

TRANSBOUNDARY WATER INTERACTION: THE ROLE OF WEAKER  
RIPARIAN STATES

by

Farishta Sakhi  
A Dissertation  
Submitted to the  
Graduate Faculty  
of  
George Mason University  
in Partial Fulfillment of  
The Requirements for the Degree  
of  
Doctor of Philosophy  
Conflict Analysis and Resolution

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Spring Semester 2023  
George Mason University  
Fairfax, VA

Transboundary Water Interaction: The Role of Weaker Riparian States

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By

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Spring Semester 2023  
George Mason University  
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## **DEDICATION**

I dedicate this work to my father Ghulam Sakhi, my mother Zarghuna Khairi, and my husband Ramin Nouroozi for their unwavering support.

## **ACKNOWLEDGEMENTS**

I want to thank my advisor, Dr. Sara Cobb, Ph.D. Drucie French Cumbie Professor of Conflict Resolution for her guidance and support throughout this process. I also want to thank the members of my committee for their invaluable input and infinite patience: Dr. Christina Leb, Senior Counsel, The World Bank Group and Dr. Terrance Lyons, Professor of Conflict Resolution, Carter School for Conflict Analysis and Resolution. Finally, my work would not have been possible without generous grants from the Feminist Majority Foundation, International Peace Scholarship Fund, P.E.O. and Carter School Summer Fellowship Program.

## TABLE OF CONTENTS

List of Tables .....	x
List of Figures .....	xi
Abstract .....	xii
Chapter one: Research Methodolog:.....	1
1.1 Introduction .....	1
1.2 Contribution to Research and Potential Findings.....	6
1.3 Research Methodology.....	7
1.4 Conceptual Framework .....	8
1.4.1 Regional Water Conflict and Cooperation Nexus .....	8
1.4.2 Power Asymmetry Shaping Water Interactions .....	11
1.5 Different Forms of Power Shaping Water Interaction .....	13
1.6 Framework for hydro-hegemony (FHH).....	24
1.7 Research Question.....	28
1.8 Transboundary Water Cases.....	28
1.9 Afghanistan and regional riparian states .....	31
1.10 Research Method and Design.....	37
1.10.1 Comparative Case Study.....	37
1.10.2 Data Collection .....	40
1.10.2 Reflective Journals: .....	42
1.10.3 Thematic Analysis .....	44
1.11 Data Analysis Process .....	45
1.12 Reliability and Validity .....	47
1.13 Potential challenges .....	48
1.14 Ethical Considerations.....	49
1.14.1 Researcher's Positionality .....	50
1.15 Conclusion.....	51
Chapter TWO: Part I: Afghanistan and Iran's Transboundary Water Relations .....	52
2.1 Introduction: .....	52
2.2 The Afghanistan context and road for development: .....	53
2.3 Iran-Afghanistan Water Relations:.....	62

2.3.1.c. Helmand Water Treaty.....	81
2.4. Environmental Degradation .....	84
2.4.1 The Impact in Afghanistan .....	84
2.4.2 The Impact in Iran .....	85
2.4.3 Challenges of Managing Wetlands.....	92
2.4.4 : Iran Reckless water policies .....	93
2.5 Harrirud-Bala Murghab River.....	94
2.5.1 Salma Dam .....	97
2.5.1 Kamal Khan.....	100
2.6 Lack of Cooperation Between Afghanistan and Iran .....	103
2.6.1 Asymmetrical Power Relations .....	106
2.6.2 Lack of Leadership and Professionalism.....	115
2.6.3 Technical capacity .....	115
2.6.4 Unilateral Resource Capture strategy.....	116
2.6.5 Enforced notion of Water Trade.....	117
2.6.6. Blame game, destructive internal policies.....	120
2.7 Bilateral Relationship of Iran and Afghanistan and its impact of Water .....	123
2.7.1 Chahbahar, a trade corridor .....	125
2.7.2 Taliban and Iranian Relations.....	126
2.8 Strategies to reduce asymmetrical power relations:.....	127
2.8.1 Open Communication.....	127
2.8.2 De-politicization and de-securitization of Water Issues.....	129
2.8.3 Incentivizing Joint Data-Gathering and Knowledge Generation .....	129
2.8.4 Regional Cooperative Mechanisms to mitigate power asymmetry.....	130
2.8.5 Inclusion of Civil Society and Community Groups .....	130
2.9 Conclusion: An Integrated Water Management Approach .....	134
Part II: .....	136
2.10 Afghanistan and Pakistan Transboundary Water Relations:.....	136
2.10.1 Introduction .....	136
2.10.2 Water Conflict and Cooperation History:.....	139
2.10.3 Various phases of Water conflict between the two riparian states: .....	142
2.10.3 b Conflict over the Dasu Dam:.....	147

2.10.4 c Dams on Kabul River in Afghanistan side .....	150
2.10.4 Kunar River: A Cooperative Project that Never Materialized .....	151
2.10.5 Power Asymmetry Shaping Bilateral Water relations .....	156
2.10.7 Factors affecting cooperation. ....	163
2.10.7 a Geo-politics.....	163
2.10.7. b Lack of Shared Knowledge Impedes Cooperation .....	168
2.10.7.c Lack of Readiness for Negotiation .....	169
2.10.7. d Corruption and Lack of Water Governance .....	170
2.10.7. e Terrorism and Instability .....	171
2.10.8 Mitigating Power Asymmetry:.....	172
2.10.8 a Depoliticization of Water Issues.....	174
2.10.8.b Explore avenues for collaboration:.....	176
2.10.8.c Afghanistan should push Pakistan to Focus on shared initiatives: .....	177
2.10.8. d Increasing cooperation on Trade and Business .....	178
Conclusion:.....	184
2.11. Part III: The Amu Darya River Basin: .....	187
2.11.1 Introduction: .....	187
2.11.2 Main tributes to the Amu Darya .....	188
2.11.3 Conflict and Cooperation Events: .....	197
2.11.4 Afghanistan needs as a later developer.....	207
2.11.5.a Riparian states of Amu Darya.....	209
2.11.5 Asymmetric water relations: .....	211
2.11.5. a Limited Regional cooperation and organizations:.....	217
Conclusion: Ways to bolster cooperation.....	221
Chapter Three: Nepal and India Asymmetrical Water Relations .....	224
3.1 Introduction .....	224
3.1.1 The Ganges River .....	226
3.1.2 The Mahakali Treaty .....	232
3.2 Factors causing lack of cooperation:.....	240
3.2.1 Lack of Mutual Goals over the Water basin.....	241
3.2.2 Scarcity and pan nationalization of Water Policies .....	243
3.2.3. Politicization of water interactions .....	244

3.2.4 Lack of attention to Environmental Issues .....	247
3.2.5 Lack of Trust .....	249
3.2.6 Power Asymmetry .....	250
3.2.7 Nepal <i>Negative leadership/domination Strategy</i> , .....	256
3.3. Strategies to mitigate power asymmetry: .....	257
3.3.1 De-politicization and De-securitization of TBW diplomacy:.....	261
3.3.2 Bolstering Track II Diplomacy .....	262
3.3.3 Harmonizing National Politics .....	263
3.3.4 Changing the rhetoric to cooperation vs statement: .....	264
Conclusion:.....	264
Chapter Four: Uzbekistan and Tajikistan water relations: Rogun Hydropower Dam ....	267
4.1 Introduction: .....	267
4.2 Rogun Hydropower Plant Background: .....	269
4.2.1 Conflict and Cooperation events: .....	272
4.2.2 Environmental concerns: .....	275
4.3 Parties Water Interaction: Power Asymmetry.....	276
4.4 Potential next steps:.....	285
Chapter five: Findings and Conclusion.....	288
5.1 Introduction: .....	288
5.2 Power asymmetry leads to negative hydro hegemony. ....	288
5.2.1 Different forms of asymmetrical power in the studied cases: .....	293
5.2.2 Lack of appetite for Negotiations while power asymmetry: .....	298
5.3 Countering Power Asymmetrical Relations:.....	301
5.3.1 Power to Influence:.....	302
5.3.2 Power to Challenge the stronger riparian: .....	320
5.4 Lessons for Afghanistan to mitigate power asymmetry:.....	334
5.4.1 Political stability and presence in the international forum: .....	337
5.4.2 Promoting regional connectivity: .....	340
5.4.3 Diversification of trade and dependence on Pakistan.....	341
5.4.4.learning from other later developer weaker riparian states: .....	341
5.4.5 Building negotiation skills:.....	344
5.4.6 Building efficient diplomacy and bureaucracy:.....	347

5.4.7 Aligning with weaker riparian parties in the regional context: .....	349
Strengths and limitations of the study: .....	350
Reference: .....	351

## LIST OF TABLES

Table	Page
Table 1: list of reservoirs in Afghanistan.....	60
Table 2: Chronology of Afghanistan-Transboundary water interaction on Helmand .....	80
Table 3: the average annual flow and withdrawals of water from the Amu Darya .....	194

## LIST OF FIGURES

Figure	Page
Figure 1: Hydro hegemony framework.....	27
Figure 2: Map of Ganges river.....	31
Figure 3: Map of Afghanistan and Riparian states .....	37
Figure 4: Map of Hindukush-Himalayan region.....	64
Figure 5: Map of Afghanistan Riversheds .....	69
Figure 6: Map of Helmand River Afghanistan .....	78
Figure 7: Photos of Hamoun Lake .....	90
Figure 8: Photos of Hamoun lakes in Iran .....	92
Figure 9: Photos of Salma Dam .....	102
Figure 10: Map of Chahbahar Port .....	126
Figure 11: Map of Kunar River between Afghanistan and Pakistan: .....	140
Figure 12: Map of water reservoirs on Kabul River basin.....	149
Figure 13: Photo of Kunar .....	153
Figure 14: Map of Durand line.....	158
Figure 15: Map of Amu Darya and its tributaries: derived from.....	188
Figure 16: Picture of Dosti Dam, Iran -Turkmenistan Friendship Dam .....	217
Figure 17: Map of Ganges River .....	227
Figure 18: Map of Mahakali.....	232
Figure 19: Map of Mahakali .....	237
Figure 20: Map of Kalapani.....	239
Figure 21: Photo of Ganges River Basin .....	249
Figure 22: Map of Amu Darya River Basin .....	269
Figure 23: Map of Rogun Dam .....	271

## **ABSTRACT**

### **TRANSBOUNDARY WATER INTERACTION: THE ROLE OF WEAKER RIPARIAN STATES**

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George Mason University, 2023

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Transboundary regional water conflict is complex in nature. As a multidimensional and multilayered problem, it involves multiple stakeholders with diverse sets of values and interests. Power asymmetry is the reason for the inequitable water distribution among riparian states. Asymmetric power is very evident in the outcomes of transboundary water dynamics and the adaptation process for transboundary water governance. Most of the scholarships on transboundary regional water interaction highlight the role of power in shaping interaction between stronger and weaker riparian states in a manner that safeguards the rights of stronger riparian states. Various kinds of structures and relations guide the water discourse through nation-states and institutions and in the context of asymmetric power relations, these structures are sometimes hegemonic entailing high-power asymmetries, making the cooperation processes extremely complex, time-consuming, and inequitable. This situation further consolidates the role of hydro hegemon to exploit the weaker riparian state in most of the regional water conflict resolution settings. Thus,

resulting in long-term regional conflicts, poor water management, degradation of environmental resources, and possibility of water wars as many scholars would predict. However, I argue that hydro hegemony is multilayered, and it is not only the riparian states with more power that can influence the course of interaction but also the weaker riparian states can influence and challenge the status quo by using right strategies to safeguard their water rights. In this research, firstly I will explore the kinds of power involved in shaping the riparian relations and I envisage that weaker riparian adopts strategies and tools that ensure their leverage and will impact the outcomes of conflict resolution in their favor. Furthermore, I argue that weaker riparian utilizes tools that ensure their rights in both the negotiation phase, formulation of water negotiations and implementation mechanisms. I will investigate qualitatively cases of regional water conflict resolution among the riparian states with power asymmetry and the tools and practices adopted by weaker riparian states at different level of conflict resolution in which the weaker riparian has adopted tools, practices, and strategies to safeguard their water rights and not lose in the face of hydro hegemony. I will also explore the role of power in shaping water interaction when weaker riparian states lack major support for their water development project and how this interdependency affects the riparian states relations. I will conduct interviews to understand how the role of actors in each case aided in laying out the playing ground for equitable water interaction. For this study power asymmetry will be analyzed quality in cases of Afghanistan and its riparian, India and Nepal and Tajikistan and Uzbekistan relations over the Raghu Dam The study will unveil some of the strategies adopted by the weaker riparian states to influence or challenge power asymmetry and safeguard its water rights. This

dissertation reflects the status of information related to Transboundary Water Affairs in Afghanistan until the year, 2021.

