each CA state. This information system is used within the framework of ICWC but also allows partial access to the public (Libert 2008a). With the assistance of donors, it was also possible to set up advanced technologies to monitor water discharges up to 50 km from the object in real time (Libert 2008a). This automated water management system was installed on the Naryn and Chirchik Rivers with the help of USAID. Khamidov (2007) states that the instalment of these advanced technologies has been beneficial to increase trust and confidence between CA riparian states. Dukhovny and de Schutter (2011) also mentioned that these projects created a framework for efficient riparian cooperation and a common basis for further regional development regarding transboundary river management.

Even the North Atlantic Treaty Organization (NATO) became involved in issues related to the Aral Sea. This organisation held an Advanced Research Workshop (ARW) on “Critical Scientific Issues of the Aral Sea Basin: State of Knowledge and Future Research Needs” held in Uzbekistan in May 1994 and its second workshop was held in Wageningen, the Netherlands, in January 1995 (Micklin and Williams 1996). NATO was involved through its Scientific and Environmental Affairs Division and its Science for Peace (SfP) Program from 1994-2003 (Ptichnikov 2000, cited in Micklin 2007; 2002; 2003). This program funded the development of land and water GIS for the Amu Darya delta and Aral Sea (Ptichnikov 2000, cited in Micklin 2007; 2002; 2003). The outcome of this work was intended to be used for decision-making regarding land, water, and environmental management in the delta. The SfP also sponsored another project that aimed to develop an environmentally sustainable water management regime in the Amu Darya delta (NATO/OTAN 2003, p.189-190).

Through these projects it was possible to arrange face-to-face meetings with representatives of four CA countries to exchange ideas, and prepare reports on

the development of new technologies. The most important aspects of these projects were the information system (WARMIS) and field survey and demonstration plots (WUFMAS) (Dukhovny and Sokolov 2003). These projects introduced a collaborative style of work and established a basis for future development and collaboration (Dukhovny and Sokolov 2003).

Several interview participants mentioned the importance of information availability and exchange for cooperation.

*Interviewee: Access to information is the most important. It provides the transparency and openness. Transparency creates the trust. I think free access to information and the integrated information system is really important because we are developing not only our own regional information system but also a national information system (Official, Branch of ICWC, Kyrgyzstan, September, 2012).*

*Interviewee: Getting the basic facts on the table, how much water is there and how it varies, getting a hydrological measurement system that everybody trusts, creating incentives and checks that no one is fiddling the data in their own interests (Representative of IFAS, Kazakhstan, September, 2012).*

Wouters, Dukhovny and Allan (2007) also claim that despite extreme weather variations, including three exceptionally dry seasons, the ICWC prevented conflicts related to water management and its allocation. Through the ICWC it was also possible to build advanced capacity development systems such as a regional training centre and its national branches. More than 2000 medium- to high-level water management experts and specialists and 2500 farmers have been trained (Wouters et al. 2007). However, almost all these activities undertaken by the ICWC are financed and supported by third parties. For example, the regional training centre established in Tashkent in 2000 was financed by CIDA, in collaboration with McGill University (Dukhovny and Sokolov 2003). The aim of the centre was not only to up skill but also bring

specialists together to exchange ideas and views from different countries. In 2003, for example, 350 water specialists attended training workshops from four CA states (Dukhovny and Sokolov 2003). The courses covered various topics such as the problems of integrated water resource management, regional collaboration on transboundary watercourses, international water law, environmental protection issues and other relevant topics (Dukhovny and Sokolov 2003). There were training activities in four sub-regional centres which were held in different cities across CA, and most of these activities were supported by donors or IOs (Dukhovny and Sokolov 2003). These roundtable training sessions not only allowed for the free exchange of opinions, but official diplomatic representatives from the foreign affairs ministries of four states also attended two such events (Dukhovny and Sokolov 2003). Finland also helped in capacity building through the training of high level policy makers and professionals dealing with environment and water resources (Guterstam 2008).

All these activities were joint activities with representatives of riparian states where they shared experiences during conferences and seminars. These activities were important because these interactions helped create mutual understanding and trust so that water specialists could share a basin-wide common framework. Joint training activities appear to not only provide for the up skilling of water specialists but also are reported to be beneficial for regional cooperation. This gave the representatives from four riparian states an opportunity to discuss issues together and understand the other side's position, providing them with a holistic view on water-related problems in the region. The importance of joint activities was also emphasised during interviews.

*Interviewee: The second tool is joint training. These are joint training sessions for senior and middle level water specialists. We just recently had a meeting about our training and there we agreed upon four aspects for the curriculum. First, is international cooperation; Second international water law; Third is integrated water*

*management; Fourth, improvement of water irrigation. In this regard Canadians helped us until 2004 and they financed our training program. Apart from this, since 2004 International of Integrated Water Management has been supported by UNESCO and actually they helped come up with this curriculum (Representative of ICWC, Uzbekistan, Skype interview, August).*

This study reveals that third parties used various influence strategies and offered generous financial incentives to CA states to address credibility problems and encourage riparian cooperation. These financial incentives have helped cover the transaction costs of negotiations, increased absolute gains of cooperation and increased the opportunity costs of non-cooperation. All CA states were in a dire economic situation after the collapse of the USSR, and as mentioned earlier most of the aid was given to facilitate reaching certain river agreements.

***Interviewee:** With regard to the role of third parties and international organisations, I can say that if not for donors' support, CA countries would not be interested in supporting the institutions and organisations that currently deal with the management of transboundary rivers. The situation could be much more conflictual. Actually, in order to prevent international conflict in the region, IOs and donors do this through water, use it as a tool for prevention of conflict (Representative of ICWC, Skype interview, September, 2012).*

***Interviewee:** Ultimately, International Organisation's role is more of mediator, and the decisions are made through dialogue. So IOs facilitate to create the conditions for this dialogue and capacity building, and provide technical level assistance (Official, Ministry of Melioration and Water Resource Management, Tajikistan, September, 2012).*

Given that both upstream and downstream states were dependent on financial aid in the early 1990s, third parties could control the period of time that a

riparian state could uphold the agreement. As described earlier in the chronology of agreements, third parties promised substantial financial assistance on the condition that parties conclude certain river agreements. Most of the assistance was in the form of grants for national or regional projects which were spread over several years. There was also always a prospect of obtaining more funding for river-related projects, and therefore riparian states had a strong incentive to not only sign river agreements, but also to comply with them.

Despite these factors, the agreement of 1998 only lasted for several years. This is most likely because the promised financial help had already been provided and some important issues such as the pricing of commodities had not been resolved. Nevertheless, this agreement provided the basis for the subsequent two agreements, which were almost the same in terms of the content and conditions, except the parties stipulated the exact amount of water release and energy supplies for the given year. Although de jure the 1998 agreement is not in effect, de facto the parties continue to negotiate each year the exact amount of water for release and energy deliveries as a compensation for water. In this regard, the issue of compliance with an agreement is a short term issue concerning one year periods. The breakthrough that was achieved through the agreement in 1998 still provides the basis for ongoing negotiations to the present day.

The analysis of hydro relations between CA states from the 1990s to the present shows that third party involvement played a crucial role in the emergence of river agreements by addressing the credibility problem and information asymmetry. It should also be mentioned that the activities undertaken by third parties in CA such as capacity building and assistance with gathering reliable information, and facilitating and encouraging the exchange of information, have also contributed to compliance with agreements. These activities

undeniably increased trust between the parties and helped to address credibility problems.

Yet, the interstate interaction over transboundary rivers is dynamic and constantly changing. For example, recent dam developments by upstream Kyrgyzstan and Tajikistan have soured the relationship between upstream and downstream states again. In recent years, these dam development plans have seriously deteriorated relations, particularly between Tajikistan and Uzbekistan. On the one hand, there is not much information exchanged about this activity and little trust in provided information, which leads to increased suspicion. On the other hand, due to Tajikistan's upstream position, downstream Uzbekistan does not believe that Tajikistan is committed to their promises. Uzbekistan is particularly concerned with the building of the Rogun dam in upstream Tajikistan because Tajikistan can control the flow of the river to downstream Uzbekistan (International Crisis Group 2002). Tajikistan controls almost 60% of the total storage capacity of the Amu Darya basin and 9% of the Syr Darya basin through existing storage facilities. Kyrgyzstan controls almost 58% of the storage capacity in the Syr Darya basin (Hannan and O'Hara 1998). The building of the Rogun dam may allow almost complete control of the river, which Uzbekistan wants to avoid. Uzbekistan being a downstream state does not believe that Tajikistan would uphold their promise to release the required water, therefore they wish to stop the construction of the Rogun dam. The Rogun dam is associated with the increased dependency of Uzbekistan on upstream Tajikistan with the issue of credibility at the core of this dispute.

*Interviewee: Uzbekistan just needs guarantees that water will come. It is possible to have all sorts of agreements but these agreements can also be broken because there is a risk and little trust. For example if the Rogun dam will be built, Tajiks can have tools to*

*withhold water say only for one week and all plants can be destroyed (Representative of the World Bank, Tajikistan, September, 2012).*

***Interviewee:** As for the Rogun dam, downstream states are afraid that water can be stored and blocked, because currently the existing dams do not allow for the storage and regulation of water for several years whereas the Rogun dam would allow for regulating water for many years and can control the release of water (Representative of UNDP, Tajikistan, September, 2012).*

This was particularly exacerbated after Tajikistan faced major energy and water shortages during the extremely cold winter in 2007-2008 that resulted in the loss of lives and livestock. In addition, Tajikistan also claimed that Uzbekistan and Kazakhstan did not comply with the agreements to supply energy in exchange for water release from their Kairakum Reservoir. Because Tajikistan had to release water during summer for irrigation purposes, they produced 1.5 times less electricity during winter. In order to increase its electricity production and gain energy independency, Tajikistan revived the idea of the construction of the Rogun dam with the capacity to produce electricity of 3600 MW. Tajikistan also planned to construct the Dasht/Djun hydropower plants and the Yavan hydropower plant on the Zeravshan River.

Even during Soviet times Tajikistan was an energy importer, despite being rich in water resources (World Bank 2004). Therefore, during the Soviet time there were plans to build nine large dams and reservoirs along the Pyandzh River, the largest river which is left unregulated. In addition, the Zeit Reservoir was supposed to regulate the flow and catch sediment from water being transferred from the Amu Darya River to the Kara Kum Canal. But these plans were left unrealised due to the breakup of the USSR and some projects were left half-finished. Tajikistan is therefore determined to complete some of these projects in order to achieve energy independence and economic revival.

The building and completion of the Rogun dam has also become an issue of national security too. As Tajik officials state, “achieving energy independence has become a national idea for Tajikistan”. Yet, the Rogun dam is a mega project and if completed, this dam will be the tallest dam in the world.

According to the General Director of Rogun, H.E.S. Shulashov, the cost of the Rogun dam is estimated to be about 2.2-2.5 billion US dollars. The height of the dam is expected to be 335 meters. The water reservoir’s capacity is 13 cubic kilometres of water, and the hydroelectric capacity is 3600 megawatts. But Tajikistan does not have its own finances to build such a big dam, so they asked the World Bank and other countries for assistance. Tajikistan asked Iran and Russia for financial support for the Rogun dam (Wegerich 2011). Russia also expressed an interest to be involved in the Rogun dam construction, but they could not agree on certain aspects of the construction, such as the dam height. Russia also demanded to have full control of the construction with only Russian specialists involved. These requirements were not acceptable to Tajikistan. Tajikistan decided to build the dam with its own finances. No external party has pledged to assist with funding but Tajikistan wishes to construct the dam whatever the cost. The President of Tajikistan, Emomali Rahmonov, suggested issuing state bonds in order to raise the required funds to build the dam themselves. The Rogun dam is now officially under construction.

Yet, at the same time, there has been increasing cooperation between Tajikistan, Russia, China and Iran in the area of hydroelectricity. Even though Russia is not directly involved in the construction of the Rogun dam, in 2008 Russia helped to build the Sangutdin Hydro-Electric Station-1(HES) with a capacity of 670 megawatts (Wegerich 2011). China helped to build the LEP-500 “South-North” (Electricity Transmitting Station) in 2009, and Iran is completing the Sangutdin Hydro-Electric Station-2 with a capacity of 220 megawatts. The



ADB is assisting with the construction of the LEP-220 (Electricity Transmitting Station) of Sangutdin HES-1-Afghanistan. Currently, the ADB is preparing a technical and economic assessment of the project regarding the potential export of electricity to Kyrgyzstan-Tajikistan-Afghanistan-Pakistan and India.

As mentioned above, the tension between Kyrgyzstan and Uzbekistan had also been exacerbated by the low level of precipitation, which led to a shortage of water in the Toktogul Reservoir in Kyrgyzstan, and the extremely cold winter experienced during 2007-2008 (Libert 2008a) which forced Kyrgyzstan to release more water to produce more energy for heating. In addition, Uzbekistan cut off the gas supply during winter. Kyrgyzstan therefore had to produce more electricity during the winter as well as needing to meet the growing domestic demand for electricity, which led to water shortages during the summer and flooding during the winter in the downstream countries.

