

# Introduction

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The purpose of this document is to review the literature on water disputes and related water treaties to gain an understanding of why previous and current disputes over water have occurred and to seek out lessons to be learned in preventing similar future disputes. This work focuses on transboundary freshwaters. We use the term “transboundary” to refer to water that crosses between, or is shared by, nations, sub-national political units, economic sectors, or interests. For water that crosses between nations we refer to more specifically as “international waters.” In addition, the sections on environmental resources represent lateral learning, an attempt to understand the similarities among conflicts over all natural resources. In future work, we will apply these lessons to several specific water disputes.

This document is divided into chapters on Theory and on Practice. Chapter 2 (Organizational theory) examines the theoretical literature that shapes how transboundary freshwaters (TFWs) are managed through institutions and law. The section dealing with negotiation theory broadly examines the diagnosis of conflict, the prognosis or resolution, and presents some analysis on individual and comparative case studies. Chapter 3 (Economic theory) details the literature related to using techniques of optimization and game theoretic models in the allocation and use of TFWs. Chapter 4 (Water disputes) explores the general background of water disputes and then follows with an in-depth comparative analysis. This analysis examines various issues of specific conflicts that are indi-

vidually detailed in Chapter 7 (Case studies). Also included is a discussion of the history of treaties related to international waters. This portion provides a detailed summary of a treaties database. Chapter 5 (Environmental disputes) offers a general overview of a relatively new concept in environment literature, environmental security. In addition, there is a section on resources other than water, where issues of sources and types of conflicts related to natural resources such as oil, fishing, and air are examined. Some conclusions are gathered in Part 4. The Appendixes (Part 5) provide supplemental materials to the literature review. Chapter 7 is a detailed examination of 14 specific water disputes. Chapter 8 is a hardcopy preview of a systematic computer compilation of international water treaties and currently includes 140 treaties. Chapter 9 is an annotated bibliography of some materials found in our reference list, and Chapter 10 is a reference list of over 1,100 citations of related literature.

This document does not include the numerous works offering technical solutions. While engineering, hydrologic, or organizational aspects are extremely important, it seems that the problems of freshwater dispute resolution are superseded by constraints related to negotiating process by the sovereign stakeholder. Hence the focus of this work is more on political and social aspects, and the skills for dispute resolution. As Delli Priscoli (1989) explains, engineers and scientists need to expand beyond analytic solutions to water resources by adding techniques taken from the social sciences that are designed to facilitate reaching agreement. This is our focus, because hydropolitics are considered the main obstacle, and in general, as Biswas (1993) indicates, the management of international water resources was not given adequate attention in the last three decades.

The production of this document was conducted under the auspices of the Transboundary Fresh Water Disputes Project (TFWDP), a comprehensive and interdisciplinary analysis of international surface water conflicts. The TFWDP was an effort to create a qualitative and quantitative analysis of the situation at hand and to develop procedural and strategic templates for early intervention so as to help contain and manage conflicts. This survey of literature on water dispute resolution and related water treaties was funded in part by the World Bank Research Committee under the grant preparation fund with a majority of the research conducted during 1996.