## **CHAPTER ONE: RESEARCH METHODOLOG:**

### **1.1 INTRODUCTION**

The literature reviewed on regional water interaction reflects the importance of regional cooperation on TBW (Transboundary Waters) for overall economic growth and environmental sustainability. As fresh water sources are critical for food security, energy security, and healthy ecosystems, the quality of cooperation among various regional stakeholders is key in harnessing the potential of river basins for the development of the entire regions. However, the path to river basin development has not been so smooth, history is replete with the incidents of states fighting with each other over natural resources, including river basins and energy reserves (Hensel and Brochmann, 2007). Water war proponents argue that water scarcity and poor management of Transboundary rivers will be the source of regional wars in the next century. As discussed in the discussion of water geo-politics, water can be a very determining instrument in conflict escalation. Peter (Gleik, 1993) gives the example of countries where water is the cause of military expansion, such as in case of Nile river basin, the conflicts among northeastern African countries and the potential conflicts in central and south Asia around water issues. He defines water scarcity, unfair divisions of water, shared boundary waters and cross border flow constitute four major causes. According to (Lomborg, 2008) the militaries of riparian in conflict would soon be designing strategic interventions to prevent and wage wars to protect their water resources. Especially, regional conflicts are more prevalent in underdeveloped regions which lack capacity to tap their natural resources for the wellbeing of their population (Homer, 2006).

However, scarcity alone is not the only cause of water conflict, location and construction of dams, poor management plans, lack of cooperative agreements and unilateral control of water resources can further trigger the security threats (Klare, 2002 & Gleik, 1933). States tend to revert to zero-sum games as a new form of hydro-politics resulting in politicization and securitization of water discourse (Zinzani and Menga, 2017). Building on non-competitive similarities as in case of Nile water benefit-sharing regime which helped countries gain confidence and work on the issue independently. In case Nile waters negotiations were moved from the competition mode to the win-win mode by highlighting the areas of interdependence in other sectors (Ashcraft, 2017, p. 63). In addition, Hardin's *common resource dilemmas* provide a lens through which water is defined as a common resource, if not properly managed by all riparian states, can create significant harm to people and to the ecosystem (1968, pp.1242). If each riparian party sticks to the notion of ultimate resource capture and overexploit the resources irresponsibly, the tendency for this renewable resource to meet the need for future generations remains highly in doubt.

There are also instances of cooperation among states to resolve water conflicts and achieve fair and equitable access to water resources. Kofi Annan mentions, "The water problem of our world need not be only a cause of tension it can also be a catalyst for cooperation--- if we work together in a secure and sustainable water future can be ours." (Annan, Koffi, 2002). The history of water cooperation dates to 2500 BC on the Tigris

River between the Lagash and Umma city states of Sumerian. The treaty was the result of a “Water War” between the states. Since then, many treaties have emerged to manage the conflict between the riparian states (Delli and Wolf, 2003, pp. 61). While water remains a source of conflict it can also be a resource for peace. Some scholars argue that resources are not the only source of conflict, but they are also about resources for cooperation. These theories are divided into three categories. 1) scarcity skeptics; 2) non-conflict theorists; and 3) environmental cooperation scholars (Wasinger, 2015). There are many instances where countries have cooperated over TBW such as the United States and Canada have established comprehensive Treaties that ensure the proper distribution and management of waters between states. Water has played a critical role in improving the bilateral relationship between Pakistan and India; the agreement on Indus water river led to an improved bilateral relationship between the countries (Kirimani, 1990). Water can also act as a catalyst to begin negotiation, such as people-to-people links established by Track II initiatives in Jordan. Water can also create collective identities and institutions such as efforts under the Southern African Development Community in Africa. Undoubtedly, the benefits of cooperation over rivers are many including environmental benefits as the quality of water will improve, economic benefits such as energy production and better flood management and lack of political tensions will save expenses (Sadoff and Grey, 2005). There have been several initiatives that served as shifts in paradigm from conflict to cooperation. These initiatives include the Freshwater Dispute database (TFDD) that was created to provide suggestions for water cooperation and prevention of conflict. The other effort is International Freshwater Treaties Database, (IFTD) that keeps a record of over 450

transboundary water issues with documents dating back to 1820. Another project is Basins at Risk (BAR) that defines the correlation between wars and water disputes, indicating that the number of cooperation agreements is higher than the incidents of violence (Gleick, 1993).

Scholars have relied heavily on the amelioration of conflict and the promotion of collective action for cooperation to analyze water disputes. Most of literature places transboundary water issues either under conflict and or cooperation categories, whereas the recent trend is to utilize the “*Twin Framework*”, which is a tool to simultaneously analyze the conflict and cooperation events to highlight the mode of interaction between riparian states analyzing both conflict and cooperation events simultaneously (Zeitoun and Casco, 2010). As per this tool the Zeitoun and Casco clearly depict the events of conflicts and cooperation that happen simultaneously in the water interaction between and amongst the riparian parties. Subsequently, transboundary water issues cannot be resolved in isolation, as water flows from one point to another connecting people, ecology, and states. Therefore, any cooperation on TBW entails an understanding of the region as a system that interacts on several social, economic, and environmental fronts. In addition, transboundary water conflicts cannot be resolved without understanding the historical water sharing systems, cultural norms and narratives, geographical realities, and power dynamics shaping interactions between states and non-state actors in a region. International adaptive management and integrated water management does not happen under the circumstances of asymmetric power (Burgesse, Taylor and Sinha, 2013). Realists believe that smaller and

weaker riparian states tend to lose in water negotiations, as more powerful states are better equipped with resources and strategies to capture resources unilaterally (Duedney, 2009). In attempts at cooperation, weaker states fail in seeking equal benefits from shared water basins. The literature also highlights a few cases of cooperation among riparian states with power asymmetry in which the weaker states managed to acquire equitable benefits.

Conventionally, water discourse is highly influenced by describing conflict and cooperation events without paying due attention to the power asymmetries among riparian states. However, the “Framework for Hydro-Hegemony” has elaborated on different forms of power influence on the course of water interaction for riparian. According to the framework, it is not international law, or the sources of water but the asymmetries of power that decide the outcome of water interaction. In most of the cases of water interaction hydro-hegemony managed to manipulate the weaker parties, exploit, and dominate the water interaction and ensure more benefits for itself in the cooperative treaties (Zeitoun & Mirumachi, 2008; Zeitoun & Warner, 2006). FHH (framework for hydro-hegemony) is not only used to understand the sources of power but how the power is exercised in exploiting the benefits of water resources.

Although hydro-hegemony is considered a viable tool in analyzing the sources of power by all riparian states, it is not considered complete in explaining the strategies adopted by the weaker riparian states to counter the hydro-hegemony (Cascao, A.E. and Zeitoun, 2010). In the case of weaker states, some of the strategies and tools adopted by

weaker riparian states that resulted in positive outcome include coalition building, development of alternative strategies, time used as a resource that can change the interest of riparian states over time and focusing on wider basin development than bilateral development. Countries can also trade in water intensive commodities and manufacture water resources to avoid instances of conflict. The role of third party/ donor or external alliances can also strengthen the position of weaker riparian states (Lomborg, 2008). Therefore, I argue that weaker riparian has certain level of leverage and power to direct the TBW interaction in its favor. These practices and resources shall be thoroughly studied and analyzed to further balance the water interaction.

## **1.2 CONTRIBUTION TO RESEARCH AND POTENTIAL FINDINGS**

The focus of this research will be to delve into those cases and draw upon examples of equitable benefit-sharing without compromising the rights of weaker riparian states. These cases would allow further understanding of the power interplay of factors such as geopolitical relations, the role of a third party, political will, and administrative capacity in favorably shaping interactions for weaker states. Regional conflict resolution mechanisms usually entail cooperation processes which can either be home-grown or supported financially and technically by the international organizations and bilateral donors. Those cases will be thoroughly studied to better understand the role of third party in shaping the power relations and conflict resolution processes. This research aims to contribute towards regional transboundary water conflict resolution, particularly regarding safeguarding the water rights of weaker riparian states in two ways. Firstly, it will unravel the sources of power in weaker riparian states and secondly, identify strategies, tactics or tools that have

been adopted to balance the playing ground for safeguarding water rights in the long term not only in the process of negotiation or formulation of treaties. This study will focus on state relationships and the role of third party in challenging power asymmetry and the role of regional and international organizations in levelling the ground for equitable water interaction. To better analyze the power asymmetry and strategies, tactics, tools, and practices to counter hydro-hegemony, the cases of India-Nepal, Afghanistan-Pakistan, Afghanistan-Iran, and Amu Darya (Tajikistan-Uzbekistan) water Basins will be studied. These cases were selected because: 1) All of these cases fall under region of the Hindukush/ Himalayan/ Karakurm and Pamir Mountains, Afghanistan representing a geography with socio-economic and political situations and weak regional institutions to support programs for water cooperation. In all these cases, the role of hydro-hegemon is key in shaping the TBW interaction, and power asymmetry is the main cause of diplomatic tensions between riparian states leading to poor governance of water basins and affecting cooperation on non-water issues.

### **1.3 RESEARCH METHODOLOGY**

This study will employ “Qualitative Research Methodology,” using case study and thematic analysis of selected documents, speeches and data collected from semi-structured interviews. Considering that, both primary and secondary sources of data will be used. The primary source of data will be government, and non-governmental reports and official remarks by government authorities and interviews from the water experts. The second source of data will be gathered through collected from books, published journal articles and interviews available online. Cases will be selected that demonstrate existing power

asymmetry in transboundary water conflict and cooperation relations. The analysis will outline the sources of power possessed (geography, material, discursive and exploitative powers) by both water hegemon and non-hegemon possess, detailing what tools and tactics have been employed by non-hegemon to counter the hegemonic power for exploitation of water resources and or for transforming the negative role of water hegemon to a positive or leadership role for the equitable water distribution and integrative water governance.

## **1.4 CONCEPTUAL FRAMEWORK**

### **1.4.1 Regional Water Conflict and Cooperation Nexus**

Regional conflicts can have common features as they often cross international borders and propose unique sets of challenges to international peace and security. These conflicts can create the conditions for the involvement of foreign forces from neighbors, non-state actors and international forces such as the UN Peacekeeping missions. Under IR theories Regional Conflicts can be divided into traditional and non-traditional security issues. Most of the traditional or hard security issues, or hard security issues, are addressed in the literature using approaches that are rooted in the Westphalian Peace Treaty of 1648 while Non-traditional security issues became more prevalent after the end of World War II in 1945 (Buzan, 1991). The causes of these threats include terrorism, organized crimes, epidemics, environmental degradation, and contested waters. States cannot separate themselves from others managing their watercourse independent of the international system as water conflicts are not only technical in nature but also social and political, requiring legal and non-legal frameworks including NGOs and informal community initiatives to allow the riparian states to find a common ground for proper allocation and

benefit-sharing, as in the case of ancient Rome where water laws addressed issues pertaining to internal water management and shared watercourses (Aschcraft 2017, pp. 14). To understand the factors affecting the regional conflict and cooperation on transboundary water management, it is vital to review the existing body of knowledge that guides the discussion.

As (Mirumachi, 2013) would argue, conflict and cooperation over transboundary water issues cannot be analyzed separately and can be better understood using a TWIN framework (Transboundary Water Interaction Nexus). The failure of regional conflict resolution is attributed to regional structures lacking coherent legal foundations, lack of conflict resolution experts, ineffective organizational structures, poor coordination, and lack of contingency plans for the management of long-term risks (Diehl and Leggold and Diel, 2003 pp. 5-12 and Sakuwa, 2017).