After this dire experience, Kyrgyzstan rated energy sufficiency and hydropower development as their major priority in their development agenda. In order to gain energy independence, upstream Kyrgyzstan resumed plans to complete unfinished dam projects on the Naryn River. However, these plans have been met with strong opposition from the downstream countries, particularly Uzbekistan, who worry that upstream countries can control the water supply and there will not be enough water for irrigation purposes during summer. In response to the opposition and gas supply disruptions, Kyrgyzstan asked downstream countries to pay an annual \$25 million bill for the maintenance of the Toktogul reservoir (Sojamo 2008). In response, downstream countries also threatened to pass the bill to Kyrgyzstan to compensate them for the losses created by floods and water shortages during the summer.

Since then, Kyrgyzstan has built the Kambarata II Dam on the Naryn River. Even though there was initial opposition from downstream Uzbekistan, it is

believed that this dam is of a smaller scale and unlikely to cause major disruptions to water flows downstream. Yet Kyrgyzstan is also planning to build several more dams on the Naryn River, and in 2012 signed an agreement with Russia to invest in several dam projects on the Naryn River in downstream Kyrgyzstan.

Thus, in recent years new players have emerged in CA. Russia has increased its interest in hydro-development in CA, and its involvement, although through bilateral engagement, may change hydro-relations in the region. Russia's involvement in hydro-development may push downstream states towards compromises and encourage them to cooperate in respect of transboundary rivers. For example, during the recent meeting between Russia's President Vladimir Putin and Kyrgyzstan President Almaz Atambayev on 20 September 2012, the parties signed an agreement to build the Kambarata HES-1 and Upper-Naryn cascade. Russia will finance this project and a Russian company, "Rushydro", will build the HES. The presidents of the downstream states of Kazakhstan and Uzbekistan immediately had a phone conversation and stated that they want an international independent assessment of these projects and that their interests need to be taken into consideration. In response, President Putin called for joint collaboration in hydro development. President Putin said: *"All projects which are undertaken in the region should be beneficial for all relevant states. Nothing should be done to harm any party. We invite Uzbekistan and Kazakhstan not only to participate in building these projects, but also in managing these hydro-development projects. Kyrgyzstan is strongly supporting this initiative"* (Duvanaev 2012). The President of Kyrgyzstan supported this initiative and mentioned that these projects serve the interests of downstream states because this allows for better regulation of river flow. He cited: *"During winter we need electricity, and we have to release water from the Toktogul reservoir which leaves less water for downstream states for irrigation. If we build Kambarata*

*HES, we can release water from this reservoir instead of Toktogul reservoir. Therefore it is our downstream neighbours who need the construction of Kambarata HES"* (Duvanaev 2012). However, during the meeting which took place on 5 October in Almaty between Russia, Kyrgyzstan, Uzbekistan, and Kazakhstan, representatives of downstream states rejected this idea of collaboration. Yet, despite downstream states' opposition, the agreement on the building of Kambarata HES between Russia and Kyrgyzstan came into effect. In a public interview with the Presidents of Russia and Kyrgyzstan, they again confirmed their position that they still invite downstream states to join in the building of the Kambarata HES. They mentioned that the projects for these HES were prepared during Soviet times. This dam was considered beneficial for downstream states, as it was supposed to serve the irrigation needs of these states by better regulating the release of water. The Kambarata Dam will be built on a site further upstream from the existing three dams, and water from Kambarata will be released to produce electricity during winter. This water can be captured and stored by the Toktogul Reservoir, then used for irrigation in summer. Therefore, the two Presidents reiterated that they invite Kazakhstan and Uzbekistan to join the project so that they could allay any suspicions and benefit directly from this project.

Thus, the involvement of Russia in hydro-development in CA may change the hydrorelations in the region. Currently, Russia is calling for cooperation and joint collaboration, and if the construction of dams goes ahead, then downstream states may have to compromise. Stronger downstream states could have threatened with their military might and imposed their will on upstream states. However, Russia's involvement in hydrodevelopment may push downstream states to look for compromises and opportunities for cooperation.

During the interview with the representative of IOs, a participant also acknowledged the role that Russia could play in dealing with transboundary river disputes among CA states:

*Interviewee: Another major player is Russia, and any private sector involvement from Russia, if there is such a thing. Russia's interest is commercial and political and the interesting thing about Russia is that it may have an influence on Uzbekistan whereas nobody else does. So in terms of bringing the Uzbeks to the table, the Russians could play a role there (Representative of the World Bank, Skype interview, August, September, 2012).*

Downstream states may accept the offer from Russia and upstream Kyrgyzstan to invest in dams and have some control over the management of rivers upstream. The involvement of the downstream state may reduce the credibility and information asymmetry problems. These are the recent developments in the region and the effect of these third parties on the management of this riparian dispute is yet to be seen.

Finally, it has been found that third parties since the early 1990s assisted in bringing riparian parties together for dialogue, increased riparian states' capacity to obtain and exchange information, and provided financial incentives to encourage states to reach and comply with agreements. Although the question of the sustainability of these agreements remains, third parties nevertheless facilitated riparian cooperation between CA states through addressing information asymmetry and commitment problems.

## **What explains the occurrence of third party involvement in Central Asia?**

After the collapse of the USSR, Central Asia became a region of strong strategic interest for the US and the Western world because western powers were determined to prevent the re-establishment of the USSR (Legvold 2003). The Western world was still fearful of the resurrection of the USSR and the return of the Soviet regime. The USA and the West were ready to pour in funding and finance in the form of development aid, loans, and investment promises to facilitate less dependency on Russia.

In addition, CA states became very weak after the collapse of the USSR and there was a very high probability of the outbreak of civil or inter-state conflict. CA is located between Asia and Europe and any international conflict in the region has the potential to destabilise countries far beyond their boundaries (Legvold 2003). European states did not want any major international conflicts to flare up in close proximity to their borders. The impact of climate change was also considered to be a threat to peace in Central Asia. The consequences of climate change in CA were directly related to EU interests. For example, in the report "Climate Change and International Security", it is stated that CA may face potential violent conflict due to the loss of many glaciers in Tajikistan and Kyrgyzstan, which it is believed would have direct repercussions on EU interests (EU 2008).

As for the US, it was important to gain control of the region and not allow any hegemonic state to recruit collaborators to push out the US from the region (Legvold 2003). In addition, the natural resources of the region, as well as nuclear munitions and enterprises that produced military materials including space infrastructure, were the areas that the US wanted to monitor (Burnashev 2002). For example, Kazakhstan possessed a nuclear stockpile and the US was

determined to ensure that nuclear weapons were not spread about the region (Jones and McDonough 1998). Assistant Secretary for European and Eurasian Affairs, A. Elizabeth Jones, stated to Congress in October 2003 that the US had interests in Central Asia in the areas of security, energy and the promotion of democracy (Wishnick 2005, p.4 ). However, after 9/11 the US strategic interest focused on anti-terrorism and their ability to access air bases for American anti-terrorism operations in Afghanistan. The increased interest in CA was also reflected in the increased amount of aid to Central Asia which rose from US\$2.76 billion in 1992-2002 to US\$157 billion in 2004 (Wishnick 2005).

The CA region is also considered as a buffer zone because it borders Russia, China, Iran, and Afghanistan. Such states as Kazakhstan, Turkmenistan and Uzbekistan had large oil and gas reserves, much of which had not been explored at that time<sup>45</sup>. Europe also sought to access untapped oil reserves in Central Asia and energy has remained an important factor for EU involvement and presence in this region (Laumulin 2002).

In light of these geostrategic interests, the 'environmental' issues were a safe and an obvious opportunity for international intervention (Weinthal 2002). Weinthal (2002, p.135) mentions that *"similar to the Soviet period, in which the environment provided a safe arena for political mobilisation against Moscow, the legacy of the environment as a safe issue area quickly enabled the international community to establish ties with the Central Asian successor states."*

Weinthal (2002) concludes that the involvement of IOs, bilateral aid organisations, and NGOs between 1992 and 1998 helped to prevent interstate conflict over water in CA where the states were weak after the collapse of the USSR, therefore acceptance and recognition by the international community

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<sup>45</sup> According to the "Caspian Sea Region" of the US Department of Energy, June 2000, the region's proven oil reserves are estimated at 236-337 trillion cubic feet (<http://www.eia.doe.gov/emeu/cabs/caspian.html>) cited in Weinthal (2002, p.135).

was a way to strengthen their sovereignty (Weinthal 2002). Jackson (1990) argues that states obtain legitimacy through international recognition before they are capable of decision-making internally. For this reason, the CA leaders of the new independent states needed international recognition to legitimise their status internally (Weinthal 2002).

Thus, it was considered a “win-win” situation because the CA states were in desperate need of financial assistance and recognition, while the Western governments wanted to establish a good reputation in the region and influence these new countries by focusing on the environment (Weinthal 2002). For example, Werner Roeder, the head of the World Bank’s Aral Sea Program, mentioned that, “the Aral Sea was not the worst of the problems facing the Central Asian states, but it had a name that could attract aid” (Weinthal 2002, p.135 ). NATO also decided to have a presence in Central Asia in the spheres of promoting the principles of maintaining peace and collecting intelligence about the security policy of CA states (Burnashev 2002).

Through environment-related aid, international actors propped up weak CA states and helped to sustain new independent states after the collapse of the USSR. Third party actors took over the role which was assumed by Moscow during the Soviet period and influenced the internal processes of these new states (Weinthal 2002). Weinthal (2002, p.72 ) concludes that third party actors in CA used ‘side payments’ as inducements for regional cooperation under the conditions of transformation and used them at the state level as a form of compensation to regional constituencies.

The recent emergence of Russia as a major player in CA hydrodevelopment shows the renewed strategic interest of Russia in its former region of influence. Russia is attempting to win back the lost region and solidify its position among the CA states. For Russia, the concern is that outside powers could displace

Russian influence in the CA region and that they could establish themselves in the region in close proximity to Russia (Legvold 2003). Russia renewed a lease in Kyrgyzstan for a military base until 2032 and in Tajikistan until 2042. It also wrote off US\$189 million of Kyrgyz debt. Russia's recent agreements to build the HES on the Naryn river demonstrates that they are investing for the long term, and the entrance of Russia as a new player may bring to a new level the hydropolitics of CA, the sphere which has been dominated by Western donors and IOs since the collapse of the USSR.

### **Conclusion**

The analysis of riparian disputes and cooperation in CA through the transcendence framework reveals that third parties in CA have addressed the securitisation of river disputes, legal ambiguity, credibility problems, and information asymmetry. Cooperation attempts in CA around transboundary rivers has been a process which has resulted in three regional and three bilateral river agreements. Third party involvement has played an important role in the emergence of these agreements. The focus on the utilitarian value of water and benefits that can be created through cooperation, has helped move the water issue to a positive-sum perspective which has led to reaching river agreements. Third parties' financial back up has helped to de-securitise the river issue and change river disputes from being seen from a zero-sum perspective to a positive-sum perspective. Especially in the early years, third parties engaged with the aim and agenda of assisting with the sustainable development of the entire basin which eventually required basin-wide cooperation.

It needs to be emphasised that riparian states' hydro-relations are dynamic and constantly changing. It appears that transcendent problems can emerge at any point in time, and not necessarily in any foreseeable order. As mentioned



previously, transcendence explains both cooperation and conflict. Through this analysis of river disputes and cooperation in CA, it becomes obvious that the nature of transboundary rivers is such that disputes over rivers can still occur, despite river cooperation and the emergence of river agreements. The nature of relations between riparian states over transboundary rivers is constantly changing and dynamic so that river-related disputes can turn into security issues at any time. However, the involvement of third party actors may help to focus on utilitarian aspects of the issue and encourage cooperation. Although the question of the sustainability and effectiveness of these agreements remains, third parties have facilitated riparian cooperation between CA states through de-securitising the water issue and emphasising mutual economic benefits.

In relation to legal ambiguity, third parties promote incorporation of the principles of the UN International Convention in the existing agreements, as well as encouraging behaviour and decisions which are compliant with the principles of the UN convention. These activities can help provide some clarity in relation to ownership issues surrounding transboundary rivers, and provide some guidance based on accepted international norms when undertaking activities on international rivers. In addition, third parties can assist in reaching specific agreements that are unique to a particular basin. The emergence of these specific agreements sets a precedent, and may contribute to international law because these agreements could later become international norms that help to resolve riparian disputes more efficiently.

Third parties played an important role in CA in addressing information asymmetry and commitment problems arising due to the upstream/downstream nature of rivers. In the early 1990s, third parties assisted with capacity building, gathering reliable information and data which at times was withheld or shared reluctantly by riparian states. Third parties encouraged

increased communication between riparian parties and provided financial incentives to motivate states to reach and comply with agreements.