Factual disagreements arise from uncertainty, lack of proper knowledge of surface and groundwater conditions, lack of reliable data and lack of equal access to relevant data all contribute toward water conflict. Furthermore, conflict arising due to situational analysis, stakeholder analysis and hydrological surveys create an environment of mistrust among riparian states (Plengsaeng, Wehn and Zaag, 2014). Internal factors such as a lack of cooperation among different sectors of water governance can also impact the interactions between riparian states. Inter-agency coordination issues between different ministries can vary massively (Mirumachi, 2010, Wolf, 2009). Water stakeholders are usually divided

into states, international organizations, regional organizations, public and private agencies. Joint research and joint data analysis is critical to generate and acquire data which is acceptable to all riparian parties.

Conflicting goals of riparian states are often the result of differences in values. In TBW interaction, national interests are followed obsessively under the guise of cooperation. The proposed strategy for addressing conflicting goals is convergence, and/or using a win-win approach. In cases where goal convergence does not happen, the alternative approach is to aim for a win-win solution (Loehman and Dinar, 1995). For example, if water issues get linked to overall regional development issues, presenting water issues with the other issues in a package can raise perceived importance among policy circles. Unfortunately, linkage cannot work if the issues are too complicated. The other area is lack of clarity on benefit-sharing that includes ecological conservation, investments in maintaining the shared water basins, sharing cost pertaining to the development of new infrastructure, and costs associated with training in policy, technical and administrative matters. It is essential to be decisive about benefits early on to prevent conflict (Lebel, Lebel, Chitmanat and Sriyasak, 2014). In the case of the Ganges River, path dependency, political will, and basin-wide governance, including large-scale projects with economic benefits, provided additional incentives for cooperation (Wolf, 2009).

Thus, the regional water conflict resolution processes can be better understood by analyzing the conflicting goals, factual disagreement, benefit-sharing mechanism, and regional structures with responsive mechanisms to address the emerging conflicts between

riparian parties in conflict. This is another key area which defines the outcome of water interaction. Power asymmetry between riparian parties is the major cause of lack of regional water cooperation and environmental degradation, however, it can also play as a catalyst to bring to the table the weaker riparian, provide more in the account of which is described below:

#### **1.4.2 Power Asymmetry Shaping Water Interactions**

Transboundary water conflicts can be better understood and resolved by understanding the regional power dynamics, the interaction between states and non-state actors, and the role of regional organizations in the prevention and resolution of conflicts (Swantstrom, 2011). Transboundary water issues cannot be resolved in isolation, as water flows from one point to another, connecting people, ecology, and states (Wolf, 2009). Any cooperation on TBW requires an understanding of how the power relation in a regional system interacts on several political, social, economic, and environmental fronts. Environmental regionalism is gaining more attention among policy circles and academics as the current global trend moves towards water shortage and desertification due to climate change and population explosions (Kulauzo and Antypas, 2011, pp.114). The global water discourse is shaped by three factors: universalism, scientification, and rationality (Stetter, Herschinger, Teicheler and Albert, 2011). For scholars and water experts it is the scientific and technical aspect of water management that creates regional conflicts, while others believe the role of power and geopolitics shapes water interactions. Several theories around water conflict emphasize that water scarcity, poor water quality and unfair water division can perpetuate competition and conflict. Despite the effectiveness of regional frameworks

to bolster the environment of trust and cooperation, challenges remain significant in preventing, managing, and resolving regional water conflicts. Nations are often engaged in waging latent conflicts in the regional forums over contested sovereignty, as many riparian states function in a strict, closed system and delegate any meaningful authority to a regional organization contradicting the notion of sovereignty (Fawcett, 2013) In most of the regional platforms, the role of powerful nations is decisive in shaping cooperative mechanisms around transboundary waters, and the hegemon tends to direct the agenda and outcomes, usually in its own favor (Souderbaum and Timothy, 2003). From IR perspective, power plays a key role in maximizing a state's ability to capture resources and enhance its role in the international system (Buzan, 2003). Mistrust and suspicion mark the bigger part of the relationship where parties see transboundary waters as a matter of zero-sum security issues, and they focus on the unilateral capture of resources and competition rather than cooperation frames the entire water discourse (Thomas, Azizi and Behzad, 2016). History is replete with incidences of states fighting with each other over natural resources, including river basins and energy reserves (Lind, nightingale, Schmitt, Sutton, & Wilson, 1989). However, many recent scholars in this field argue that capture of resources is not happening by waging wars but by designing strategies and tactics to undermine the weaker riparian states (Zeitoun and Jeroen, 2006). Power asymmetries have directly and indirectly impacted the water arrangements both during and after negotiation processes which had been earlier considered by scholars. (Waterbury, 1994; Lowi 1993). And scholars from both IR and the field of political science field have discussed in detail the role of power in shaping water interaction.

According to (Lukes, 1974) power is the ability to influence the action of others contrary to their interest. He argues that the existence of power is manifested in situations where a particular group possesses power over another group. Luke describes three dimensions of power, two of which are associated with the institutional process. For example, the first dimension of power reveals the proportion of power existing with one group over another, as the financial power of a stronger riparian states can influence the decision of a weaker riparian state through investment in more water resources construction, such as dams and barrages. The second dimension of Luke's power is the ability to prevent and refrain the other group or individual from attaining its interest, which is very relevant for a stronger riparian state using non-water issues to sabotage, silence or sideline the weaker riparian state from attaining water rights.

## **1.5 DIFFERENT FORMS OF POWER SHAPING WATER INTERACTION**

**1.5.1 Hard Power:** The first dimension of power is hard power which is associated with the economic, military, and technological capacity of a state. Hydro hegemony can use its hard power to capture water resources unilaterally, however, the use of force in regional water conflicts is not usually advisable. Mirumachi (2013) argues that India's military is directly affecting the water relation between India, Bangladesh, and Nepal. However, many environmentalists would counter the notion of securitization, as environmental issues cannot be fought militarily, as this could lead to further environmental destruction (Deudney,1990).

**1.5.2 Soft Power :** Other forms of power are identified as soft power, negotiating power or exploitative power and discursive or ideational power. Negotiating power is demonstrated in the form of influencing the negotiation outcome and offering incentives for the riparian states to comply with the pre-emptive agenda (Hensel & Brochmann, 2007). Negotiation is regarded as a positive-sum process with an outcome that satisfies all parties, but only if parties come willingly to the negotiation table without the use of force or coercion (Dinar, 2008). Power symmetry plays a critical role in ensuring the effectiveness of negotiation processes and outcomes (Zeitoun & Jeroen, 2006). States with a high degree of negotiating power tend to have savvy and eloquent water negotiators available, with access to scientific and hydrologic data (Wolf, 2006). In addition, the negotiation power is not only limited to the formulation of treaties but includes implementation of what has been agreed upon through institutional arrangements in the negotiated treaty/agreement (Dinar, 2008).

**1.5.2.a Discursive power** is the third dimension of power imposing on others a sanctioned discourse or an ideology through a dominant narrative. This form of power is based on Michael Foucault's definition of discursive power, entailing all forms of verbal and non-verbal communication that influence the outcome of an interaction. He emphasizes the power is inseparable from knowledge (Foucault, 1980). The TBW interaction between states at the international level is often the reflection of internal discourses within a riparian state.

Furthermore, analyses of discourses are only possible by thoroughly understanding the political, social, economic, and psychological context of each riparian state (Ashcraft, 2017).

Water discourse is often highly politicized and securitized, which tends to complicate decision-making processes (Perlman and Itay, 2018). Securitization tends to push all discussion towards zero-sum gains and parties tend to resort to containment strategies and resource capture strategy which creates further asymmetrical power dynamics. Furthermore, the narrative on cooperation between countries can be overshadowed by the countries being entrapped in political hostilities independent of water issues. The securitization and politicization of water issues tend to limit the space for third-party interventions. Therefore, international actors have deliberately withdrawn from the process knowing the political will of the parties is limited. (L. Lebel and B. Lebel, Chitmana, Uppanunchai & Apirumanekul 2018). The key policymakers can also counter the narrative to create equal playing ground weaker and stronger riparian in conflict: as Kofi Annan mentions, "The water problems of our world need not be only a cause of tension; they can also be a catalyst for cooperation. If we work together, a secure and sustainable water future can be ours." (Annan, Koffi, 2001).

Furthermore, countries with tendency to politicize and securitize the narrative around TBW water management can further add to the complexity and prevent the involved parties from viewing water issues as separate from those of the governing political elites.

Countries with high politics tend to securitize water issues and may even use water as a weapon to wage other non-water conflicts (Zinzani and Menga, 2017). Politicization includes forming coalitions among riparian states to sabotage and sideline the weaker or dominant party. Linking water with other issues can also make the environment for cooperation murky and complicate negotiations or stall the implementation of agreements (Dinar, 2008).

Water issues are currently highly politicized and securitized in different regions, with many states having included water as a priority matter in national security policies. Securitization of water happens in a more discrete manner (Zeiotoun and Mirumachi, 2008). The role of communication is detrimental in securitizing waters, and the discursive regime shapes the notion of whose rights are violated by whom, thus giving rise to a victim-perpetrator narrative. Securitizing waters has significant implications for the allocation and use of water resources (Burgess, Taylor, and Sinha, 2013).

**1.5.2.b Position power or geography:** The position of a riparian state (upstream or downstream) can also shape the mode of interaction between riparian states. Many argue that being upstream allows a state to exploit more water and build a hydraulic infrastructure unilaterally. However, Warner and Zawahri (2021) believe those upstream use water to get more water, and those downstream use power to get more water. Therefore, the position is not a key determining factor in shaping power asymmetry.

**1.5.2.c Existing Legal Mechanisms:** The hydro-hegemony literature reveals that states with more power tend to manipulate and coerce weaker riparian to comply and agree with the terms and provisions of the treaties proposed by the stronger riparian party. However, institutionalism and regime theories insist that international conventions, laws, and treaties solidify the cooperation mechanism among states over the course of time by reducing the costs of transaction, predicting the future rules, and reducing conflict among riparian (Loehman and Dinar, 1994). Institutionalists also argue that institutionalization can counter hegemony by setting up new modes of cooperation. The process is challenging demanding efforts at structural, directional, and instrumental levels (Grubb and Gupta, 2000).

International law reproduces the discourse on issues on global platform, which subsequently is adopted by the nation states. It creates ideas, norms and values which define the framework within which policy makers function (Cortell and Davis, 1996). It is a tool in negotiation by both weaker and stronger riparian to dominate the water discourse or counter the hegemonic power (Zietoun and Warner, 2006). Prior to the Helsinki Rules 1966, Harmon Doctrine of Absolute Territorial Sovereignty was the basis of using shared water resources. Many countries still rely on this doctrine to pursue TBW interaction, causing serious delays in cooperation at multiple levels. Currently, the most authoritative expression of International Laws in managing water disputes is the UN watercourse convention 1997 that based on the Helsinki rules outlined in under “Equitable and Fair” use of water by both upstream and downstream riparian states without causing significant

harm to each other. Another framework is the “International Water law”. The law also serves as a guide to determine the substantive rules which are associated with the right of states to benefit from watercourse and the procedural rules that outline behaviors for states while developing their water resources (Wouters, 2012).

Though “equity” and “fairness” as argued by Briscoli and Wolf (2003, pp. 61) are ambiguous and relative terms that can hardly determine the allocation of waters among states by providing a set of concrete criteria. Significant changes have happened in the overall laws related to water rights, under the UN Convention on Watercourses 1977, these instruments often used to understand the mechanisms for countering hydro-hegemony, especially by balancing the playing ground among weaker and stronger riparian, creating ideational power and countering hegemon dominate narrative ( Deudney, 2008; Zeitoun et al. 2001). However, despite the successes associated with the role of International laws and rules, they are still subject to state behaviors and norms and remain highly influenced by power and politics and can also serve to reinforce the power asymmetry between riparian states (Zietoun and Warner, 2006). Many scholars believe the law has been used as a viable tool to further solidify the hegemonic relations between riparian states. The positive change can happen as the content of the law get updated, ratified by all hydro-hegemon with the establishment of the organizations to monitor the implementation by depending on scientific evidence and emergent patterns of riparian states interaction. Furthermore, the laws of states shall also aspire international standards as Deudney (2008) argues that water

cooperation can also be impeded by if water rights are independently formulated without considering the implication of riparian states water relations.