The tension between upstream and downstream states has increased due to upstream states' plans to build new HESs and dams. In this context, Russia has emerged as a new third party player. Unlike other third party players, Russia has engaged via bilateral means, and its involvement can have an influence on future hydro relations in CA. There is the potential that Russian involvement may enhance joint collaboration, or on the contrary, may give rise to conflict. Recent agreements between Kyrgyzstan and Russia to build the Kambarata dam may play a crucial role in relations between Uzbekistan, Kazakhstan, Tajikistan and Kyrgyzstan. Russia, being a major power in the region, may change the balance of power. If Russians are involved in building the dams, Uzbekistan may have to accept that the dams will be built and they may look for opportunities for cooperation to gain benefits from these developments. This type of third party has not been captured in large-n studies but is worth exploring further. Third parties who become involved as investors in HES developments, such as Russia has, may change the hydropolitics in CA.

Finally, third party involvement in river disputes is not a one-off event. Cooperation over transboundary rivers requires a long-term commitment and continued engagement. Third parties undertake various methods and activities to facilitate cooperation. Activities such as conciliation, meetings, conferences, workshops and seminars facilitated and financed by third parties allow the disputing parties to communicate and have constant dialogue. In addition, third parties also undertake capacity building activities such as training, assistance with data collection, and exchange of data and information. Assistance with financing is one of the important levers and incentives to encourage riparian states' cooperation. In addition, the setting up of joint river commissions appears to be used as a conduit for cooperation.

Because interstate relations over transboundary rivers are constantly changing and developing, it appears that there is no sequence in terms of which transcendent problem should be resolved first. All three transcendent problems are interrelated and overlapping. With regard to measures and activities undertaken by third party actors, it is found that all third party activities discussed are necessary to address all three transcendent problems.

# **Chapter VI Discussion and Conclusion: Rivers of Peace and the Role of Third Parties**

## **Introduction**

Previous Chapters have explored statistically and through case study the role of third party actors in the conflict management of international river disputes. Chapter IV identified that third party intervention in the conflict management of river disputes increases the likelihood of reaching river agreements. In addition, Chapter IV also presented various activities undertaken by third parties and the type of third party actors that are involved in river disputes. In Chapter V, third parties' roles in bringing about cooperation over transboundary rivers have been identified. The aim of Chapter VI, therefore, is to analyse and discuss the findings from the statistical analysis and case studies in the context of a transcendancy framework. One of the objectives of this research project is to identify if third part involvement increases the likelihood of reaching river agreements. Another objective is to identify the factors that explain how and why third parties are able to facilitate cooperation and explain the occurrence of third party intervention. This Chapter therefore discusses if the suggested hypotheses are confirmed by the findings of the study and if the suggested transcendancy framework has explanatory power to explain the role of third parties in conflict management of river disputes. This Chapter also discusses the empirical and theoretical implications of the findings and suggests recommendations for future research.

Chapter VI consists of four main sections. The first section discusses the role of third parties in dealing with securitisation/utilisation issues in the context of the empirical findings. The next section analyses the role of third party actors in dealing with the legal ambiguities which are present in transboundary river

contexts. The third section follows with a discussion of the role of third parties in handling credibility problems. Thereafter, in section four, the findings of the study on the occurrence of third party intervention are discussed. In the concluding section, the transcendency framework is once more summarised and explained in light of the findings. The visual illustration of the transcendency framework and the role of third parties are also provided. This final section also summarises the principal conclusions of the study and situates these findings in the context of existing research. In this section, the policy and theoretical implications of the study and recommendations for future research are also discussed.

## **The role of third parties in hydro-peace: Water utilisation and securitisation**

The statistical findings of this study suggest that third party involvement, along with power preponderance, increases the likelihood of reaching river agreements. The implication of this result is that third parties do have influence on riparian states' decisions to move away from non-cooperative zero-sum positions to cooperative positive-sum positions. According to the transcendency framework, this can be done through shifting the focus from a superordinate to a utilitarian concept of river water.

A statistical study has been used to analyse different measures and activities that were undertaken by third party actors on an aggregate level. Third parties appear to utilise both diplomatic and economic means of involvement to enhance river cooperation and link river cooperation to the developmental needs of states. As mentioned in previous sections, river disputes arise due to the aspirations of states to develop and utilise the rivers to serve their developmental needs. This orientation makes states more susceptible to

economic incentives and more open to mutually beneficial interaction. River water is considered an economic resource that has utilitarian value and many creative solutions can be found to create cooperative relationships. In this regard, according to the descriptive statistics, it is IGOs such as UNDP, UN as well as international development banks, that are the most frequently involved actors. The diversity of third party actors reflect the multidimensional aspects of river disputes, allowing various actors including IGOs, development banks, states, and regional organisations such as NATO and the OSCE, to promote regional cooperation over the transboundary rivers.

These findings present interesting empirical patterns in terms of what type of third party actors get involved in different geographic regions. International development banks such as the World Bank and the ADB are some of the most frequent third party interveners in Asia and Africa compared with other parts of the globe. For example, the review of the ICOW dataset<sup>46</sup> on river claims has revealed that no international development bank has been recorded as a third party intervener in the Western Hemisphere, Europe and Middle East, while in Asia and Africa there was no single case when disputes were submitted to arbitration or adjudication, as was the case in Europe. Although this could be a reflection of how the data was collected, such explicit mediation efforts by the World Bank in India or in Central Asia could have been recorded in other regions, too. Although these differences in the types of third party actors can be explained, these findings may reflect the fact that most countries in Asia and Africa are developing nations, which often lack the capacity, financial resources and expertise to undertake conflict management activities compared to the Western developed nations. Therefore, the socio-economic conditions of these

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<sup>46</sup> As mentioned in Chapter IV, before collecting new data on third party involvement, the existing ICOW dataset on river claims had been thoroughly explored. The description of third party actors in the ICOW dataset is provided in Appendix VII.

states stipulate the kind of third party actors that are involved and activities they undertake.

According to the descriptive statistics of this study, financial assistance is one of the most frequently used tools by third parties. It appears that third parties' financial back up has helped to de-securitise river issues and change the river disputes from being zero-sum perspectives to positive-sum games. On the one hand, this helped to focus on the utilitarian value of water, and the benefits that can be created through cooperation. On the other hand, funding or aid for river cooperation can be an instrument which maximises the relative gains for one or both contending parties. A riparian state which experiences river disputes may not deem river cooperation beneficial, with the existing resources which are available internally, until a third party provides the required funding, resources and expertise to make river cooperation a win-win situation.

The analysis of the World Bank's involvement in Central Asia shows that the WB provided extensive financial assistance for various river-related projects. These resources might have not been available internally, and without these projects and financial injections, the situation in CA over transboundary rivers could have been more conflictual. Although Weinthal (2002) argues that the financial assistance from third parties in CA was used by riparian states to solidify their position after independence and satisfy internal needs, financial assistance was clearly a strong incentive for CA states to conclude river agreements. The analysis of the CA case shows a clear link between financial assistance and the emergence of river agreements. These findings are also in line with other empirical cases. Financial incentives, for example, were one of the tools used by the World Bank and GEFs (Global Environment Facility) to facilitate riparian cooperation between Tanzania, Kenya and Uganda in the

Lake Victoria project (Okaru-Bisant 1998). Financial incentives were also used in negotiations between India and Pakistan over the Indus river (Biswas 1992).

One of the aspects which concerns river issues is the opportunity for third party actors to get involved through development projects. It appears that this is an effective way to facilitate riparian cooperation. This is linked with third party actors' attempts to shift the focus on utilitarian aspects of the issue over transboundary rivers. As mentioned previously, the transcendent aspect of transboundary rivers is that it lays the ground for cooperation through interdependency. This strategy was also used by third party actors in Central Asia. When CA states approached the World Bank for assistance regarding the Aral Sea, the WB clearly stated that without river agreements in place and cooperation, there would be no assistance provided. In addition, the WB also undertook a feasibility study which communicated the benefits of cooperation. This approach resulted in river agreements. This approach by third parties is not unusual, as shown by other existing literature. For example, third parties such as the ECAF (Economic Commission for Asia and Far East) in the Mekong region conducted feasibility studies of the potential joint development of the Mekong river and concluded that the joint development of the Mekong had immense developmental potential for the region (Thi Dieu 1999). Third party actors also emphasized that riparian cooperation is essential for the success of any project given the interdependency of the riparian states. For example, despite the events that occurred in the wake of the First Indochina War, riparian states unanimously agreed to cooperate (Thi Dieu 1999). Therefore, the involvement of third party actors may help to focus on the utilitarian aspect of the issue and encourage cooperation.

It has also become evident, especially after recent tension over the dams built on transboundary rivers and the emergence of agreements linking energy and



water, that the development and economic agenda of CA states appears to have overtaken environmental concerns around the Aral Sea. This is explained, as mentioned earlier, by the fact that water through its utilitarian value can also bring parties together, turning the dispute into win-win opportunities. Therefore, for third parties it was an opportunity to intervene under the guise of development assistance and focus on the utilitarian aspects of managing transboundary rivers. As mentioned previously, the agreements and the agenda of third party involvement in the early 1990s were related to environmental concerns for the Aral Sea. Later agreements linked the issues of transboundary waters with energy and the trade of resources. Subsequently, third parties have also shifted, or at least incorporated, development and economic issues in their dealings and negotiations over transboundary rivers in the CA context. For example, the idea of trade in natural resources was supported and pushed by third parties in the resolution of transboundary river conflicts in CA. Third parties helped to capitalise on the existing states' differences and induced trade and other linkages. Petroleum, gas and coal can be traded to be used to generate power during the winter in exchange for greater water release during summer.

However, at the same time, even though innovative and utilitarian solutions exist, river water is a political issue and the political aspect needs to be resolved. One of the most important findings is that third party actors facilitate constant communication. Activities that facilitate increased communication are one of the most frequently used tools to deal with the political aspects of river disputes. The nature of relations between riparian states over transboundary rivers is constantly changing and dynamic, which requires constant communication. Without constant communication, river-related disputes can turn to security issues at any time. In addition, through mediation, for example, third parties can propose options and solutions. Seminars and conferences also

help expand an understanding of the positions of other parties. This in turn can lead to informed decisions being made, minimising decisions based on wrong assumptions. In addition, the transaction costs of negotiation, and costs associated with meetings, seminars and conferences could be burdensome for riparian states, and without third party assistance, this inter-state communication would often be minimal.

As evidenced in the CA case, constant dialogue was found to be an important aspect of river cooperation. Third parties organized various conferences, seminars, and training sessions, thus bringing together the representatives from the respective riparian states to discuss issues related to transboundary rivers. The meetings allowed for the exchange of opinions and ideas and gave all actors an opportunity to hear the other side of the story. Also, meetings were arranged by third parties for the highest political leaders, where good offices are provided as a neutral place to talk. Thus, constant communication and exchange of information can help to focus on the utilitarian aspects of river issues.

However, the study does not suggest that the superordinate value or symbolic meaning of water needs to be stripped away for resolution to occur. Rather, it is suggested that the superordinate value of water should be incorporated into discussions, but in a positive-sum manner. This is because, as shown in the CA case, water's superordinate value indeed restrains upstream states from undertaking any radical measures that can harm downstream states. So, rather than neglecting the superordinate aspect of water, it is better to utilise this aspect for conflict management purposes by pointing to the potential tangible benefits that could flow from cooperation.

These findings have important implications for the international security and climate change debate. It appears that existing research connecting climate change and international conflict base their arguments on the assumption that water is a zero-sum issue and therefore relate potential water scarcity to the outbreak of conflict. For example, Chellaney (2011) argues that water stress resulting from climate change in Asia is a potential ground for violent conflicts. Yet, a shift of focus to the utilitarian aspect of water, that is, on the final product of water usage or on the economic value of water, may provide win-win solutions for all parties and decrease the tension. For example, water which is stored for electricity production can well be traded for other energy resources. When water is diverted for irrigation purposes, investment in water-efficient technology can be a solution to downstream riparian concerns. In other circumstances, tapping into the water resources of neighbours who are more water-abundant is another solution. For example, in a dispute between Bangladesh and India, there were suggestions to involve water-abundant Nepal in the negotiations in order to utilise their waters through linking national canals. Therefore, the findings of this study that examined conflict management mechanisms demonstrate that the literature on climate change and international security may provide overly pessimistic views of the consequences of climate change. Yet, if dealt with properly, the water disputes can be managed in a way that mitigates the outbreak of militarised conflicts.

### **The role of third parties in hydro-peace: Legal ambiguity**

Ambiguity regarding international law on transboundary rivers, and the ownership issues that arise due to transcendancy, lay the ground for disputes between riparian states. Riparian states may adopt extreme and opposite doctrines regarding utilising transboundary rivers. In this regard, third parties undertake various activities to provide some clarity in relation to ownership issues. One of the activities third parties undertake is to disseminate and

promote the principles of the UN International Convention through conferences, seminars and workshops. Another way is through the use of financial incentives. Third parties can sometimes stipulate that the financial assistance will only be provided on the condition that river agreements should incorporate the principles and values of the UN convention.

This was the case in Central Asia. After extensive study of the problems related to the Aral Sea basin, the World Bank encouraged CA riparian states to sign a new river agreement that took into account some basic principles of the UN convention. These findings are generally in line with the previous literature that argues that third party actors encourage cooperation via financial incentives. However, unlike the previous literature which explained the importance of financial incentives only vaguely and without explaining what they are used for, the current study shows a more nuanced explanation of how financial incentives are also used to disseminate and promote the integration of the UN conventions in the agreements.

In addition, third parties can sometimes guide state players, through incentive strategies aimed at influencing behaviour and decisions, towards compliance with certain norms and principles. For example, the World Bank asked Tajikistan to halt construction on the Rogun dam until they undertook a full assessment of the project and its impact on the environment. Upon compliance, the World Bank promised to assist with obtaining funds for the project. Although the implications of this intervention is as yet unknown, it is hoped that the findings of the independent assessment undertaken by this third party, which is perceived to be neutral, can reduce tension and alter the current standoff regarding the dam and so lead to more constructive negotiations. Such intervention is very subtle, but it can have important implications for the course of the negotiations. However, such interventions are not captured in

many cases. Yet, as this study shows, these smaller scale activities on an aggregate level can have positive affects over a long period of time.

In addition, the study demonstrates that third parties can help with drafting specific agreements which can be considered unique to a certain extent, and which can be tailored to a particular basin. Emergence of these specific agreements sets precedence, and contributes to international law which may become later an international norm. Third parties, in relation to certain legal ambiguities, promote the principles of the UN International Convention to be incorporated in the existing agreements, as well as encouraging certain behaviour and decisions which are compliant with the principles of the UN convention.

Tir and Ackerman (2012), in this regard, find that better designed institutionalised river treaties can reduce the risk of militarised water security conflicts. According to the findings of this study, third parties contribute to how the agreements are designed. Third parties encourage parties to incorporate the internationally agreed principles of sharing relevant data and information, the “no harm” principle, and conflict resolution tools in river agreements. This research thus contributes by showing that third party actors not only encourage riparian states to reach a river agreement, but also assist with the design and content of the agreement.

Thus, third parties regarding the legal ambiguities relating to transboundary rivers deal through the same type of activities they deal with in respect of other transcendent problems. They facilitate communication and disseminate knowledge and information via workshops, training, conferences and seminars. As for the role of third parties in addressing legal ambiguity in CA, third parties, through national and regional seminars and workshops, try to

disseminate and promote international UN conventions. Third parties attempt to promote certain behaviour among riparian states in order to deal with this legal ambiguity, and through their own water policies or through various projects and conferences, disseminate and educate interpretations of international conventions of the UN.

These communication-enhancing activities help the riparian states exchange views on what grounds other parties make claims regarding the legal status of shared rivers. These activities can also be educational and help water specialists and lawyers to clarify certain terms and norms in international conventions. Financial incentives are also used the same way to encourage certain agreements that incorporate cooperative principles. These legal documents can help to clarify the positions of other riparian states in relation to the legal status of transboundary rivers. Riparian states ultimately may have to give up their previous position of absolute integrity or absolute sovereignty and recognise the rights and responsibilities of riparian states sharing the same river.

In the larger picture, the international laws governing transboundary rivers suffer legal ambiguity and lack of enforcement mechanisms similar to other environmental conventions. This is partly due to the nature of international rivers which can be considered as common pool resources, but which are still governed by national legislations. Increasingly, the interdependent nature of transboundary rivers, and other ecological resources such as air pollution, has been recognised by the global community, and the solving of these problems requires giving up some of the sovereignty rights exercised by sovereign nations. In this regard, as demonstrated by this study, third party actors appear to play a significant role in the dissemination and elaboration of certain international norms. In light of the security implications of climate change and water scarcity, the rights and responsibilities of states over shared resources

should be based on mutual recognition of interdependency in order to mitigate the escalation of conflict.

Thus, there is a need for shared common ground and principles to which every party agrees. However, the ambiguity in international conventions over shared transboundary rivers only exacerbates the problem, therefore, common principles and normative frameworks need to be promoted and explained. Such work is currently undertaken to some extent by third party actors such as the IGOs, NGOs, and international development banks, at least in Asia and Africa. But there is still much work required so that all states sharing rivers can recognise the basic principles promoted by the UN. The findings of this study demonstrate that third party intervention can facilitate cooperation by addressing legal ambiguities and encouraging cooperative behaviour.

### **The role of third parties in hydro-peace: Information asymmetry and commitment problems**

In an upstream/downstream scenario, third parties are found to address information asymmetry and commitment problems. The findings of this study largely confirm the proposed hypothesis. Third party actors assist with capacity building, help with gathering reliable data and its exchange, facilitate constant dialogue and communication, and provide financial incentives in order to address the problems of information asymmetry and credibility problems.

Riparian states tend to withhold or manipulate data and information regarding water, since they realise that this information can be used against them. For example, as shown in the CA case, third parties implemented projects such as the information system WARMIS. Assistance can also be given with finances and expertise to set up the GIS data monitoring systems and database which is

automatically updated in real time and which can be accessed by all riparian states. In the case of CA, this assistance with data collection and information provision was necessary because it has helped to increase the trust between upstream and downstream states. This is because the water-sharing arrangements in their agreements are calculated in percentages, and access to reliable information and data on water availability has reduced tension. For this reason, third parties helped to build the infrastructure and capacity to allow for information gathering and exchange.

Any formal cooperation in the form of an agreement raises questions of compliance with the terms of the agreement. IOs' ability to increase compliance with agreements is a more important factor in maintaining cooperation than punitive actions that can be enforced in case of default by a state (Abbott and Snidal 1998). River disputes normally involve many actors, as well as complex economic, political and distributive problems, and in such cases, decentralised efforts, in this case, bilateral attempts, to resolve the issues could be ineffective due to opportunism and transaction costs (Abbott and Snidal 1998). In addition, third parties in riparian disputes can use financial support and aid to facilitate negotiation in a way that the terms of agreement take into account a proportionate distribution of gains (Snidal 1991).

Analysis of the CA case shows that early agreements have been reached because third parties required all states to cooperate in order to obtain financial assistance. This collective bond tied all parties, and reduced the issue of commitment problems. In addition, third parties through joint river commissions can also address the issue of state incapacity, deal with emerging new issues and help to clarify ambiguities in agreements. Apart from the assistance with data collection on water and exchange, third parties can undertake independent feasibility studies on certain river issues. Such



independent analysis and study gathers the required facts and information, which can be trusted by riparian parties. The upstream/downstream relationship can give geographical advantage and tools for control for upstream states. Downstream states in CA oppose dam constructions in upstream states. In response, , the World Bank is undertaking an independent assessment of the environmental and socio-economic impact of dam construction. The WB has also requested a halt to the construction of the Rogun dam until it has completed its assessment.

In addition, regular communication and dialogue takes place with the assistance of third parties. Third parties finance various joint projects and provide required expertise to address the issues related to transboundary river management. These joint projects also help to develop collaborative styles of work and assist to increase communication between riparian parties. Through various projects organised by third parties it was possible to arrange face-to-face meetings with representatives of five CA countries to exchange ideas and increase trust between disputing parties.

Yet there were also instances when some agreements were not followed through because of some unresolved issues. Third parties can facilitate some points of agreement between riparian states, but not necessarily resolve all existing issues. Although this may raise the question of sustainability of river cooperation, the presence of an agreement at least can provide the basis to build further negotiations. This phenomenon also needs to be considered in the context that interaction over transboundary rivers is dynamic and constantly changing. It appears that transcendent problems can emerge at any point in time, and not necessarily in any particular order. As mentioned previously, transcendency explains both cooperation and conflict. Through the analysis of river disputes and cooperation in CA, it becomes obvious that the nature of transboundary rivers is such that, along with river cooperation and the

emergence of river agreements, continuing disputes over rivers can also emerge.

For example, despite the presence of several river agreements, the tension between CA riparian states has increased due to upstream states' plans to build new HESs and dams. In this context, Russia has emerged as a new third party player and can take an important role in the region. Russia's involvement may enhance further cooperation, or on the contrary, may intensify the existing disputes. Finally, the development of a water regime is a long-term process. For example, Haftendorn (2000) mentions that it took 50 years to achieve an agreement on the Rhine river and develop the Rhine regime. Therefore, sustainable cooperation may require long-term commitment and engagement from all parties.

However, third party involvement is not the only strong predictor in river cooperation. Power imbalance appears also to be conducive for the emergence of river agreements. Although it is possible that a dominant state coerces weaker states to cooperate, it is also possible that stronger states can create cooperation by giving more concessions to weaker states. The findings of this study also indicate, as shown in the previous chapter, that more powerful states give 26% more concessions in agreements than weaker states. In the context of the existing literature, the findings of this study support the existing claims of the importance of power preponderance for the emergence of river agreements.

Lowi (1993) explains that cooperation occurs via coercive methods by forcing weaker states towards agreements. Yet, as shown in this study through an analysis of concessions in the context of power dynamics, cooperation over rivers can occur via incentives and greater concessions by more powerful states. The utilitarian aspects of transboundary rivers makes riparian states

interdependent and encourages them to seek cooperative outcomes. In addition, the upstream/downstream relationship can also balance out the power preponderance, allowing weaker but upstream states to extract more concessions. Basically, in the context of bilateral negotiations, the same methods such as financial or other incentives that are used by more powerful riparian states to encourage cooperation, are used by third parties when they are involved in riparian disputes. Although this aspect has not been explored in detail, the study by Dinar (2008) can complement this conclusion by showing that side payments are used by more powerful states to promote river cooperation.

As for the role of third parties, it appears that third party involvement results in equal concessions from both weak and strong states, while bilateral negotiations result in stronger states giving twice as many concessions as weaker states. This can be explained by the fact that third parties become involved only when bilateral negotiation attempts fail, and third party involvement can help to even out the potential benefits so that both parties have to give some concessions to come to an agreement. For example, in the CA case, more powerful downstream Kazakhstan was reluctant to acknowledge the claims made by upstream Kyrgyzstan on sharing the maintenance costs of water infrastructure. However, with the efforts of third parties behind the scenes, Kazakhstan conceded and agreed to pay partially for the maintenance costs of the water reservoir.

Another significant factor in this study is water scarcity, which makes it more difficult for states to reach an agreement. The findings of this study are consistent with many other works which argue that the less water particular states have, the less likely they are to cooperate (Cooley 1984; Gleick 1993; Klare and Myers 2001). Water scarcity also needs to be considered in the

context of its importance to the country's economy and that country's dependence on water. Measurement of water in physical volume may not always reflect the true scarcity. Inefficient usage of water, even when water is abundant in physical measurement, can create scarcity. For example, Uzbekistan is the most dependent state on water originating outside of its territory, yet it is the country which consumes the most available water in CA. Water in Uzbekistan is not used efficiently, thus creating scarcity.

The findings of this study have implications for the broader mediation and conflict management literature. The importance of mediators in dealing with credibility problems in the general mediation literature is not new. However, third party actors dealing with the conflict management of river disputes do not necessarily deal with credibility problems through mediation. Third parties in river disputes can use other non-diplomatic tools, along with mediation, to overcome information asymmetry and commitment problems. Such tools can include capacity building activities that increase data and information exchange, the provision of technology and technical expertise, and financial assistance. In the general mediation literature, such measures undertaken by IGOs, development banks, and other organisations in conflict-ridden communities have generally been overlooked. As shown in this study, the activities of third party actors can have an effect on cooperation through development assistance and other mechanisms.

### **Occurrence of third party involvement in river disputes**

The findings of the analysis exploring the factors that explain where third parties intervene in river disputes are important in many respects. First, it helps to understand the factors that promote the occurrence of third party intervention in river disputes and brings forward some explanation as to why and under what circumstances third party intervention takes place. It appears

that the more rivers riparian states share, the less likely they are to experience third party involvement in their river disputes. It has also been found that variables that indicate the strategic interest of third party actors in the region, such as previous mediation and hostility to major western powers, are also significant indicators of where third parties get involved.

When states share more rivers, this may raise a multitude of issues as well as a multitude of opportunities between riparian states. None of the parties may be able to control the tap because both states can be upstream or downstream in relation to several rivers, which may reduce the commitment problem so that states are able to reach a solution bilaterally. Unlike riparian states that share one river, states that share several rivers have an option to utilise other rivers which may diffuse the tension.

In addition, referring to the term of “hydraulic civilisations” developed by Wittfogel (1956), historically civilisations are formed around river systems because access to river waters and control of river resources allowed rulers to control their populations. Therefore, control over water resources plays an extremely prominent role for states where the social and political structures have been formed around the development of rivers. Present-day states that were formed around these large river systems are also the states with the largest populations in the world. According to Clayton and Dent (1973) some of the examples of “river civilisations” are Ancient Egypt (Nile), the fertile crescent (Tigris/Euphrates), Ancient China (Yellow River), and Ancient India (Indus).

According to this study’s dataset, states such as China, India and Nigeria are the states that share the largest number of rivers with other riparian states and also experience a lower involvement of third parties. These countries originated

from “river civilisations” and some have the largest populations in the world. Due to the utmost importance of river waters to these states, it is not surprising that such states are predisposed to resolve the issues without third party intervention where possible. In cases when states cannot resolve their river disputes bilaterally, third party actors can get involved and assist the disputing parties to resolve the issues peacefully. However, due to the size of these states’ economies and population, the leverages offered by third parties should be substantial to move both sides to a “zone of agreement”<sup>47</sup> (Raiffa 1982; Fisher and Ury 1981) and may require substantial resources.