#### **1.5.2. d Binding Arbitration and Adjudication:**

Parties lose their decision-making power to an arbitrator, tribunal, or court system in case parties fail to reach an agreement. Legal methods are helpful for weaker states who have a chance of losing in negotiations, and this method can prevent the eruption of violence among parties. The limitation of this approach is that it sometimes addresses only the legal disputes without focusing on long-term relational, structural, and social issues associated with regional water conflicts (Piccolino and Minou, 2014). However, even to address the legal aspects of the agreement, parties must agree in advance that disputes can get resolved using the legal frameworks. This can be a great tool with the weaker riparian states to address any unequal treatment by the stronger riparian state in the wake of any unresolved matters.

#### **1.5.2.e The power of the Third Party:**

A third party can be crucial to the initiation of cooperation processes among states in conflict. As in many other politically tense and hostile bilateral and multilateral relations, the third party can move the conflicting parties to look beyond their hostile relations and focus on sharing benefits because of cooperation (Hampson, 2015). Trust also plays a critical role in boosting cooperation among the states. If the parties are skeptical of one another's intentions, cooperation on TBW will be delayed or not pursued without political will. Track II initiatives, as argued by Fischer, can play an integral part in creating a pre-negotiation environment (2007). The track II involves Civil Society organizations, Think

Tanks, legal firms, academic institutions, basin, and non- basin regional and international organizations including donor agencies. It is also important that civil society is involved in transboundary water discourse. This will allow countries to build an environment of trust and confidence and depoliticize the water management discourse (Stetter, Herschinger, Teicheler and Albert, 2011, Colombi, 2010, p. 281).

Regional organizations can also be beneficial in mobilizing the financial and technical resources necessary to respond to common challenges. These organizations have better access to international donors which makes resource mobilization much more possible. For example, the ADB (Asian Development Bank) and the Ford Foundation were critical in fostering an environment for cooperation among India, Nepal, and Bangladesh in the 1990s. However, India relied heavily on bilateral mechanisms to generate prompt decision-making and avoid the collaboration of two riparian states to maintain its hydro-hegemony power. The UNDP (United Nations Development Program) had to mediate the conflict and propose new rules that could ensure cooperation between riparian states in the case of the Mekong conflict during the year 1999. The study for the development of the lower Mekong was supported by the US engineers and the Ford Foundation, and the aim was to define the rights and duties of riparian states. In the case of the Mekong conflict, the UNDP played a vital role in diverting the attention from water as an emergency issue to a technical working issue (Mirumachi, 2015, pp.111-115).

Despite the effectiveness of regional and extra-regional organizations to bolster the environment of trust and cooperation, significant challenges remain in preventing, managing, and resolving regional water conflicts. One of the major obstacles is the formation of various overlapping regional institutions (Piccolino and Minou, 2014). Nations are often engaged in waging latent conflicts in the regional forums over contested sovereignty, as riparian states function in a strict, closed system and delegate any meaningful authority to a regional organization, contradicting the notion of sovereignty (Sakuwa, 2017). In most of the regional platforms, the role of powerful nations is decisive in shaping cooperative mechanisms around transboundary waters, and the hegemon tends to direct the agenda and outcomes, usually in its own favor. Over-emphasis on a single regional conflict resolution approach provides little room for creativity and contextualization (Fawcett, 2013), as each region is different from the next, demanding homegrown initiatives that are contextually appropriate.

The reliance of international organizations such as the United Nations on major regional organizations for analysis and conflict resolution may not be a benevolent approach in all kinds of environmental conflicts. In such cases regional approaches to conflict resolution can remain ill-informed. Therefore, the relevance of each regional framework should be evaluated individually to assess its functionality and relevance for conflict resolution (Sakuwa, 2017). The theory behind the creation of regional frameworks for conflict resolution is to invest the authority in regional actors to respond to shared challenges in an effective and efficient manner. With that said, if regional frameworks do

not integrate the voices of civil society and local stakeholders, the tendency remains high to act as regional power hegemon and sabotage or sideline the very core reason for which these organizations were formed and prove counterproductive in prevention and resolution of conflict. Track-II initiatives as argued by Fischer can play an integral part of creating pre-negotiation environment (2007).

Literature on regional environmental conflict resolution is also highly reflective of perspectives from the United States, the World Bank, and the United States Agency for International Development (USAID), without taking into consideration the role of other significant actors such as local civil society, academics, and activists and the cultural aspects of different contexts (Piccolino and Minou, 2014). Lack of comprehensive stakeholder mapping could lead to formulation of policies and programs that are less conflict-sensitive and sustainable. The grassroots perspectives are essential as communities living across transboundary rivers get impacted by poor management of waters. These communities can also cause internal conflicts due to deprivation of their basic water rights by the state authorities. Therefore, lack of TBW management is not only the underlying cause of internal conflicts but also intra-states conflicts within the states among several stakeholders working on various aspects of water management (Alam, 2002). Thus, any conflict resolution framework shall be tailored to the needs of all levels of stakeholders and include the role of grass-root organizations. The approach of international organizations entails several complexities, one of which is, “one size fits all” which are not effective in every river basin. Furthermore, international, and regional frameworks are also guided by

power politics with various levels of bureaucratic structures that can highly impact the weaker riparian states with lower human capacity and technical resources to advocate for equitable solutions.

**1.5.2.f The Power to Enforce Cooperation:** In some river basins, under the guise of cooperation, real cooperation does not happen (Casco and Zeitoun, 2010, pp. 10). When dealing with water interaction, there shall be a clear distinction between non-cooperation, limited cooperation, dominant cooperation, and comprehensive cooperation (Mirumachi, 2013). When power asymmetry is high, the prospect for water cooperation may look promising on the surface, but the cooperative mechanism cannot guarantee meeting the needs of the non-hegemon state. Cooperation can also be a result of aid dependency on foreign organizations, and cooperation can be a means to please dominant organizations, at the cost of failing to achieve an equitable sharing of water resources. In summary, political will, long-term vision, trust, and adequate financial and technical resources are considered prerequisites for any meaningful and sustainable regional cooperation on TBWs (Ganoulis J., Fried J. 2018). Whereas, under asymmetric power relations, the hegemon decides the mode and pace of cooperation and exploits the riparian states under the guise of cooperation (Selby 2003). To understand how power shapes riparian states interactions Zeitoun and Jeroen have developed the “Framework for Hydro-hegemony” (2006). Conca (2016) suggests that “there are two pathways through which cooperation on environmental issues can be enhanced, 1). Boosting trust-building and extending the times, and 2) strengthening of post-Westphalia governance systems by focusing on the creation of shared

identity. Third party can enhance the trust among the riparian facing asymmetrical power relations.

### **1.6 FRAMEWORK FOR HYDRO-HEGEMONY (FHH)**

According to Zeitoun (2006), it is not the hard power, but the application of soft power that plays its role throughout the water arrangement process and impacts the outcome. Hydro-hegemony is defined as the power of sovereign states to control water politics over neighboring states. It is not only the upstream states but also the downstream states that can act as hydro-hegemon. Power struggles are best explained under the theoretical framework of hydro-hegemony (FHH). It is one of the analytical tools for analysis of power relations in transboundary water conflicts. This tool does not only focus on the manifestation of hard power but also highlights the latent forms of power that sets both the outcome and processes in describing the nuances of water conflict and cooperation. There are four pillars to this framework which includes, Geographic power, material (hard power) and ideational (soft power) and exploitative power/negotiation power. The framework is based on the work of Lukes' (1974) and Gramscian notion of "ideational hegemony" to describe the riparian states position of power, exploitation of power, and discursive power. FHH is used to understand who gets how much, where, and why (Zinzani and Menga, 2017). Zeitoun argues that hydro-hegemons exercise the power and authority to derive more benefit from the outcome of TBW interaction (2010). Hydro hegemony can be either positive or negative where positive is associated with the reputation, management, and ordering (leadership) that benefit all riparian states while negative hydro-hegemony involves the exploitation and dominance of weaker states (Dauody, 2009). Furthermore,

FHH is criticized for its state-centric approach, especially in the case of interstate water relations. ( Warner and Zawahri 2010). However, the role of non-state actors is recognized by the international legal system and shall be incorporated in this framework accordingly (D' Aspremont, 2011). Non-state actors are usually the informal civil society organizations, community initiative and councils who have a huge impact on the day-to-day use of transboundary waters. These voices need to be amplified by the major stakeholders and need to be brought into the center of the policy centers discussions.

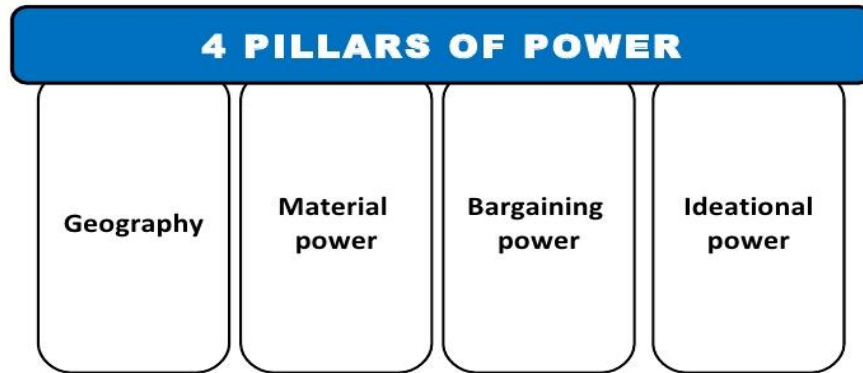
FHH is used extensively in the areas of Water Security, TBW Justice and Contesting hydro-hegemony. However, Casco (2010) argues that hydro-hegemony is not incontestable phenomena and develops a Framework of Counter-hegemony on how to balance the playing ground for the weaker riparian states. He argued that when a hydro-hegemon creates a situation of inflexibility, inequitable and unsustainable outcome, the situation becomes ripe for changing the situation. She also insists that changing the course of order is highly challenging as it is to sail the boat against the tide, difficult but possible. She proposes certain strategies and tactics which, if used with due diligence, can pave the way for a desired outcome, for example, contesting the legitimacy of the order, envisioning alternatives, and challenging the status quo (2007). Some tactics of counter-hegemony are coercion by a cooperation by third party leverage mechanism pursued through water diplomacy, coalition with other non-hegemonic riparian states, unilateral construction of infrastructure, and liberating mechanisms including formation of basin-wide institutions and agreements (Dauody 2009). Hydro-hegemony has multiple layers and unraveling the

power dynamics in each basin allows us to understand the power each riparian state has, especially when it comes to weaker states. This framework can be used to describe how states allocate their sources of power and how those sources can be further expanded and exploited.

While the hydro-hegemony framework provides a useful tool for understanding the power relations between riparian states, it does not provide a systematic approach to studying the strategies and tactics or tools adopted by the weaker riparian state to counter hydro-hegemon (Tawfik, 2015). For example, the framework describes the four pillars of power such as: 1) Geography; 2) Material Power; 3) and Ideational power ; 4) exploitative Bargaining Power 4); but does not provide any specific approach to assess and analyze the role of power and how these factors interact with each other in shaping the outcome of interaction.

Soft power can also be used for countering negative hydro-hegemony; discursive and ideational power can be created to counter the hydro-hegemon's dominant narrative. Soft power can be generated by academics' circles, think tanks, lawyers, media outlets and civil society groups to build a movement against the hydro-hegemons' rules. However, power relations are contextual, too, and to understand the real sources of power and how they influence and shape the conflict, it is vital to assess each case independently and to identify both the overt and covert forms of power accordingly (Thomas and Jereon, 2015).

## Asymmetric Power Relations: explanatory factor



*Framework of Hydro-Hegemony  
Zeitoun and Warner 2006*

Figure 1: Retrieved on Dec 2019: [hydro hegemony framework by zeitoun - Bing images](#)

Therefore, FHH can be borrowed to analyze power dynamics between riparian states, as water conflicts can be intensified through misusing power asymmetry. Furthermore, hydro hegemony is a loosely used term, which does not describe the role of various actors and factors both internal and external in shaping the water outcome. Weaker states also share sources of power which if used strategically and tactically can influence the mode and pace of interaction. However, for the purpose of this research, I will explore the water basin across Ganges River, Central Asia, and Afghanistan to better understand the utilization and application of those power sources in countering negative hydro hegemony and contesting for equitable water rights. Therefore, the question I intend to explore for this research is:

## **1.7 RESEARCH QUESTION**

“What tools and practices have been or can be adopted by the weaker riparian states to safeguard their water rights while interacting with a hydro-hegemon”?