The results of this study suggest that if one of the riparian states has a hostile relationship with major western powers they are less likely to experience third party assistance. For mediation to take place, the parties must be willing to accept the mediator and there should be a mediator that is willing to offer its services. According to the descriptive statistics, the majority of third party actors involved in the conflict management of river disputes are international development banks, World Bank, UN, IGOs and western states (principal mediators). When one of the riparian states is hostile to major western powers, it potentially limits the supply of third party actors willing to get involved. The disputant may also not be willing to accept the mediator from an institution or organisation that is affiliated with their enemy states. There will be fewer third party actors who will be willing to engage with such an outcast state, as well as the outcast riparian state being less likely to be open to engage with mediators that they perceive may represent western interests. As for the potential minor third party actors, they may not wish to get involved due their inability to bear such costs.

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<sup>47</sup> The term “zone of agreement” was taken from Raiffa (1982).

The finding that major powers dominate the conflict management of river disputes is in line with the general mediation literature. In this regard, Touval and Zartman (1985) point out that mediation is a way for the major powers to exert international influence. For example, in the Central Asian case third party actors provided much assistance to transboundary river cooperation. This is because after the collapse of the USSR, the US and other major western powers had a strategic interest in establishing their influence in this region to completely disengage the dependence of CA states upon Russia (Weinthal 2002). A similar project was initiated by third parties in the Mekong region. First, third parties such as the US and the Western bloc had a vital strategic interest in the region because during the Cold War they wanted to prevent the Mekong region coming under Soviet influence (Thi Dieu 1999). Second, as mentioned earlier, transboundary rivers have high utility value and provide opportunities for economic development which third parties fully utilised to promote their strategic interests.

Unlike the Mekong basin case, the dispute over the Euphrates river between Turkey, Syria and Iraq did not attract much third party intervention. Syria and Iraq, having more hostile relations with the international community, were not able to attract third party involvement and mediation in their dispute with Turkey. Such findings imply that hostile relations with powerful states are reflected negatively on the riparian state's standing in the international community and its ability to attract third party interveners. Zawahri (2009), for example, in his study of the case of the Euphrates and Tigris river disputes, states that there was no third party mediation attempted between riparian states despite Syria and Iraq attempting to take the dispute to the international community. Turkey, as Zawahri (2009) notes, has powerful friends to prevent international community involvement in the dispute which potentially may be harmful to Turkey's interests (Rubinstein 2001, cited in Zawhari 2009). Iraq

and Syria are not on good terms with the major Western powers, and therefore were unable to lure the mediators to respond to their pleas.

In addition, the transcendency framework can potentially be used as a conflict management framework. For example, disputes between Turkey and Iraq and Syria can start focusing on solutions based on the utilitarian aspect of water, while acknowledging the superordinate value of water and its uniqueness. Syria is believed to be harbouring and supporting the Kurdistan Worker's Party and Kurdish terrorists within their territory due to the strained relations resulting from water disputes with Turkey. Turkey can potentially benefit if they either consider the water needs of downstream states by either investing in advanced technology to reduce water consumption for irrigation needs, changing to less water-consuming crops, or reducing the irrigated areas to release required water downstream. This move may help Turkey to tackle Kurdish terrorist attacks due to improved Syrian relations.

In this regard, third party assistance can play a crucial role in bringing parties together to communicate these potential benefits. Some potential third party assistance with finance or technology expertise can make this possibility even more attractive and plausible. Third party assistance with information and data sharing, facilitation of communication, and assistance with setting up joint institutions may help to tackle credibility problems and legal ambiguity.

Another important conclusion is that if riparian states have experienced mediation efforts previously, they will invite third party intervention again. This is in line with the previous mediation literature which supports this claim (Melin and Svensson 2009). This finding is related to the strategic interest of third party actors. When third party actors have a strong interest in resolution of the conflict or are biased, they are more likely to offer mediation again (Greig



and Regan 2008; Touval and Zartman 2001). For example, in the Mekong case, the UNDP was actively involved in the 1995 river agreement and encouraged riparian states to cooperation in the Mekong Committee framework. Therefore, the UNDP had an interest at stake to keep the Mekong Committee as it would be a serious blow to UNDP if the committee failed, because so much funding and effort had been invested in the river project (Biswas 1999).

The study also finds that contrary to expectations, with upstream/downstream relationships, the power distribution and upstream hegemonic position does not necessarily explain and determine the occurrence of third party involvement in riparian conflicts. Specifically, the finding that the upstream hegemon position does not necessarily prevent third party intervention is contrary to conventional expectations and some existing literature (see Lowi 1993). Most literature, in explaining hydropolitics, is dominated by realist explanations of cooperation and conflict in river disputes. However, it appears that the presence of a powerful upstream state does not necessarily prevent the occurrence of a third party, as was the case mentioned above between India and Pakistan. Even though upstream/downstream patterns may increase the cost of mediation, third party actors are prepared to intervene when they have a strong strategic incentive to bear the cost, and assist to resolve the dispute.

Such factors as water availability, level of economic development, and colonial history and level of conflict do not play a significant role in the occurrence of third party intervention. Even though water scarcity was found to be linked to increased militarised disputes in previous literature, there is no evidence according to the current study that water-scarce states may experience higher levels of third party involvement in their river disputes. Similarly, states that were former colonies are not necessarily more likely to attract third party involvement in their river dispute than states that were not colonised; the

chances for third party assistance are the same whether they were former colonies or not. Also, the level of economic development and intensity of conflict do not play significant roles either. It is rather a third party's strategic interest in the resolution of disputes, as well as riparian states' openness to the international community, particularly the riparian states' relation to powerful Western states, which determine if the riparian states experience and expect third party assistance.

## **Conclusion**

This research project has set out to study the role of third party actors in the conflict management of river disputes. The main purpose has been to explore whether third party involvement in conflict management of river disputes increased the likelihood of reaching river agreements. Also, this study sought to identify how and why third party actors were able to increase the likelihood of reaching river agreements. The study aimed to explore the factors that would explain the occurrence of third party intervention in river-related disputes. Despite the increased involvement of third party actors such as international development banks, international organisations, and states in the conflict management of international river disputes, the discussion of their role in the existing literature was limited. Therefore, the aim of this study was to contribute to knowledge on how to handle emerging international river disputes by undertaking a large-n statistical study in Asia and Africa, and a process-tracing case study in Central Asia.

The large-n study allowed for an exploration of the effects of third party involvement in the emergence of agreements across a large number of cases, including cases without third party involvement. This approach helped to address the selection bias and identify the effect of third parties.

Supplementing these findings from the detailed CA case study allowed tracing

the processes that explained a third party's role in riparian cooperation. In addition, this combined method also allowed linking the aggregated data from the statistical and descriptive findings to a particular case showing how third party activities and actors actually induce a cooperative environment. Thus, while the findings from the large-n study confirmed that third party involvement increases the likelihood of reaching river agreements on a larger scale, the detailed case study helped to explore how and why third parties facilitate riparian states to reach agreements.

In addition, focusing only on contentious issues over rivers has revealed that interaction over river issues between states and third parties is dynamic, and cooperation and conflict can occur simultaneously. Despite an agreement being reached, new issues may still arise. Furthermore, disputes over river water allow for the employment of diverse conflict management tools. Unlike disputes over territory, ethnic and religious issues, which are probably less susceptible to such measures as data gathering, feasibility studies or assistance with technical expertise, river disputes can accommodate the utilisation of wider conflict management tools. In river disputes, third parties' assistance with the collection of data on water availability, feasibility studies on particular water infrastructure projects, or assistance with technology, are found to decrease tension. For this reason, therefore, there was a need for an expanded notion of third party interveners. Such broader conceptualisation of third party involvement in the context of river disputes confirmed that other non-traditional methods of third party intervention are not only used in the conflict management of river disputes, but also contribute to the emergence of river agreements.

While there is extensive literature which explores the role and effect of mediation in conflict management, less discussion exists in the case of river

disputes where, in a more subtle way and on a long term basis, mediating roles can be played by development agencies and banks, international organisations and international NGOs. While small scale activities such as seminars, conferences, workshops, projects and feasibility studies may not bring immediate results, the systematic observation of a number of such activities over a long period of time can reveal the pattern and effect of such activities on interstate relations and cooperation. Such an observation was possible with the quantitative approach used here, and it also differentiates the current study from previous literature.

In addition, the findings of the present study about the importance of financial incentives are also in line with previous research on third party mediation in river disputes (see Zawahri 2009; Kirmani and Le Moigne 1997; Wolf 1997). Much of the existing literature emphasises that third parties are successful when they support their intervention with financial backup. However, these previous studies lacked a nuanced explanation of how and why there was a need for financial support. In this regard, the present study contributes by explaining how and why financial support facilitates cooperation through using the transcendancy framework.

Unlike previous research which neither provided nuanced explanations nor a single framework, this study situates the findings from the quantitative and qualitative approaches into one analytical framework and provides a holistic picture of how and why third party actors promote riparian cooperation. In this regard, the current study explains cooperation in river disputes through the transcendancy framework. The transcendancy framework thus explains the causes and characteristics of disputes over transboundary rivers and why these river disputes arise. The study argues that there are three major problems that arise over rivers that give rise to disputes. In order to reach an agreement and

cooperation, these transcendent problems such as securitisation/utilisation, legal ambiguity and credibility problems need to be addressed.

Third party actors are found to help riparian states to address these issues. The findings of the study indicate that third parties are able to do so by facilitating communication, sharing and obtaining information, and providing financial incentives and technical expertise. Third parties utilise various techniques such as feasibility studies, fact finding missions, meetings, seminars and conferences, the setting up of river-related projects, mediation, conciliation, and financial incentives to bring about cooperation between the parties over transboundary river disputes.

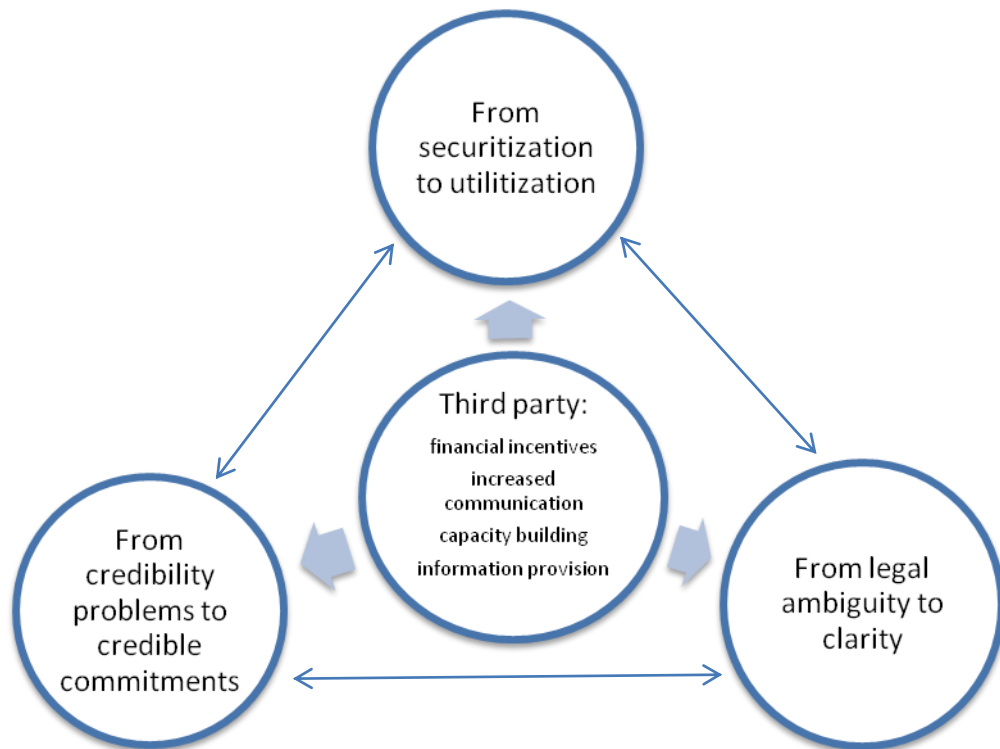
By analysing the manner in which the three features constituting the transcendency framework work, it appears that the three components of transcendent problems do not arise in any particular order or sequence and can occur in parallel with each other. This study thus demonstrates that all three features of the transcendency framework carry relatively the same importance. Addressing one component of the transcendency issue can help to reinforce another. For example, in a case when water issues are securitised, third party involvement may help to shift the focus towards utilitarian aspects by persuading state actors, or by identifying how cooperation over water is a positive sum issue.

The first component of the transcendency framework such as securitisation/utilisation shows that water with its symbolic and life-giving attributes can be construed as a resource for which states are ready to fight. The threat of military means to resolve any disruption to river flow is presented as if the dispute over water is a zero-sum issue and intractable. Yet, water is also used for tangible and utilitarian purposes which allow for considering water as

a normal economic resource. Thus, the transcendence framework acknowledges water's symbolic meaning and its life-giving attributes while at the same time considering the ultimate use of water so that mutually beneficial solutions can be found. This can be done by promises of financial incentives, by undertaking feasibility studies and through constant dialogue in order to identify the opportunities for mutual benefits. This step can help to start negotiation, and help open up perspectives that cooperation over river waters is more beneficial than is perceived.