“What sources of power can be fully exercised to ensure equitable water rights in the face of a stronger riparian states?”

I will explore this question in relation to the above-mentioned regions. To better answer this question, I will unravel the cooperative treaties, major national and international documents, policy briefs and interview key water interlocutors/officials to unravel power asymmetry shaping the major modes of cooperation. It is critical to pinpoint the conditions that allow parties to equally participate and ensure equitable access to benefits associated with shared waters. These research questions will further guide me to unwrap the sources of power among weaker riparian states and under what conditions major provisions were included in the treaties that guaranteed equity of long-term benefits for those states as well as how benefit-sharing was described in each case that pushed the parties to resolve conflicts.

## **1.8 TRANSBOUNDARY WATER CASES**

To understand the processes, tools and practices adopted by weaker riparian states to safeguard their position, I will delve into five transboundary river basins that runs across Himalayas, Central Asia, and Afghanistan. Cases such as India-Nepal water interaction (Ganges River tributaries), Central Asia (Amu Darya- Afghanistan, Afghanistan-Pakistan (Kunar and Kabul River), Afghanistan and Iran (Helmand and Harrirud) will be thoroughly

studied. I will utilize these cases and other similar cases as a prism through which power asymmetry and other associated factors will be explored in other river basins as well as how weaker riparian states managed to counter negative hydro-hegemony to not lose badly in water distribution. These cases share main criteria; firstly, they all belong to a specific region Pamir/Hindukush/Karakurm/Himalaya, Afghanistan (composed of three river basins) and Amu Darya. Secondly, in all these TBW cases, the power asymmetry has exploited the weaker riparian state and water hegemon has benefited to a greater level. Third, all these countries are in underdeveloped countries with poor economies. Fourth, the role of regional organizations is not so vibrant in resolving TBW conflicts.

### ***1.8.1 Ganges-Brahmaputra River Basin***

Ganges Riparian: China, India, Bhutan, Nepal, Bangladesh comprises the riparian states of the Ganges/Brahmaputra. China is the upstream riparian and has had limited interaction with the downstream riparian states. Recent plans for the construction of hydropower dams hold the potential for conflict. The total population dependence on the basin is 633 million people. The major source of its waters are the glaciers of the Himalayas, often called “Asian Water Towers.” The major headwaters stem from rivers and tributaries of India and Nepal where sources of snow and rainfalls are high. The other source of water is Monsoon in this region. It is one of the most complex yet fascinating river systems on the globe. The river has a high level of heterogeneity from climatic, hydrological, geomorphological, cultural, environmental, and socio-economic perspectives. This is considered a river at risk, and the water flow is affected by hydrological changes from climate change, melting glaciers,

ecosystem, livelihood and over abstraction. The other major concern is pollution which can lead to severe damage of water resources in this basin. These downstream countries depend highly on each other for food, energy, and water security. India and Nepal have cooperated on several fronts for development of hydropower dams and flood prevention. However, other regional actors are slow in joining regional efforts, posing further risk to the overall health of the basin. Most of the conflict in this region is about rulemaking and India's stronger power shapes water interaction to a greater extent (Mirumachi, 2013).

### ***1.8.2 India-Nepal:***

India and Nepal share borders and rivers which transform fresh waters as a source of competition between the countries. Many scholars and policymakers believe that water is the main cause of conflict between India and Nepal. These countries cooperate on trade and transit as Nepal is a landlocked and depends highly on India for export and import. Nepalese move to India seeking jobs and livelihoods. Nepal is a poor country but has rich water reserves and India has invested during history on its water resources for its own irrigation, hydropower, and flood control purposes. Water relations between India and Nepal date back to colonial times, when the colonial administration signed the Sarada Treaty with Nepal in 1920, and India constructed the Sarada Barrage on the Mahankali River in exchange for four thousand acres of land. After independence, India and Nepal signed the Kosi barrage 1954 and the Gandak barrage 1959 treaties. Despite the huge financial and technical investment of Indian authorities, both projects were perceived as unfair and highly influenced by India's hegemonic power. Water relations between riparian states based on power asymmetry and geopolitics guided the institutionalization of hydro-

hegemonic control of water by India. India used active stalling through its strong discursive power by persistently refusing to commit to the way benefits would be identified and shared. Furthermore, India's resource power, sanction power and hydraulic projects shaped the framework and environment for negotiation (Mirumachi, 2013).



Figure 2: Map of Ganges river, Retrieved from Google map: <https://www.mdpi.com/2071-1050/4/8/1647> (depicting the major riparian state across Ganges-Brahamaputra Basin)

### 1.9 AFGHANISTAN AND REGIONAL RIPARIAN STATES

Afghanistan and its surrounding region are among the least developed regions in the world. Among all security issues such as global terrorism, transnational crimes, poverty, and under-development, lack of transboundary water cooperation plays a critical role in shaping the security environment of the region. Afghanistan is an agricultural country and upstream in nature, except on Kunar river and highly dependent upon its fresh waters to eliminate poverty and sustain the agriculture sector. More than forty years of protracted

conflicts resulted in a total collapse of the government system, impeding the government's ability to develop its water resources and infrastructure. However, in the post 9/11 international intervention in Afghanistan, the development of water resources became one of the main priorities of the Afghan government. However, most efforts to construct water infrastructure met with huge resistance from the neighboring countries of Pakistan, Iran, and the Central Asian States due to fear of losing their unconditional use of shared water resources. Iran especially has always been distrusting of Afghanistan for using its water resources in the aftermath of conflict, therefore, Iran constantly expanded its industrial basis without considering the needs of Afghanistan in the post-conflict reconstruction era. This has further intensified hostilities between energy-starved Afghanistan and riparian Iran. Thus, Afghanistan water infrastructure development faces tremendous obstacles and riparian states are at elevated risk of losing their water resources.

**1.9.1 Afghanistan and Iran:** The cause of disagreement between Iran and Afghanistan is the Salma Dam project. It is a hydropower and irrigation dam project located in western Afghanistan on the Harirod River in the district of Chesht-e-Sharif. The dam currently generates 42 megawatts of power and meets the current electricity need of the Afghan province of Herat and its adjacent provinces and could provide irrigation to 75,000 hectares of farmland (Fahim, 2016). Construction of the Salma Dam began in 1976 following a trip to Iran by the Prime Minister of Afghanistan Musa Shafiq. The construction, however, was forced into a halt during the civil wars in Afghanistan. After the fall of the Taliban in 2001, the new Afghan government placed the project as a priority. In 2006, India committed and resumed work to complete the project within four years with an estimated cost of US &85

million. (Ramachandran, 2016). The project took more than its estimated time to complete due to constant hindrances from Iran. This project has many enemies. Iran and Turkmenistan will experience reduced water flow into their territories once the Salam Dam project is completed which can cause harm to irrigation and water development plans for these riparian states. However, Afghanistan sees the impact of this dam minimal on the water flow to Iran and Turkmenistan. Afghan officials have repeatedly blamed Iran for funding local Taliban to attack the Salma project in a bid to stop the project from completion (Mashal, 2016). However, Afghanistan's position has been that Iran's right to Harirud waters has not been yet determined. Therefore, Iran's right to protest construction of the Salma Dam is not considered a valid argument by the Afghan side. In addition, Iran has constantly built massive industrial and agricultural infrastructure on their side, benefiting from the war in Afghanistan, without taking into consideration the post-conflict reconstruction water needs of Afghanistan. (Fahim, 2016).

Iran has depleted most of its surface and groundwater reservoirs due to poor water management policies. Subsidized agriculture leaves farmers to extract massive underground water through installation of water pumps. Forty years ago, the water per capita was about 8,600 cubic meters per person, while the amount has dropped to 2,200 Cubic meters today in Iran (Madani, 2014; Thomas, Azizi and Behzad, 2016). Iranian officials blame neighboring countries, sanctions, and environmental issues for their water scarcity problem. But for water experts, there are three main reasons underlying the water crisis in Iran, including population growth and poor distribution, poor agriculture policies and overambitious development plans (Madani, 2014).

During the presidency of Hamid Karzai, the country's first transboundary water policy with the help of the World Bank was drafted several meetings with Iranian senior government officials were conducted to create cooperation around transboundary waters. However, the bilateral meetings were halted due to use of hegemonic language and use of threat in both bilateral meetings and public speeches by Iranian officials. President Ashraf Ghani also initiated discussions around the transboundary waters cooperation mechanisms but soon had to stop due to illegitimate claims made by Iranian officials in their public statements. Geopolitical factors have further compounded the issue. Iran is involved in an active proxy war inside Afghanistan competing for interest with the United States and Saudi Arabia. The politicized transboundary-waters narrative provides another solid reason for interfering in Afghanistan's internal politics.

**1.9.2 Afghanistan and Amu Darya:** Afghanistan is also an upstream riparian state in the Amu River, which is the biggest river sharing among Central Asian states. Even though Afghanistan contributes more than 30% of the water in the Amu River, it has not been able to effectively use the river for its development of agriculture and energy. Afghanistan signed the first water agreement on January 11, 1843, related to navigation across the Amu Darya and the second treaty on August 18, 1926, on water usage from Amu Darya when Afghanistan was under British influence for managing its foreign policy. Afghanistan was also party to an agreement between the USSR and Soviet-occupied states for water usage from Amu Darya. However, due to years of protracted conflict, many Central Asian states have ignored Afghanistan in decisions taken on the Amu River (Wegerich, 2011).

Afghanistan-Turkmenistan; Turkmenistan is also a lower riparian state to the Murghab-Harrirud Waters originating in western Afghanistan. Iran and Turkmenistan established a hydroelectricity dam called the Friendship Dam when Afghanistan was in turmoil over its civil war. Afghan officials claim that the Friendship Dam was built without the proper consent of Afghanistan as an upstream riparian state. Therefore, Afghanistan is not obliged to compromise its water development plan to meet the water demands of the Friendship Dam. Turkmenistan constantly allies with Iran to pressure Afghanistan in diplomatic platforms to halt its development of water infrastructure. On the other hand, Afghanistan is busying electricity from Turkmenistan.

Afghanistan-Uzbekistan: Uzbekistan has conducted one-sided reinforcement of riverbanks that has adversely affected the Afghan side. The reinforcement of the riverbank on one side of the riverbed leads to erosion on the other side of the riverbed due to lack of enforcement and spring floods washing out the riverbed on the non-reinforced side of the river in Afghanistan. Both sides lack defined borderlines and continued erosion of riverbanks due to the movement of Uzbek border and military ships leads to skirmishes between the countries. Both sides claim territory on the riverbed washed by floods and continue to perpetuate border violations due to poor management of the watercourse.

Afghanistan-Tajikistan: The Amu River draws most of its water from Tajikistan; however, this country remains the second lowest beneficiary after Afghanistan. Since both Afghanistan and Tajikistan share a similar view on the significance of water for national interests, Afghanistan supports Tajikistan's position on its right of water from Amu River.

**1.9.3 Afghanistan and Pakistan:** Afghanistan and Pakistan share seven transboundary water rivers. Water flowing out of Afghanistan makes up a considerable portion of Pakistan's needs. Water from the Kabul River and the Kunar River are two leading sources of water to the Indus River. The Kunar river starts in Pakistan then flows through Afghanistan into the Kabul river and back to Pakistan. The Kabul River is 700km long and makes up 26 million out of 189 million metric tons of overall Pakistani waters. The Kabul River is home to some seven million people which constitute 23 percent of the national population in Pakistan. There is no formal water-sharing treaty between Afghanistan and Pakistan. Throughout history, Pakistan has used the larger share of water originating from Kabul and Kunar rivers. There is no formal data-sharing from Pakistan on the level of water flow and Afghanistan has stopped sharing any data in response. As Pakistan's economy relies heavily on agriculture, it attaches significant importance to its water management. Shortage of reservoirs compounded by threats from riparian upstream countries on its eastern and western neighbors has continued to put Pakistan in a state of high alert. Pakistan has an agreement with its western neighbor India on its share of water from the Indus River, but its issue with Afghanistan remains unresolved. Pakistan, however, has tried to be pro-active and initiate negotiation on waters with Afghanistan. A commission was assigned to address the issue. Pakistan's Ministry of Water and Power was supposed to draft a treaty on Afghanistan-Pakistan water use. The commission worked to determine the amount of water Afghanistan is currently using or expects to use. Although Afghanistan is not yet at a stage to exercise a water diplomacy track with Pakistan, remarks by Pakistani officials have clearly indicated that they are willing to engage with Afghanistan on the

watercourse. However, prior to any such decision, Afghanistan must determine two things: the amount of its water flowing into Pakistan and its own needs (Alam, 2012).