Addressing credibility problems can further help to de-securitise the water issue, which may result in reaching river agreements which formalise the positions of riparian states, their rights and obligations, thereby contributing to the furtherance of international law formation. If the agreement is successful, over time credibility issues can be minimised and more trustful and sustainable cooperation can prevail. Then third parties help to clarify the positions of riparian states so that those states do not undertake unilateral action regarding rivers, or at least encourage them to recognise the rights of other states to river water. This progress can further be solidified by the provision of financial assistance, capacity building, and information provisions, in order to address credibility issues.

The visual illustration of the process described is provided below in Figure 11.



**Figure 11 Transcendancy framework**

The findings of this study have theoretical and practical implications. From a theoretical perspective, one of the important contributions of this research inquiry is the development of a *transcendancy* framework through which third party intervention is explained. The framework can be utilised not only in explaining the role of third parties in the facilitating of cooperation but also within the general scholarly field studying conflict and cooperation in international river systems. It also has explanatory power which can help to assist not only in furthering theoretical developments, but also with the policy community. This framework encompasses principles of considering the issue/resource over which the dispute arises from its inherent characteristic and its outward perception by actors, from a normative perspective and a bargaining perspective. The same principles can be applied in exploring the reasons why, for example, ethnic disputes arise or why conflicts over territory arise; the disputes over various issues can be considered from their inherent

characteristics (e.g. sacred) and how these issues are presented. An issue can also be considered from its normative perspective, or if there is anything specific about the particular issue that makes the resolution of this issue difficult to deal with via legal means. Lastly, if there is anything specific about this particular issue that causes bargaining failure.

This study is also clearly linked and contributes to a larger debate on the security implications of climate change. First, if climate change does have security implications, then appropriate policy measures need to be considered to adapt to these changes. Indeed, Klein et al. (2007) mention that due to the consequences of climate change, adoptive measures are unavoidable. One of the adoptive measures is the presence of river agreements that can help to manage emerging conflicts over water in a peaceful way. In this context, this study explores the role that third party actors play in assisting states to manage river disputes and reach river agreements. Second, while the studies focusing on the connection between water scarcity and the emergence of conflict are important, exploration of the conflict management mechanisms of existing water disputes may provide better potential policy responses. Empirical studies that do not take into account all these measures, efforts and activities by international organisations, development banks, and intergovernmental organisations may overlook the conflict management mechanisms that promote cooperation and over-emphasize the negative impact of climate change on international security.

In this regard, Tir and Stinnett (2012) argue that even though water scarcity increases the chances of conflict, more institutionalised agreements with the presence of joint international institutions mitigate the escalation of military disputes. Tir and Stinnett's (2012) study finds that agreements that incorporate international river joint institutions are one possibility for preventing a



militarised outcome in river disputes. However, the present research, which has focused on conflict management specifically, reveals that these joint institutions are the outcome of negotiated arrangements and in many cases parties experiencing a dispute may fail to set up such institutions on their own. Third party assistance in this regard has played an important role in CA. These institutions need to be functional, and in order to undertake the activities which promote cooperation, they need to have resources and capacity. But without external support for low income nations which are particularly present in Africa and Asia, these endeavours are sometimes not possible. This study demonstrates that third party actors support financially, and through capacity building activities, the setting up of such joint institutions. For example, in this regard Zawahri (2009) found that institutions set up with the assistance of third parties are much more effective than institutions set up by bilateral means. This is because, as outlined in this study, for cooperation to occur the transcendent problems need to be addressed. However, such endeavours are costly. Setting up joint institutions requires great resources and commitment, which low income nations may lack. Therefore, there is a need for third party assistance, which in turn facilitates riparian cooperation.

In addition, this study can potentially have implications for the general literature on mediation. It can inform the general literature on mediation so that other less intrusive types of activities or activities of different actors in dealing with conflict management may need to be incorporated and explored further. As this study shows, some lower level activities by IGOs, international development banks, and other organisations may have a large impact on peace building and conflict management. Thus, these activities by third party actors in conflict-ridden countries may need to be explored further.

Without denying that institutions are embedded in power politics and are linked to many other factors as discussed above, the findings reveal that third parties are able to foster river cooperation. Another contribution is that this study also examined the factors that explain the occurrence of third party intervention in river disputes. Such factors have not been previously discussed by researchers. The findings provide a different perspective to the occurrence of third party involvement in river disputes. Against conventional expectations, power dynamics and intensity of conflict between states do not determine if third parties become involved in river disputes. The study found that riparian states' relationship with the western powers, the number of rivers they share and previous mediation experiences are determinative if states experience third party assistance in their river disputes.

Thus, from a policy perspective, these findings imply that third parties have a positive effect on riparian cooperation, and therefore more active involvement of third parties is likely to facilitate cooperation in conflict-prone basins. Activities that promote increased communication and trust are the tools that can be employed by third parties and national governments to promote cooperation over rivers. The efforts that enhance information exchange and data collection capacities are also effective measures for building cooperative relationships between states. It is recommended that negotiations on river issues should move away from the physical distribution of water and its securitisation. Instead it should focus on the received benefits from rivers (economic and non-economic) and how these benefits can be enhanced and shared. In addition, in order to facilitate river cooperation, the normative aspects of transboundary river management should be further improved, and fair international norms based on mutual understanding should be promoted. The findings of the study also reveal that states affiliated to powerful Western states are more likely to experience third party involvement, therefore it is

suggested that the international community should tackle those river disputes where their intervention may be needed but is neglected.

Even though this research project finds that third party involvement increases the likelihood of reaching river agreements, this study does not claim that third party involvement always brings about successful outcomes. Therefore, it is also important to understand the conditions under which third party involvement is successful. It is recommended that this question needs to be further explored. This can be done by comparing case studies where third parties were present but had different outcomes, or through large-n studies. Also, more disaggregated analysis on exploring whether different types of activities have different effects on cooperation is recommended. However, this will require additional data collection on a global scale.

Another avenue for future research is to understand whether cooperation facilitated by third party assistance is more sustainable compared to river agreements reached bilaterally. In addition to collecting more data, the sustainability of river agreements should be operationalised. Sustainability can be measured as the duration of the agreement, or the presence of river institutions as a result of agreement and its capacity to alleviate and manage conflicts that arise, or the number and intensity of river disputes after agreement is reached. Understanding this puzzle is important because before advocating more third party assistance in river disputes, it is crucial to know if cooperation achieved by third party assistance is effective in the long term. Even though third parties facilitate cooperation, sometimes the question of sustainable cooperation remains, and such aspects as quality and compliance with agreements may still be of importance and need to be explored further.

In addition, the present study covers only Asia and Africa and further research on the role of third parties in other regions on a global scale is suggested. Collection of data on a global scale would allow exploring some of the questions mentioned above as well as opening up many other avenues to understand conflict management of river disputes.

Finally, by way of conclusion, the present study has made some important contributions to the field of conflict management of international river disputes. The findings of this study demonstrate that third parties have various tools at their disposal to induce cooperation and produce formal agreements which regulate the usage of river water and reduce potential future conflicts. Given the current uncertainty around security challenges resulting from climate change, and with predictions of future water wars, this research contributes to our understanding of how best to respond to current and potential conflicts around transboundary waters.

## Appendix I

### 'Tiki tour' or non-state conflicts over water resources

I included this section to explain why I have proceeded to explore inter-state disputes over transboundary rivers rather than water-related non-state conflicts. As mentioned in Chapter I, there is a gap in the literature exploring water-related non-state conflicts. Despite there being a large body of literature claiming that water scarcity would cause internal or non-state conflicts, there is no large-n study that has explored these phenomena empirically. Due to this gap in the literature, I explored the topic further to identify if there were avenues in the current databases to investigate non-state conflicts that arose directly due to water scarcity. Hence, this was what I call a "tiki-tour" of my research journey. I believe that it is worthwhile to explain why I have proceeded with exploring inter-state disputes over rivers rather than other types of water-related conflicts. Although this avenue has not been pursued further, these efforts revealed interesting observations.

It appears that there have not been enough water-related conflicts recorded in the existing databases to be able to undertake a large-n study. I explored the UCDP's non-state conflicts database to identify water-induced conflicts. Preliminary research of non-state conflicts in the UCDP's database revealed that non-state conflicts occurred only in some countries in Northern Africa, Southern Africa, Central and Southern Asia, Eastern Asia, Middle East, Southern America, and Central America. The nature of the conflicts and their intensity vary from region to region and from country to country. It appears that conflicts over water, including access to water, pasture land and cattle have mostly occurred in the North African countries as well as on the Horn of Africa. Ethiopia appears to be an interesting case where environmental scarcity has been one of the reasons for a number of non-state conflicts. Because

Ethiopia suffered from droughts, access to water and pasture land has been at the core of many non-state conflicts. It was also found that conflicts in East and Southern Africa are slightly different from conflicts in North Africa. While tribes in North African countries fight for such resources as pasture land, access to water, and cattle in order to sustain their livelihoods, conflicts in Southern Africa are between militia for political power, control over territory and access to economic gains. However, conflicts over land, pasture and cattle were also part of conflicts in the South and East African countries, particularly in Kenya.

Yet, non-state conflicts in other regions such as Central and Southern Asia, Southern America and Central America are mostly conflicts between various rebel groups or criminal groups who want to control certain territories for political reasons. No water-related non-state conflicts have been recorded in the Middle East and Oceania.

In summary, the UCDP's database of non-state conflicts shows that there are not many non-state conflicts which are related particularly to scarcity of water. Due to the low number of water-scarcity-related conflicts, I have not pursued further a large-n study on non-state-water related conflicts. In recognition of this gap, there is a very recent attempt to collect data on domestic water conflict/cooperation for 35 countries in the Mediterranean, the Middle East, and the Sahel for 1997–2009 (Bernauer et al. 2011). This research is still at an early stage and the results of the study are yet to be published.

## Appendix II

### Ethics approval

I obtained the University of Otago's Ethics Committee approval (12/097) because my research involved human participants. A copy of the University of Otago's Ethics Committee approval follows. It ensured that the research entailed no psychological harm to participants. In order to address this issue, all participants were informed about the nature and aims of the research. All participants were distributed the consent forms and Participant Information Sheets and they had the right to withdraw the information that they did not want to be included. All gathered information was coded in order to keep information confidential. At the same time, this allowed for identification of the participant should they wish to withdraw their information.

During semi-structured interviews, strict measures ensured that all information obtained during the interview remained confidential. Almost all participants insisted that their identity to be treated with the strictest confidentiality. It is also worth noting that all participants refused to be recorded during the interviews in CA, pointing out that the nature of the discussion was highly political and confidential. I took notes during the interviews. Yet, some of the interviews undertaken via Skype were recorded (which was done with their consent). I did transcriptions and translations personally which also ensured that the information was treated confidentially. I did not see any barriers in language that could have caused incorrect translations.



12/097

Academic Services  
Manager, Academic Committees, Mr Gary Witte

Assoc. Prof. I Svensson  
National Centre for Peace and Conflict Studies  
117 Albany Street

9 July 2012

Dear Assoc. Prof. Svensson,

I am again writing to you concerning your proposal entitled "The role of third parties in conflict management of riparian disputes in Africa and Asia", Ethics Committee reference number 12/097.

We can confirm we have received confirmation of approval for travel from the PVC Humanities, Brian Moloughney.

On the basis of this response, I am pleased to confirm that the proposal now has full ethical approval to proceed.

Approval is for up to three years from the date of this letter. If this project has not been completed within three years from the date of this letter, re-approval must be requested. If the nature, consent, location, procedures or personnel of your approved application change, please advise me in writing.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Gary Witte'.

Mr Gary Witte  
Manager, Academic Committees  
Tel: 479 8256  
Email: gary.witte@otago.ac.nz

c.c. Professor K Clements Director National Centre for Peace and Conflict Studies



# Appendix III

## Interview questions

*Semi-structured interview questions (for representatives from riparian states in CA)*

I am trying to get a better understanding of riparian disputes between four Central Asian states and the role of third parties in managing these disputes. I would like to remind you that if there are any questions that you do not want to answer during this meeting, you are not obligated to do so.

1. I would appreciate it if you could please tell me briefly about your background, particularly your work experience and how long have you been working at your current role?
2. How would you describe the current state of relationships of CA states over the transboundary rivers? What is the current state of the Rogun dam project in Tajikistan?
3. Are the current river agreements working? If not, what are the issues that hinder the fulfillment of agreements?
4. Did the riparian states reach the river agreements on their own? Was there any external involvement? If there was, in what way did they intervene?
5. Do you believe that third parties contributed to the emergence of river agreements? If they did, in what way did they contribute to riparian cooperation? What is the current role of third parties in managing riparian disputes?
6. Would the current state of relationship be different if it were not for the external/third party assistance?
7. Why would CA states allow external actors' involvement? Do they still need third party/IGOs assistance in management of transboundary rivers? If the external donors/IGOs leave, would CA states be capable to

cooperate further? Why do Central Asian riparian states seek third party assistance?