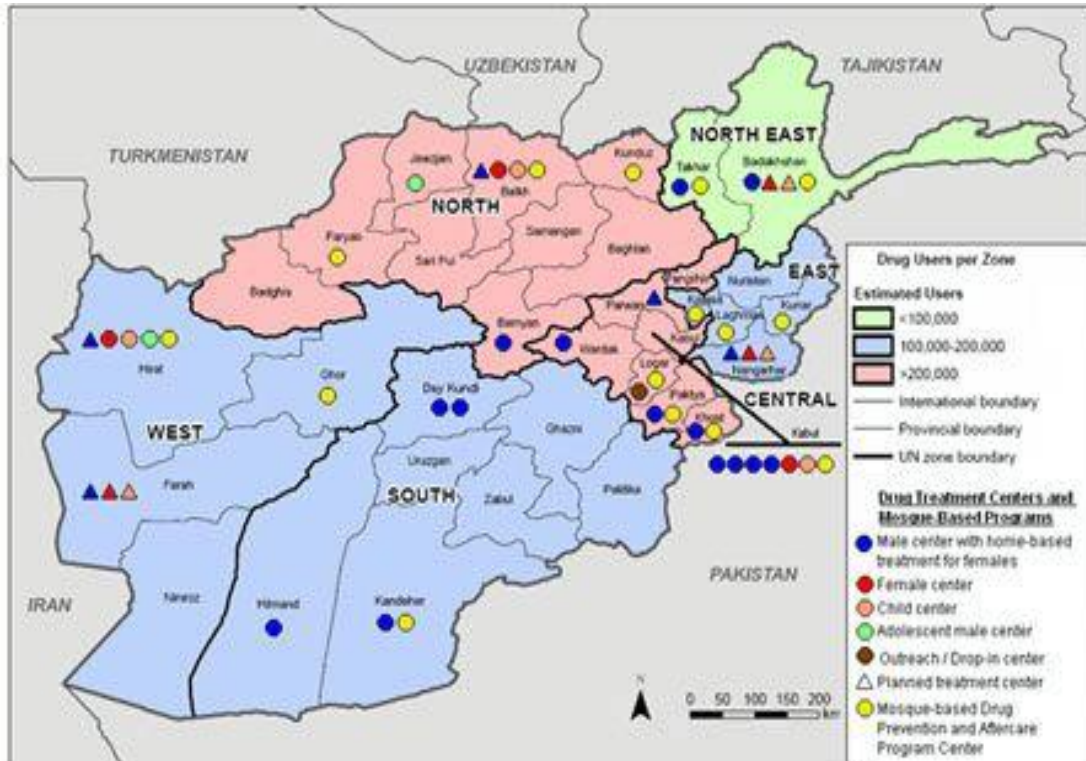


Figure 3; Map of Afghanistan and Riparian states (Derived from google map depicting Afghanistan-Central Asia, Iran, and Pakistan TBW routes) <https://www.semanticscholar.org/paper/Afghanistan%E2%80%99s-Transboundary-Rivers-and-Regional-Y%C4%B1ld%C4%B1z/eb7cdbeaa8b0d69c5723c0e0274a6c20230dbff>

## 1.10 RESEARCH METHOD AND DESIGN

This dissertation employs comparative case study as well as semi-structured interviews to provide an organized, flexible, and informed set of data.

### 1.10.1 Comparative Case Study

For this study, I will employ a comparative case study approach to be able to better describe the macro, meso and micro dimensions of riparian state power in shaping TBW

interaction. This approach can enhance and strengthen qualitative research through both comparing different phenomena and tracing across cases in shaping power dynamics in shaping and practices adopted to counter the negative hydro-hegemony. This novel approach is critical in describing the role of culture context, space and place defined according to the recent changes in social sciences (Bartlett and Vavrus, 2017). Case studies are an exploration of a bounded system of a case or cases over time through detail, in depth data collection involving multiple sources of information rich in context” (Cresswell, 1988, p.61). Furthermore, case studies are selected because of their commonality and uniqueness. (Stake, 1995). The comparative case study design will use several cases to gain insight into a central phenomenon (Cresswell, 2002; Stake, 2006; Robert K, 2014).

Case studies will pave the way for better conceptual validity for the researcher and allow the researcher to identify and measure the indicators that best suit the phenomenon as many indicators for many social and political topics are hard to measure. Case studies also help to explore the causal relationship between the variables leading to more description of historical events. In comparative case study the purpose is to discover and offer some level of problem solving (Bartlett and Vavrus, 2017) and the reason for selection of this method is to the lack of sufficient literature on the TBW dynamics in the Himalayan and Central Asia and Afghanistan case describing the power dynamics and role of different stronger and weaker riparian state in shaping the water interaction. Using comparative case studies will allow the discovery of these phenomena and aid in proposing solutions. However, it is vital to mention that Comparative Case Studies does not provide a set of rules for river basins to resolve emerging issues but can extract certain level of helpful information

through comparison. The logic of comparison and contrast is key in the traditional Comparative Case Study, where certain units of analysis are selected and controlled across all cases. However, the new conception is to trace factors such as site, individual, groups, and states. This method allows us to reflect upon the cases as they unfold processes and the roles of actors and events in different contexts. Therefore, this method focusses on horizontal, vertical, and transverse dimensions of cases demanding understanding of the process and iterative aspect of cases (Bartlett and Vavrus, 2017). I will use the inductive method to explore the dynamics/ variables shaping the power dynamics in the regions, including the practices supportive of weaker riparian states to further explore and understand hydro- hegemony which can be both negative and positive domination in water interactions.

There is criticism of this method such as case studies are long and can make the study less scientific, the selection of biased cases and the lack of rigor and sloppy way of gathering information. It is often argued that case studies are subject to biased interpretation by the researcher as the researcher has an open hand in selection of the case study, so he/she can direct the result of the findings, especially if multiple cases are selected to narrow the result in a directed manner( Piet, 2002 and Yin 1984). Despite all these criticisms in recent literature, case studies have been widely used to measure social and political phenomenon which are complex and hard to measure. I will use the method to compare various practices and strategies adopted in different water basins that proved effective and no do effective. Therefore, this method is relevant to my research goal and objectives.

To analyze the factors contributing to regional water conflicts and understand the dynamics under which riparian states have interacted, I have delved specifically into the Ganges River Basin, the Aral Sea and three river basins of Afghanistan. I have drawn upon these cases to understand the main factors impeding regional cooperation for prevention, management, and resolution of transboundary water conflict in the context of asymmetrical power relations. The rationale for selection of these cases is that they cannot be studied in isolation; all of these cases rest on strong regional dynamics and involve multiple actors. Furthermore, these regions are all underdeveloped and each has a unique set of challenges which are different from basins in the developed world, such as the lack of developed technological means for development of water resources and weak institutions to resolve conflicts. Secondly, in all these TBW cases, the power asymmetry has exploited the weaker riparian state and water hegemony has benefited to a greater level. These cases entail both conflict and cooperative events, and the interplay of multiple factors such as regional geopolitics and identities.

### **1.10.2 Data Collection**

This study will require the researcher to carefully visit and analyze several kinds of data which includes policy documents, research generated by national and international research organizations/ think tanks and academic writings, government and international organizations archives/data which includes reports, maps, and other statistical data. I will also carefully observe the events happening in these water basins and record them systematically in my reflective journal. Observation is also one of the reliable ways of

gathering data, especially in case of Afghanistan, where I have been actively involved during the last seven years following water interaction with riparian state in conflict.

Data collection will occur during the Fall of 2020. All data collected through participants will have the complete consent from the participants and will be in full compliance with the Institutional Review Board (IRB) guidelines. Data will be collected from multiple sources (Merriam, 1998; Stake, 1995; Yin, 2003) which are as follows:

Documents: The first step will be to assess what kind of documents are relevant to answer the question. Bowen suggests that a wide array of documents is better as it aids to thicken the information, but he also emphasizes on the quality of documents for more reliable data collection (Bowen, 2009) After selection of documents both internal and external (public and private documents), some of the documents may require the permission of organizations to assess and review. Proper due process/rules will be followed for obtaining those documents. I will carefully study the process and logic behind the creation of the selected documents. For this I will talk to relevant informants to collect additional information about the background and purpose of the document. These documents can be TBW reports, official correspondence, negotiation documents, treaties, and published articles from credible national and international sources. Through the document review process, I will access further information about the background information, understanding the real factors and actors involved in shaping the power dynamics and will get unobtrusive information from multiple sources. However, some of the information may be disorganized, out of date, inapplicable, incomplete, or inaccurate. It is time-consuming to gather, review and analyze the relevant documents.

Government speeches: Speeches of senior officials of all riparian states will be the target data for coding and analysis. I will be deciding about the timeframe of selected speeches depending on the major events that happened in each water basin. These speeches will be gathered through both written and spoken resources available from the internet and print media outlets such as magazines, newspapers, and government correspondence. The estimated number of speeches will be decided based on the significance of the speech and its role in either consolidating or balancing power asymmetry. Multiple media outlets will be visited to gather the paraphrased statements to maximize the authenticity of the information. All speeches collected will be checked for their timeframe, officials' positions delivering the speech, (his/her relevance and job title), and check if the speech is clear and published by a credible source. Furthermore, only that part of speech relevant to the TBW will be separated and later translated from Persian/Hindi/Urdu to English for further processing and analysis.

For example, the data collection will focus on different media sites from Afghanistan such as Hashte- Sobh, Tolo News, Ariana News, and many other print media outlets. From the Iranian side, the news outlet will be Tehran Times, Etesalat, Kayhaan, Hamshahri, Resalat and other print media. Pakistan Gew news and other available media outlets and similar search will be carried for the Central Asian Republics.

**1.10.2 Reflective Journals:** I will keep a reflective journal throughout the research to better document my understandings of the topic through observation of events unfolding during the time of data collection. As Hoover and Smith (2015) mentioned that reflect journaling adds rigor to qualitative inquiry aid the researcher should keep a robust record

of reaction, assumptions, expectations, and biases about the process. These personal notes can provide further thickness and richness to the already collected data.

Interview: The qualitative research interview seeks to describe the meaning of central themes in the life world of the subjects (Kvale, 1996). I will take interviews as they are far more personal than just sending the questionnaire, I can also probe or ask follow-up questions. Though interviews are time-consuming and resource intensive, through the interview I will follow a guide approach intended to ensure the same information is collected from each interviewee. This method provides more focus but still allows for some level of freedom for adaptability and flexibility. I will also add open-ended questions to provide more room for interviewees to express themselves and provide better analysis and comparison. I will follow the proper interviewer guide which includes description of the background of study, choosing a setting with the least distraction, addressing terms of confidentiality, explaining the format of the interview, allowing the interviewee to clarify any doubts, sequencing of questions. For this study, I will interview water officials and academics working on TBW issues in the mentioned states. I will use the snowball method to find the relevant participants who have knowledge of TBW interaction in that specific region. I will conduct interviews, semi-structured interviews with TBW officials, civil society members and academia. The participants will be selected using the snowball sampling procedure. This method is selected because it allows generating themes which can be later added with themes emerging from cases studies and can be comparatively analyzed (Glaser and Strauss, 1967). Major emerging themes generated from the data will be presented together with precise quotes from participants to provide a rich understanding of the concept.

### **1.10.3 Thematic Analysis**

I will use thematic analysis to test the underlying hypothesis for this research. This method will allow me to systematically analyze data obtained from the delivered speeches on several documents. Thematic analysis implies several techniques and approaches: conventional, directed, or summative. The major difference between the techniques is the origins of codes and coding schemes (Tuckett, 2005). This method will help me to investigate both the theoretical and methodological approaches including the use of power dynamics emanating from the spoken or written contents. It will allow the authentic text to undergo several analytical processes to unwrap the underpinning political and personal processes. These speeches will also provide authentic information about the power asymmetry between the conflicting parties through analysis of offensive and defensive language. And will allow me to understand both the micro and macro level implications of power asymmetry in shaping the environment for conflict and cooperation, where the macro- level is associated with states level cooperation and micro is associated with shaping the notions around water as a shared resource among of internal stakeholders in the respective states. For this study, the text is analyzed to make inferences about the sender of the message and about its causes or antecedents and the effects of messages on recipients (Nachmias and Nahmias, 2008, pp. 297).

Other than our actual research questions, I can also extract information about the other factors that indirectly shape attitudes such as differences between political regimes, personality types of leaders and their leadership style. According to Nachmias, the inclusion and exclusion of content are consistently applied to extract the input supporting

the hypothesis (pp.296). The benefit of this method is also the unobtrusive measure of data which removes the direct connection with the source of information or informant and thus has little influence in shaping the inferences. Therefore, the data extracted to some degree would be free of bias.

### **1.11 DATA ANALYSIS PROCESS**

Before the analysis begins, all the data will be transcribed to allow the researcher to view all aspects of research (Reissaman,1993). Microsoft Word files will be created for data collected from various sources (interviews, journals, documents). These files will be secured by assigning each file a password to each one. At the first stage, data collected will be classified under simple categories to make it easy for analysis. This process of coding will simplify the observations amenable to analysis). The purpose of coding will be to assign data into meaning generated categories than adopting sentence by sentence coding process (Nachmias and Nachmias, pp.315). For this study, the data is analyzed case by case which means that interviews, documents, speeches, and field notes for each case will be analyzed separately and then will be contrasted with the other case through emerging themes. Salient and contrasting themes will all be recorded. The study will follow the inductive approach of data analysis and develop themes. Emergent themes will further define the direction of the study if the deductive approach is required at some stage when the variances are like the selected case study. The data gathered will be studied against the emerging patterns and will place findings under categories and examine the emerging

patterns or themes. Subsequently, the researcher will use thematic analysis by using the Braun and Clark (2006) step by step guideline. Some of the key steps are as follows:

1. Pre-processing of data: Most of the material that discusses transboundary waters also includes other political and social issues that are specific to that country without any direct relevance to the topic. Therefore, prior to beginning analysis, those parts will be identified and stored separately. This will allow for the efficient management of data collected. This process is also called “cleaning and clearing” the data parts relevant to the topic under study.
2. Transforming the data: Identifying the pattern of knowledge through keen observation of main themes or ideas running throughout the data. I will also extract the mode of building claims around unilateral resource capture, including modes of persuasion.
3. Data mining: In this step, the data collected will be patterned into categories and sub-categories.
4. Data analysis/evaluation; This step includes interpreting the patterned knowledge or data by using a data analysis tool.
5. Data cleaning and presentation: All the data collected will be checked for consistency, clarity, and freedom from corruption- meaning data shall be in clear categories without manipulation of words or associated meanings. Data should also be interpretable and free from glitches such as a typo, defaulted or missing values and multiple formats. Data cleaning will happen manually by the key researcher.

## **1.12 RELIABILITY AND VALIDITY**

Social and behavioral scientists critique qualitative research methods for their validity and reliability; thus, researchers use several methods to enhance the reliability and credibility of their work (Cresswell and Miller, 2000). Several mechanisms such as triangulation, researcher reflexivity and peer debriefing can be applied. In triangulation data collected from multiple sources will be compared to ensure the same strain of information is generated, and the researcher will provide a personal perspective at the end of it to further solidify the information or contrast. Under the thick description, the researcher will add the quotes of the interviewees under each theme to aid the knowledge generated. And researchers can further achieve validity by sharing the raw contents for peer review to have a different eye on the text. At least two debriefers with a knowledge of qualitative research shall review the contents to provide input.

The data reliability will be tested on three accounts: 1) to evaluate if the data has a logical and sensible support to the findings 2) to evaluate if the data is accurate and valid and 3) Inter-coder reliability will be checked to verify the validity. For data validity we will examine if the data in actual represents what we want to measure. This way we can ensure to a certain degree both the internal and external validity of the research method; Stake provides a “Critique checklist (Stake, 1995, p.131) which will be considered in ensuring the reliability and validity of the research.

### **1.13 POTENTIAL CHALLENGES**

Accessibility: The degree to which the research questions can be explored depends highly on the availability of the related information from interviewers, journals and published articles, speeches, and public statements on transboundary waters in the regions. Accessibility will also depend on the objectives, scope, and purpose of the research (Saunders et al, 2007). Most countries do not make the water related documents available to the public as most of that documentation is kept highly classified. There is the possibility of overload on intertwined issues that have the potential to distract the attention from the real research topic. Furthermore, abstraction of content from text can create a situation where words can get interpreted in certain ways that are not reflective of the true intentions of the speakers. There is also the danger of overlooking key messages which are present in the text and omitting some essential information which needs to be included.

Quality: Since TBW interaction is a sensitive issue for many states, it is predictable that interviewers (representing governments) do not reveal all the information associated with the negotiation process or factors affecting TBW interaction. In terms of official statements, some texts may be available in full while others may be only partly presented. This may be due to news agencies only broadcasting a statement from the entire speech. There is also the tendency of exaggeration or underrepresentation by the media outlets with the tendency to bias the news, which will be considered.

#### **1.14 ETHICAL CONSIDERATIONS**

This research is to evaluate the role of power in shaping the environment for cooperation and conflict between weaker and stronger riparian states and I will be the sole researcher to identify and select the text from the data. Since I am also a party with a stake in the topic, therefore, I shall be highly aware of my own biases and treat the data as objectively as possible. Furthermore, I will ensure the integrity of my research by sharing the results with a few leading experts on TBW on this specific region to highlight any major issues pertaining to the contents and information that went unobserved. During the interviews, all the participants will be treated in accordance with the ethical guidelines of the American Psychological Association (APA) and the University of Nebraska Institutional Review Board (IRB). Although the risks associated with this kind of research are minimal, I will be carefully designing my interview sessions with the participants to avoid any kind of unnecessary tensions. I will be highly aware and cautious of TBW officials in countries who would not be comfortable disclosing classified information about water governance with riparian state. In addition, water interaction between riparian states is considered highly sensitive in some countries with closed system of governance, it is natural to find limited knowledge generated through academia without the influence of government. Therefore, all these considerations will be taken into serious account while reviewing the contents and interviewing the participants. All caution will be taken to ensure that participants feel safe and comfortable and know that they have the freedom to withdraw from the interviews anytime they wish.

#### **1.14.1 RESEARCHER'S POSITIONALITY**

I approach this dissertation with my previous experience. I am an Afghan practitioner who served the foreign service for more than three years. In my role as Director General of Security Cooperation and Border Affairs, at the Ministry of Foreign Affairs, Islamic Republic of Afghanistan. I was constantly involved in negotiating bilateral and multilateral treaties on borders and waters with Afghanistan's regional neighbors. The goal of most of the engagements was to find win-win solutions that can best protect the interests of Afghanistan and neighboring states for better regional cooperation efforts. Transboundary water issues were one of the challenging areas which needed attention from multiple sectors for better coordination and representation of issues at regional and extra-regional forums. I was personally involved in the organization and facilitation of several stakeholders' meetings. This was an opportunity for me to deeply understand the needs, interests, and positions of stakeholders in negotiating water rights. I was practically informed on TBW governance at both the national and regional level. During the time of being in service, I observed the factors that indirectly shape the mode and pace of water relations between states and non-states actors. My interest emerged from that point to learn about cases further deeply around the world which share similarity and entail high levels of power politics. Therefore, in my dissertation stage I decided to further go in-depth on these cases and learn the underlying factors that affect TBW rights of riparian states with weaker power grids.

To the eyes of other researchers, I may stand on a particular side of this research, but I am keenly aware of my biases and will therefore ensure to objectively approach the topic

keeping my notions aside. I want to study this topic with an open mind to be able to contribute toward a credible body of knowledge as TBW interaction is going to be a key regional issue affecting the next generation. My passion for this topic is due to the potential of water as a source of cooperation for regional development and peace. Water can play a critical role in bringing hostile riparian states to cooperate on both water and non-water related issues in regional frameworks. Therefore, I strongly believe that water as a shared resource should be used based on the principles of “equity and fairness” for the welfare of humankind. Therefore, I will approach the topic with keeping my biases aside for the valuable contribution to the scholarship.

### **1.15 CONCLUSION**

Water is a regional security matter, though resolving it requires technical intervention. Currently the matter is highly politicized due to power politics among riparian states. Depoliticization of water problems will allow countries to identify and agree upon practical solutions that require substantial legal and scientific interventions. This research intends to unwrap the sources of power both the weaker and stronger riparian states possess and how water rights of riparian states are affected by exercising of different forms of power. This research will also find the practices and tools adopted by weaker riparian states to safeguard their rights. Cases mentioned above will be thoroughly studied by applying comparative case study methods to seek information that could be utilized for future regional water cooperation purposes.

## **CHAPTER TWO: PART I: AFGHANISTAN AND IRAN'S TRANSBOUNDARY WATER RELATIONS**

### **2.1 INTRODUCTION:**

In this chapter the relations between Afghanistan and its riparian states will be explored. The first case study is Iran Afghanistan relations, the second Afghanistan Pakistan relations and third is Afghanistan and Central Asian Republics. In all these three cases the relations are based on the power-asymmetry and effect of protracted conflicts which has weakened Afghanistan position to negotiate on equal terms with its neighbors. The situation analysis and the interaction between the states focuses more on the post 9/11 international interventions in Afghanistan.

As this is considered the period of reconstruction and development with institutions being revitalized and relationship with neighbors was shaped by new realities. Afghanistan managed to develop its Water and Energy Ministry and has prioritized water development as one of its key policy agenda. Though the tense situation on water interactions remained with Iran as Afghanistan development of water infrastructure was perceived as major threats to the overall waters in Iran. On the other hand, the interaction with Pakistan was less stressful but remained highly under the influence of War on Terror. In case of Afghanistan interactions with the Central Asian Republics the level of interaction was less stressful with no major intensity.

## **2.2 THE AFGHANISTAN CONTEXT AND ROAD FOR DEVELOPMENT:**

Afghanistan stands amongst atrocious and destitute states in terms of food security, according to the 2020 Global Hunger Index, Afghanistan is placed 99th out of 107 countries assessed by this evaluation (GHI, 2021). According to WFP, food insecurity has been largely growing in the past few years. Trends of data track demonstrates that total number of people who relied on emergency food aid steadily grew since 2014 due to drought, flood and prolonged armed conflict and violence. Consecutive years of droughts and floods from 2017 onwards substantially affected food availability in the country, it is estimated that 40 percent of crops are defaected either by seasonal floods or drought which ultimately led to rising food prices (Jamie and Kurtzer, 2021). According to the United Nations refugee agency, UNHCR as of July 2021 approximately 270,000 people are internally displaced due to increasing violence throughout Afghanistan increasing the toll to more than 3.5 million internally displaced people (UN news, 2021).

In the aftermath of 9/11 terrorist attack in the United States<sup>1</sup>, major Mujahadeen fighters from distinct groups unified and fought against the Taliban allied with the U.S coalition led and helped the U.S to remove the Taliban from power. The U.S and its allies supported Afghans northern alliance and the Afghan diaspora to convene the Bonn conference (Vendrall, 2012) in Germany to discuss about post-Taliban scenario and power sharing. Major groups in the conference agreed to support Hamid Karzai a darling to the U.S., a

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<sup>1</sup> The Northern Alliance, officially known as the United Islamic National Front for the Salvation of Afghanistan operated between 1996-2001.

loyalist and ethnic Pashtun to sworn in as the leader of the 6-month-interim administration in Afghanistan. The Taliban were not invited to the Bonn conference, to which from prospective of some commentator, Taliban's exclusion from peace process forced them in exile, most went back to Pakistan, in exile in Pakistan, Taliban reunified themselves to surge and fight against the U.S and its backed government in Afghanistan. Between 2001 to 2020 when the U.S withdrew from Afghanistan, the country made significant progresses in different aspects including state-building, nation-building, governance, socio-economic development, infrastructure, and energy production including hydroelectric and irrigation dams as well as diversification of crops and irrigation systems.

The interim administration organized the Grand Council (Loya Jirga) with influential Afghans, and elders from various parts of the country invited to discuss about a new constitution and political system for Afghanistan.