8. Why are the donors/third parties willing to assist and be involved in transboundary issues of Central Asia? Do they have their own agenda? Did they provide financial assistance and for what was this used?
9. What are the measures and activities that you believe help to promote transboundary cooperation? What could have been done/could be done to improve cooperation over management of transboundary rivers?
10. How useful were the WARMIS/WARMAP projects for facilitating transboundary river cooperation? How does the availability of information/ scientific data about the water availability/flow help to resolve the dispute in the CA context?
11. Are there any topics/issues that I have not asked but I need to be aware of in relation to transboundary river issues in Central Asia?
12. Do you have any recommendations in regard to people I need to talk to or documents that I need to review?

### **Questions for the third party representatives**

13. What time period have you worked in this organisation? Were you involved in the negotiation process between CA riparian states?
14. What was the context in which CA riparian states asked for assistance? Why did the World Bank/organisation agree to assist?
15. What sort of assistance did CA states ask for? Was this assistance conditional? If yes, what were the conditions?
16. Why did CA states ask for assistance? Do you believe that your respective organisation contributed to riparian cooperation among CA states? If yes, in what way? If no, why? What did not work?

17. What were the aspects that were particularly difficult to deal with when working with CA states in relation to transboundary rivers? What was the major stumbling block?
18. How did communication between the representatives of CA states go during negotiation? What role did your organisation play in facilitating communication between CA states?
19. What were the aspects of transboundary river management that your organisation wanted to assist/fund in CA? What was considered the most important measure that needed to be undertaken in order to manage the river dispute?
20. What role do you think your organisation/third parties played in reaching river agreement in CA? Was it possible at that time that CA could reach river agreements if it were not for your organisation/third party assistance?

## Appendix IV

### Results for the Heckman Probit Selection Model

<b>Variable</b>	
<b>Outcome: River agreements</b>	
Water availability	.322444 (.3287967)
Upstream/downstream relationship	-.5115149 (1.119034)
Number of rivers	-.1165435 (.2422039)
Level of economic development	-.0000449 (.0003283)
Power imbalance	.2793238** (.1310757)
Third party involvement	.6536702* (.3500841)
Constant	-3.764302*** (.8202975)
<b>Selection: Conflict dyad</b>	
Water availability	-.3884236*** (.125531)
Upstream/downstream relationship	1.113471** (.5396584)
Number of rivers	.2560836*** (.0870824 )
Level of economic development	.0002797 (.0002566)
Power imbalance	-.1981005* (.1090162)
Boundary length	.0001269 (.0002522)
Constant	1.647227 (1.129976)
Rho (S.E)	-.3689998 (1.50462)
Wald chi2(6)	47.32
N	2966

Cell entries report coefficients, standard errors (in parentheses), and P-value (or significance levels) \*\*\*p<.01; \*\*p<.05, \*p<0.1.

p= -0.35 with a 95% confidence interval [-0.99,0.98]. The likelihood-ratio test has a p-value of 0.80. Thus the estimated correlation between the errors is not significantly different from zero, and the hypothesis that the two parts are

independent is accepted<sup>48</sup>. This means that the Cox regression model can be used instead.

## **Diagnostics for the Heckman Probit Selection Model**

I have undertaken some diagnostics tests to test the validity of the key tobit assumptions of normality and homoscedasticity. Using generalised residuals for censored regression, I have used the conditional moment tests for testing homoscedasticity and normality discussed by Cameron and Trivedi (Cameron and Trivedi 2009, p.535). Two separate tests have been undertaken where the selection stage and the outcome stage were tested separately. For each stage a tobit model was used. For comparison, two other separate tests were run for each dependent variable where a heckprob model was used.

### **Normality test after heckprob**

*First stage (conflict dyad)*

N R<sup>2</sup> = 545.8139 with p-value = 3.01e-119

### **Test of homoscedasticity**

N R<sup>2</sup> = 545.86643 with p-value = 2.93e-119

*Second stage (river agreements)*

### **Normality**

N R<sup>2</sup> = 542.77019 with p-value = 1.38e-118

### **Test of homoscedasticity**

N R<sup>2</sup> = 542.8778 with p-value = 1.30e-118

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<sup>48</sup> There was an additional test which included "duration of conflict" in the model. The results hold and duration of conflict was found to be insignificant.

All results show that homoscedasticity and normality assumptions are met, which means that the data are normal. The p-value of the test is not significant, therefore we cannot reject the normality or homoskedasticity hypothesis.

## Results for Seemingly Unrelated Recursive Bivariate Probit Analysis

Variable	
<b>Outcome: Conflict dyad</b>	
Boundary length	.0001174 (.0002532)
Upstream/downstream relationship	1.163573** (.5368446)
Water availability	-.4063989*** (.1267193)
Number of rivers	.2685958*** (.0877655)
Power imbalance	-.2106124* (.109182)
Level of economic development	.0002573 (.0002479)
River agreements	1.226069** (.4915749)
Constant	1.75399 (1.143513)
<b>Selection: River agreements</b>	
Upstream/downstream relationship	-.0423757(.2769552)
Water availability	-.4063989 (.1267193)
Number of rivers	-.0259033 (.0572013)
Power imbalance	.0646866 (.0491003)
Level of economic development	.0002204* (.0001225)
Constant	-1.931683*** (.5292425)
Rho (S.E)	.1290768 (.1660458)
Wald chi2(12)	63.70
N	2966

Cell entries report coefficients, standard errors (in parentheses), and P-value (or significance levels) \*\*\*p<.01; \*\*p<.05,

\*p<.1.

The  $p = 0.12$  with the 95% confidence interval  $[-0.19, 0.42]$ . The likelihood-ratio test has a  $p$ -value of 0.43. Thus the estimated correlation between the errors is not significantly different from zero, and the null hypothesis that the two parts are independent is accepted. This means that we can use the Cox regression model instead.

## **Diagnostics for Seemingly Unrelated Recursive Bivariate Probit Analysis**

Generalised residuals for censored regression provide the key component for generating test statistics for testing for homoscedasticity and normality (Cameron and Trivedi 2009). Conditional moment tests were performed to test for homoscedasticity and normality (see Cameron and Trivedi 2009).

### **Normality test result for selection stage**

$N R^2 = 73.533907$  with  $p$ -value =  $1.077e-16$

### **Test of homoscedasticity**

$N R^2 = 1049.0489$  with  $p$ -value =  $1.59e-228$

### **Test of normality test for the outcome part (outcome stage)**

$N R^2 = 80.659425$  with  $p$ -value =  $3.055e-18$

### **Test of homoscedasticity**

$N R^2 = 389.11966$  with  $p$ -value =  $3.190e-85$

All results show that homoscedasticity and normality assumptions are met, which means that the data are normally distributed. The  $p$ -value of the test is not significant, therefore we cannot reject the normality or homoscedasticity hypothesis.

## Appendix V

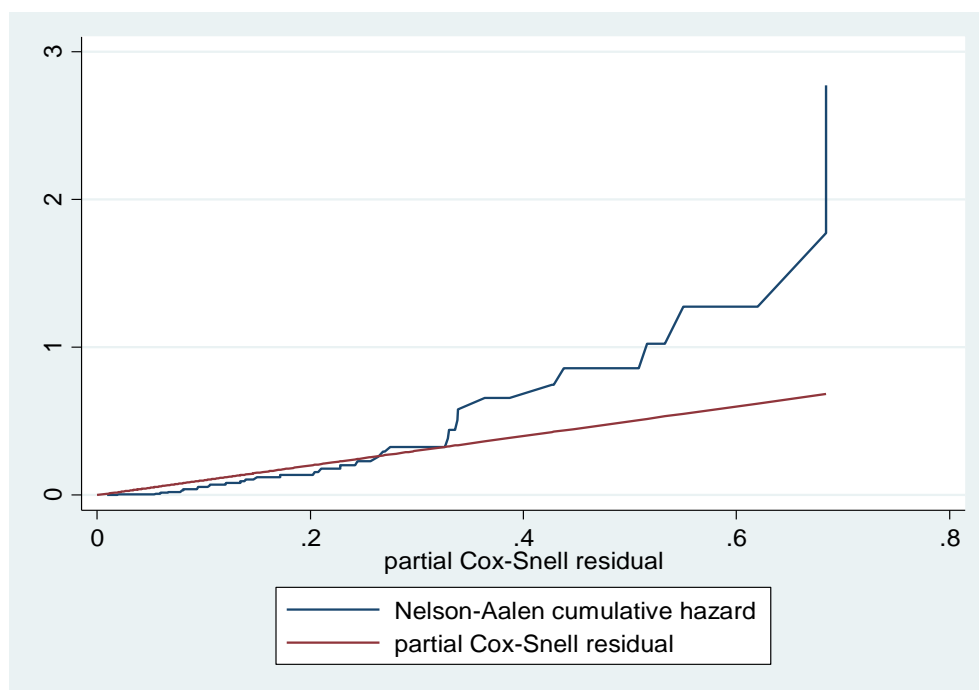
### Diagnostics for the Cox model

#### *The test based on the Cox-Snell residuals*

Before accepting the results, it is advised to assess the adequacy of the Cox model. The first diagnostic step to establish this is through the use of the Cox-Snell residuals. Clevez et al. (2008, p.214 ) suggests that the Cox regression model fits the data if the true cumulative function conditional on the covariate factor has an exponential distribution with a hazard rate of 1. The basic logic of this test is that the Cox-Snell residuals are estimated and treated as the time data. Then the Nelson-Aalen cumulative hazard estimate is computed and this estimate is estimated with Cox-Snell residuals as the time variable along with the data's original censoring variable. As shown in Graph 1 below, the line at the upper end of the cumulative hazard rate lies above 45%, however it is in the tail where variability is the largest due to estimation uncertainty. These deviations are not of major concern. Some variability at about the 45% line is expected, especially in the right hand tail. This is because of the reduced effective sample caused by prior failures and censoring. The reference line is not strictly at 45% degrees. This deviation could also be due to the functional form of some covariates that may be incorrect or that some important covariates are omitted. This has been checked using martingale residuals (this needs to be done separately, although I already did this using MFP (multivariable fractional polynomials) to determine the functional form of the covariates in the model). It showed no necessity to transform any covariate. I also centred continuous variables such as water availability, GDP level, power imbalance at their mean so that the baseline hazard corresponded with other



covariates (Cleves et al. 2008). Nevertheless, this slight deviation from the assumption that the residuals are distributed as exponential units could be a function of the uncertainty in the data. This is especially a problem for small samples. In addition, the Cox-Snell residual may fit the data well even though other serious problems may exist in the data. Therefore, this is rather a first step to test the data further. For example, Allison (1984) states that in testing the Cox model, the Cox-Snell residuals estimated by partial likelihood are not very informative, and therefore deviance residuals are suggested to better suit Cox models.

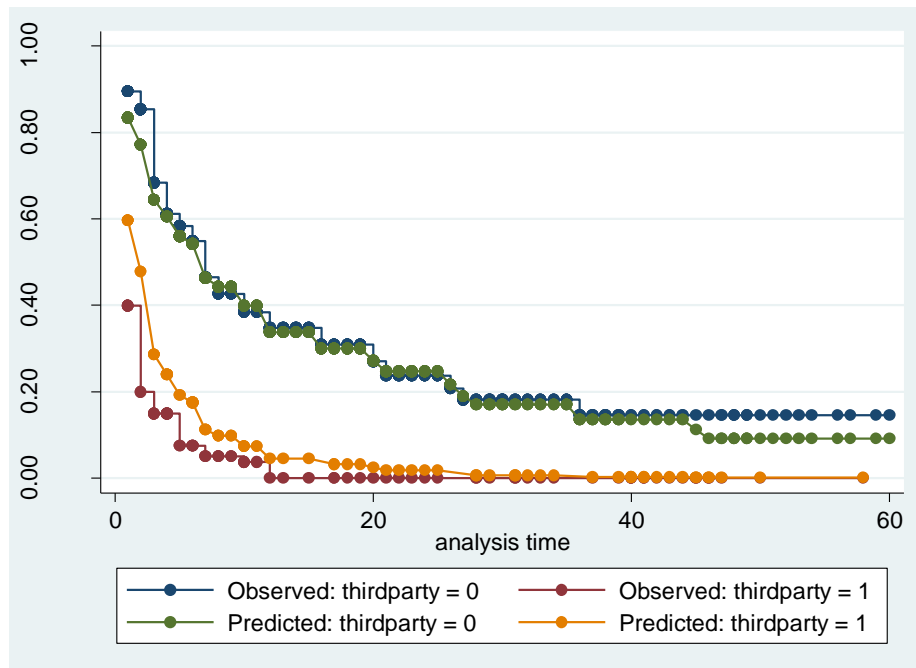


Graph I. The test based on the Cox-Snell residuals

*The test based on Schoenfeld residuals*

Another way to graphically test the proportional hazards model is to compare the estimated Kaplan-Meier curves with estimates from a Cox model, which imposes the model assumption of proportional hazards. The lines as indicated

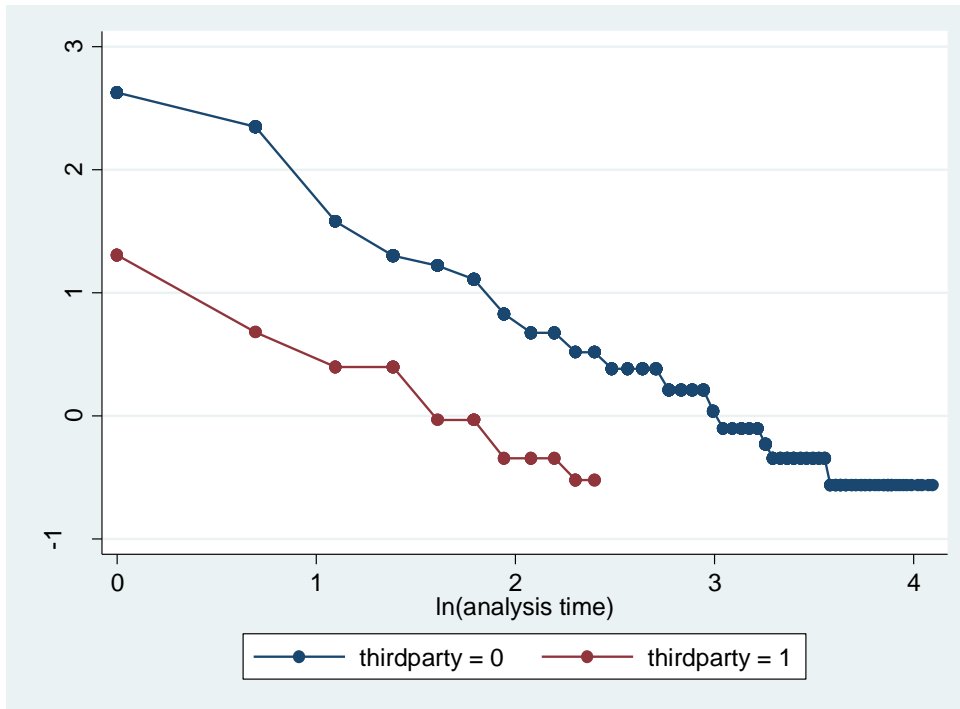
in the Graph II roughly fall on the line, which provides evidence in favour of the proportional hazard assumptions for the effect of third party involvement (Cleves et al. 2008).



Graph II. Comparison of Kaplan-Meier and Cox survivor functions.

*Test of the proportional-hazards assumption for third parties, controlling for all other variables*

The curves as shown in the Graph III are roughly parallel providing evidence in favour of the proportional hazard assumptions for the effect of third party involvement.



Graph III. Test of the proportional-hazards assumption for third party, controlling for all other variables.

## Appendix VI

### Summary statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Water availability	546	8.00	.82	6.618	10.870
Upstream/downstream	546	.170	.376	0	1
Number of rivers	546	3.62	2.73	1	14
GDP	546	411.11	518.91	36	5626
Power imbalance	546	1.57	.92	.05	4.24
Third party	546	.16	.36	0	1

### Tabulation for third party involvement

Third party	Freq	Percent	Cum
0	455	83.70	83.70
1	91	16.30	100.00
Total	546	100.00	

## Tabulation for third party involvement and river agreements

Third party	River agreements		Total
	0	1	
0	433	22	455
1	75	16	91
Total	508	38	546

### Summary statistics for interval variables (conflict dyads only)

One thing to note is that in Stata, value of kurtosis for a normal distribution is 3. Unlike other statistical programs (SPSS, SAS) which subtract 3 from the kurtosis to centre it to zero, Stata uses the correct formula. So the value of kurtosis should be 3 for normal distribution and kurtosis with an absolute value greater than 10 is problematic.

Water availability			
Percentiles		Smallest	
1%	6.704414	6.618858	
5%	7.087785	6.659969	
10%	7.244167	6.671081	
25%	7.440665	6.682192	
50%	7.743704	Mean	8.000
		Largest Std. Dev.	.824
75%	8.360019	10.78757	

90%	9.248457	10.81519	Variance	.6795
95%	9.430233	10.84274	Skewness	1.335
99%	10.72072	10.87041	Kurtosis	4.692

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Obs 546

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**Power**

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Percentiles		Smallest		
1%	.1734838	.0560255		
5%	.3381648	.0690324		
10%	.4236116	.0719266		
25%	.6976635	.0861763		
50%	1.538727		Mean	1.577
			Largest Std. Dev.	.929
75%	2.182183	4.213926		
90%	2.67538	4.21877	Variance	.8648032
95%	2.87364	4.222066	Skewness	.6262746
99%	4.208666	4.245099	Kurtosis	3.334478

---

Obs 546

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**Log of GDP**

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Percentiles		Smallest
1%	3.73767	3.583519
5%	4.094345	3.663562
10%	4.430817	3.663562

25%	5.010635	3.688879		
50%	5.669875		Mean	5.622
			Largest Std. Dev	.866
75%	6.161207	8.14584		
90%	6.593045	8.324579	Variance	.751
95%	6.889591	8.509564	Skewness	.0940
99%	7.8842	8.635154	Kurtosis	3.266
Obs	546			

---

**Number of rivers**

---

Percentiles		Smallest		
1%	1	1		
5%	1	1		
10%	1	1		
25%	2	1		
50%	3		Mean	3.628
			Largest Std. Dev	2.735
75%	4	14		
90%	7	14	Variance	7.481
95%	11	14	Skewness	1.780
99%	14	14	Kurtosis	6.497
Obs	546			

**Tabulation of nominal variables (conflict dyads only)**

<b>River agreements</b>	Freq	Percent	Cum
No agreement is present	508	93.04	93.04
Agreement is present	38	6.96	100.00
Total	546	100.00	

<b>Upstream/downstream</b>	Freq	Percent	Cum
0	453	82.97	82.97
1	93	17.03	100.00
Total	546	100.00	

<b>Number of rivers</b>	Freq	Percent	Cum
1	135	24.73	24.73
2	37	6.78	31.50
3	153	28.02	59.52
4	135	24.73	84.25
7	32	5.86	90.11
8	26	4.76	94.87
11	17	3.11	97.99
14	11	2.01	100.00
Total	546	100.00	

<b>Third party</b>	Freq	Percent	Cum
No third party present	455	83.33	83.33



Third party is present	91	16.67	100.00
Total	546	100.00	

<b>Intensity of conflict</b>	Freq	Percent	Cum
0. Peace year	124	22.71	22.71
1. Mild verbal expressions	124	22.71	45.42
2. Strong verbal expressions displaying	228	41.76	87.18
3. Diplomatic-economic hostile actions	64	11.72	98.90
4. Political-military hostile actions	1	0.18	99.08
6. Extensive War Acts causing deaths	5	0.92	100.00
Total	546	100.00	

**Cross tabulation of variables of third party involvement and river agreements**

<b>River agreements</b>			
<b>Third party</b>	No agreement	Agreement	Total
No third party present	433	22	455
	95.16	4.84	100
Third party is present	75	16	91
	82.42	17.58	100
Total	508	38	546
	93.04	6.96	100

## Appendix VII

### Third party typology in the ICOW database

Before collecting my own data on third party involvement, I explored the ICOW database on river claims. Table I shows the type of third party actors involved in settling river disputes in the Middle East, Western Hemisphere and Europe. It appears that regional IGOs in the same region as the claimant are the actors most involved. This is followed by COW major powers in other regions. This is followed by minor powers, at least one of which is located in the same region. It is worthwhile to note that there are no NGOs, international development banks and no minor powers in other regions involved in settling river disputes.

**Table I. Type of third party actors involved in settling river disputes in the Middle East, Western Hemisphere and Europe.**

Type of third party actor	Number of settlement attempts	
Claim participant citizens, or private citizen not acting on behalf of any state government	6	
Minor power(s) only, at least one of which located in the same region as the claim	13	
Minor power(s) in other regions only	0	
COW Major power(s) only, at least one of which is located in the same region as the claim	3	
COW Major powers in other region only	17	
Regional IGO (intergovernmental org) in the same region as the claim	19	
Regional NGO in the same region as the claim	0	
Regional IGO in other region	0	
Regional NGO in other region	0	
Global IGO (including the ICJ and similar organisations)	7	
Global NGO (including the Vatican)	0	
Individual (not officially representing any government or organisation)	0	

Minor powers, at least one of which is from the same region as the claim and Major powers, at least one of which is from the same region as claim	2	
Minor powers, at least one of which is from the same region as the claim; and Major powers from other regions only	0	
Minor powers from other regions but not from the same region as the claim; and Major powers, at least one of which is from the same region as the claim	0	
Minor powers form other regions but not from the same region as the claim; and Major powers from other regions only	0	

Source: (Hensel 2005)

## **Type of peaceful settlement attempts**

Table II and Chart I show the type of settlement attempts. An attempt is made to settle the majority of disputes via bilateral negotiations. Amongst third party settlement attempts, mediation, use of good offices, inquiry or conciliation and multilateral negotiation are the most attempted types of settlements. The most attempted third party settlement is mediation followed by use of good offices. However, the use of good offices results in a larger number of agreements in absolute number as well as proportionately to the number of attempts.

**Table II. Type of peaceful settlement attempts**

Type of peaceful settlement attempt	Total Number of attempts	Emergence of agreements (substantive agreements covering part or all parts of claims)	Emergence of functional and procedural agreements
Bilateral negotiations	124	38	30
Good offices	16	8	1
Inquiry or conciliation	10	3	3
Mediation	20	7	2
Arbitration	1	1	0
Adjudication	6	2	0
Other third party	1	0	0

settlement			
Multilateral negotiation	10	1	1
Peace conference	2	0	1

## Appendix VIII

### Robustness of the findings

Even though the possibility of selection effect has been addressed via the Heckman selection model, there may also be another potential selection effect. This may occur when the factors that influence an occurrence of third party intervention may also impact the emergence of agreements. In order to test for the robustness of the findings, I have incorporated additional variables that were included in the analysis of the occurrence of third party intervention<sup>49</sup> but not in the analysis of explaining the emergence of river agreements. Therefore, such variables as upstream hegemon, former colony, previous mediation, being hostile to major Western powers, and the intensity of conflict were included along with all other variables in the Model III in Table 1 (see below). The variable “intensity of conflict” was lagged one year in this model because once the dyads reach agreement, it was coded 0 indicating peace years until another conflict occurs. This creates perfect correlation with agreements, therefore, the intensity of conflict was lagged. As the Model III shows, third party involvement is still a significant factor along with power imbalance, previous mediation, being hostile to major Western powers and upstream/downstream relationships.

As mentioned in the methodology chapter, some variables such as interdependency, alliances, and recent militarised conflict have been excluded from the main analysis due to data limitations. Yet in order to check for the robustness of the findings, an additional analysis including the above mentioned variables were undertaken. Hostility to major western powers was not included in the Model IV because only one agreement was concluded

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<sup>49</sup> I also controlled for previous disputes in the model, which identifies the occurrence of third party involvement. Previous dispute is not significant factor.

between the dyads which were hostile to major western powers. This made the model unidentifiable. Due to data limitations, the analysis captures only the observations until 2000. After including all control variables in the model, third party involvement still has a significant effect on emergence of river agreements along with such variables as water availability, power imbalance, intensity of conflict, alliance membership, and interdependence.

**Table 1 Cox regression estimates of the effects of third party involvement and other variables on emergence of river agreements**

River Agreements			
Variable	Model III	Variable	Model IV
Third party involvement	1.100*** (.417) [2.87]	Third party involvement	1.272**(.469) [3.57]
Water availability	.309 (.215) [1.33]	Water availability	1.49 (.417)*** [4.44]
Upstream/downstream relationship	-.585* (.332) [.54]	Upstream/downstream relationship	-1.023(.674)[.35]
Number of rivers	-.091 (.082) [.90]	Number of rivers	-.023 (.065) [.97]
Level of economic development	5.27e-06 (.000281) [1.00]	Level of economic development	.0003879 (.000256) [.99]
Power distribution	.357* (.206) [1.44]	Power distribution	.732 (.367)** [2.07]
Upstream hegemon	-.312 (.344) [.72]	Upstream hegemon	-.229 (.365) [1.25]
Former colony	-.421 (.357) [.62]	Former colony	-.732 (.495) [.48]
Previous mediation	1.419*** (.554) [4.21]	Previous mediation	.881(.564) [2.41]
Hostility to major western powers	-.991** (.423) [.35]	Intensity of conflict	.532 (.134)*** [1.70]
Intensity of conflict	.122 (.206) [1.14]	Alliance	2.013 (.732)*** [7.49]
		Previous militarised conflict	-.029 (.302) [2.41]
		Interdependency	435.21 (100.41)*** [1.0e+189]

Number of observations 517

Number of observations 303

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Main entries are coefficients, robust standard errors are in parentheses, hazard ratios in square brackets, and p-value

\*\*\*p<.01; \*\*p<.05, \*p<.1, one-tailed test, number of observation is 517 for Model III and 303 for Model IV. Unit of analysis is dyad-year.

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