The Jirga agreed on drafting a new constitution which urged the country to adopt a republic presidential system which was previously changed by the Taliban to Islamic Emirates. A president with two vice presidents were supposed to run the country in accordance with the new constitutions. The new constitution signified Dari and Pashtu as two official languages. After a long time in the history of Afghanistan, people had a chance to elect their president, the first presidential election was organized in 2004. People were so excited, enthusiastic, and hopeful about the future of the country.

More than ten million voters turned in voting stations to cast their votes and exercise their rights after a long time in the history of Afghanistan to choose their leader. President Karzai, the elected president has taken the lead of nation. As part of enhancing political development and promoting inclusive democratic institutions, the country had its first parliamentary election in 2005 after a gap of almost 30 years. With massive financial and technical support of international community, Afghanistan implemented different phases of demobilization, disarmament, and reintegration of former Mujahidin fighters most of whom were integrated into the new Afghan army and police. The international community held donor's conference for Afghanistan in Paris in 2008 and pledged more than 15 billion dollars in aid while President Karzai also expressed his serious intention to curb corruption in the country while he was a big critique to private security company and securitization of development by engaging military in Afghanistan. Afghanistan with the support of the World Bank, IMF, and other major bilateral and multi-lateral donors-initiated series of mega national project. The country's financial and banking system reformed, and the country's economy was formed based on free-market principles. The government with the support of its international partners introduced, printed new bank notes, and transitioned to use Afghan currency in all transactions, people widely used Pakistani Rupee or Iranian Ryal in their businesses during Taliban.

During last two decades, Afghanistan made substantial progresses despite shortfalls and critiques that it could have been better. For instance, students' enrollment for school grew from 900,000 male only students in 2001 to more than 9.5 million students with 39 percent

female in 2020. (USAID, 2021). Afghanistan got isolated during the Taliban regime back in 1990s, in fact only Pakistan, United Arab Emirates and Saudi Arabia recognized Taliban as an official state however, the UN and other countries recognized the government President Burhanudin Rabani which was in exile in Tajikistan. During the last two decades, Afghan government became a UN recognized administration and has expanded its representation and diplomatic relation with most of the countries in all continents.

Track of information about Afghanistan's economy per the World Bank report demonstrates that GDP roughly grew threefold since 2001 and the approximate size of economy reached to about 21 billion in 2020 (Rai, 2021). Because it was a fragile economy with heavy dependence on aid. Private sector went through significant reform though it does not conclude a substantial portion of the total GDP in Afghanistan. Trade and economy were largely oriented toward the communist bloc before 1990s, the centralized Soviet command-economy model was dominant where the government had the big share of pie. Public institutions during the USSR backed government were functional and served public relatively. Civil war and the Taliban's illicit economy which was centered on smuggling goods and drugs totally dysfunctional government system and the economy. Therefore, in the last two decades everything was made from scratches.

In the last two decades agriculture sector as the backbone of Afghanistan's economy has also shown improvements. By 2017 the agriculture sector contributed almost 23 percent to the country's GDP and employed around 61.6 percent of the workforce. Agriculture

machinery became more available to farmers, seeds, and fertilizers access to farmers increased and crops cultivation diversified substantially. Husbandry, gardening, livestock, agriculture products stock availability and quality drastically increased.

Influx of aid ever since 2001 led to rapid economic growth yet widespread corruption at various levels and scale tremendously slowed down growth and increased people's confidence in their leaders and newly introduced system of free market and democracy. Afghanistan retained the record as a widespread corrupt country pervasively evaluated by Transparency International (2020). As earlier mentioned, Afghans bravely showed on voting stations to cast vote in every presidential and parliamentary elections despite of numerous security risks. Civic engagement in election was high while Taliban threatened people to death, they executed people, blown up voting stations, amputated fingers of voter, people still accepted risks and fulfilled their civic responsibilities and obligations.

However, fraudulent elections, delays in announcing election's result and conflict over accepting election's result badly impacted people's confidence on the system and electoral institutions. Afghan army backed by USSR was fully demobilized and military machineries and equipment were either destroyed or smuggled to Pakistan by former Mujahadeen as well as the Taliban. During last two decades, Afghanistan with the support of the United States and other allies reestablished its security forces including police, army and intelligence forces provided with necessary conventional weapons. Afghan forces were trained, equipped, and operationalized throughout the country with the support of the U.S

and allies. It was believed that Afghanistan has a total workforce of Afghan armed forces which reached approximately 300,000. Afghanistan and security sector's donors supported security sector reform extensively (Yassari and Saboori, 2010).

Afghanistan experienced remarkable achievements in health sector as well, life expectancy both for male and female increased, maternal mortality because of giving birth decreased, child mortality and overall health condition, access to health and nutrition improved remarkably with the generous support of international community. Women and youth presence in society have drastically increased, women who could not go out or attend schooling during Taliban, could now elect and be elected, serve in leadership roles, and join services. Young Afghans had more educational opportunities, vocational trainings, and exposure to various parts of the country. Women could serve in justice sector and were exposed to international learning opportunities. An enormous number of Afghan youth attended educational opportunities abroad. As a result of international community's intervention, Afghanistan had a newly emerged bulk of bureaucrats and modern public institutions. Civil Society and media had an active presence throughout the country and provided numerous job opportunities especially for the new generation of Afghans. Public servants in key leadership positions had a background of either working for international organizations or local civil society organizations. Civil society and media played an active role in providing human resources to government while also functioning as an oversight to monitor government accountability.

The U.S and its allies military presence in Afghanistan also contributed to local economic and created many jobs opportunity. Considering huge dollars funds Afghanistan received as aid, yet about 54.5 percent of total population resides below poverty line in 2016. (CIA, 2021). Approximately 70 percent of the total population in Afghanistan lack access to electricity, and 90 percent of them reside in rural area. Afghanistan imports a large part of its electricity needs from neighboring countries including Iran, Turkmenistan, Uzbekistan, and Tajikistan. Afghanistan spent more than 4 billion for electrification, yet the country has a long way to be able to address its needs. (Amin and Bernell, 2018).

Afghanistan also had considerable achievements in generating electricity from its hydroelectric plants and building dams and reservoirs. Below tabulates major reservoirs and dams either built or which are initiate and are under construction in the last two decades, however it is important to note that some of the neighboring countries accuse Afghanistan of continuing expanding its water related projects without discussion with neighboring riparian states. Afghanistan believes that during prolong war in Afghanistan, neighboring riparian states continued developing their cross-border water related infrastructures without notifying Afghanistan while some of those infrastructure impacts Afghanistan. Meanwhile, Afghanistan argues that the country does not have enough appropriate infrastructure that produce proper data to be provided to neighboring riparian states. For Afghanistan to be able to share information, it requires to establish and improve the states of its water related infrastructure.

**Table 1 Note: Information in this table is retrieved from Wikipedia on Sep 29, 2021:**  
[https://en.wikipedia.org/wiki/List\\_of\\_dams\\_and\\_reservoirs\\_in\\_Afghanistan](https://en.wikipedia.org/wiki/List_of_dams_and_reservoirs_in_Afghanistan)

No.	Dam name	River Basin	Location	Purpose	Status
1	Band-e-Amir		Bamyan	Irrigation	Completed
2	Afghan-India Friendship dam (Salma Dam)	Hari River	Herat	Hydroelectricity and irrigation	Completed
3	Kamal Khan Dam	Helmand River	Nimroz	Hydroelectricity and irrigation	Completed
4	Shorabak Dam	Kokcha River	Badakhshan	Hydroelectric	Completed
5	Bakhshabad Dam	Fara river	Farah	Hydroelectricity and irrigation	Under construction
6	Padshan Dam	Heri River	Heart	Hydroelectricity and irrigation	Under construction
7	Sokhtuk Dam	Lazier River	Daykundi	Hydroelectricity and irrigation	Completed
8	Shahtoot Dam	Kabul River	Kabul	Irrigation	Under construction

Additionally, according to Food and Agriculture Organization of the United Nations, about “174 hydrological stations are under installation across Afghanistan, the network of stations will measure rainfall, relative humidity, water level, water quality, temperature and sunshine.”. From Afghanistan’s standpoint such establishments enable Afghanistan to collect more data about water, analyze it and share more meaningful and useful data with neighboring riparian states.

The upstream Afghanistan and its downstream neighbors had limited dialogue to legalize water sharing and water cooperation for several reasons mentioned throughout this study. Afghanistan only has one water-sharing agreement with Iran ratified in 1973 which regulates water sharing on the Helmand River Basin. Afghanistan and Iran have no

territorial disputes and quite often had a friendly relationship however, their water disputes have a prolong history which goes back to 1870s when Afghanistan was under the influence of Britain. Both kingdoms of Iran (King Reza Shah) and Afghanistan (King Zaher Shah) endeavored to sign a water agreement in 1939 which did not end. The second attempts mediated by Washington in 1948 failed as well when the Helmand River Delta Commission recommend a share of twenty-two cubic meters per second to Iran. Yet Iran asked for a larger share of water. To provide such a share of water, the Afghan government asked for greater access to two Iranian ports including Chabahar and Bandar Abbas. Both countries signed an agreement for water sharing indicating that Iran will receive twenty-two cubic meters of water per seconds and can purchase additional four cubic meter per seconds in normal water years (Aman, 2016).

Perspective of commentators varies regarding Afghanistan's interest for dialogue about transboundary water, some believe that Afghanistan had shown less interest to negotiate and dialogue about transboundary water with riparian states however, pursued constructing projects. (Thomas, Azizi and Behzad, 2016). As tabulated above, Afghanistan with the support of donors expanded hydropower projects while it uplifted concerns amongst some of the neighbors which believed these projects will negatively impact them. Some of the donors in Afghanistan also shared the same concern including USAID and the World bank and kept encouraging Afghanistan for dialogue so, Afghanistan could enhance its perspective on cross-border water.

However, it is important to note that not all projects Afghanistan initiated disfavored neighboring riparian states for instance, as Fatema Aman articulates the impact of Kajaki Dam constructed on Helmand River has not been negative to downstream Iran. “It increased water flow to Iran during the dry season but reduced the flood water on which pastoralists depends for fertilization. Yet she notes that the situation could have been different in the absence of 1973 water agreement between Iran and Afghanistan (Aman, 2016). Some researcher pointed out that the government of Afghanistan intentionally avoid starting dialogue with neighboring riparian states and argues that Afghanistan lacks qualified water experts which impacts negotiation’s outcome in the favor of neighboring riparian states. While some believes that Afghanistan does have necessary capacity to actively participate in dialogue. However, in practice Afghanistan prefers to continue implementing its development plans as a late developer and postpone any water sharing related discussions.

### **2.3 IRAN-AFGHANISTAN WATER RELATIONS:**

Iran and Afghanistan share 921 km of border in western Afghanistan. Both countries share common socio-cultural links, including language, food, music, and religious groups. Both countries enjoy cordial relations, as historically there have not been many territorial or other political disputes. From the perspective of many observers including Nader, Scott, Rahmani, Stewart and Mohmand (2014). Iran has certain ambitions in Afghanistan which cannot be considered as hegemonic but interests to protect such as border security, counter narcotics and dealing with influx of Afghan refugees. However, Afghanistan’s and Iran’s transboundary water interaction has become a major conflict in recent history, shaped by

power asymmetry in a complex geo-political context, with varying socio-economic needs and degrading climate factors. Tensions over transboundary water boomed between the two countries and further alarmed Iran when Afghanistan increased harnessing the water from the two basins as part of its post-conflict reconstruction efforts during the past two decades. Afghanistan and Iran share two river basins: Helmand and Harirud-Bala Murghab along the western border of Afghanistan and the southern and southeastern provinces of Iran.

Transboundary water originating from the Hindu Kush Himalayan mountains is a major source of livelihood and economic growth for people living in the southern and southwestern provinces of Afghanistan, and the southern and southeastern parts of Iran. The Hindu Kush Himalayan regions is not important only for Afghanistan but also for 8 other countries where it stretches 3500 kilometers across the region including Afghanistan, Bangladesh, Bhutan, China, India, Nepal, Myanmar, and Pakistan. It's known as "one of the most important world water tower, being the source of ten of Asia's largest rivers as well as the largest volume of ice and snow outside of the Arctic and Antarctica. These rivers provide drinking, irrigation, industry, and sanitation water to nearly 1.3 billion people living in the area." (GRID Arendal, 2022). Below map tabulates how the Hindu Kush stretches across the region.

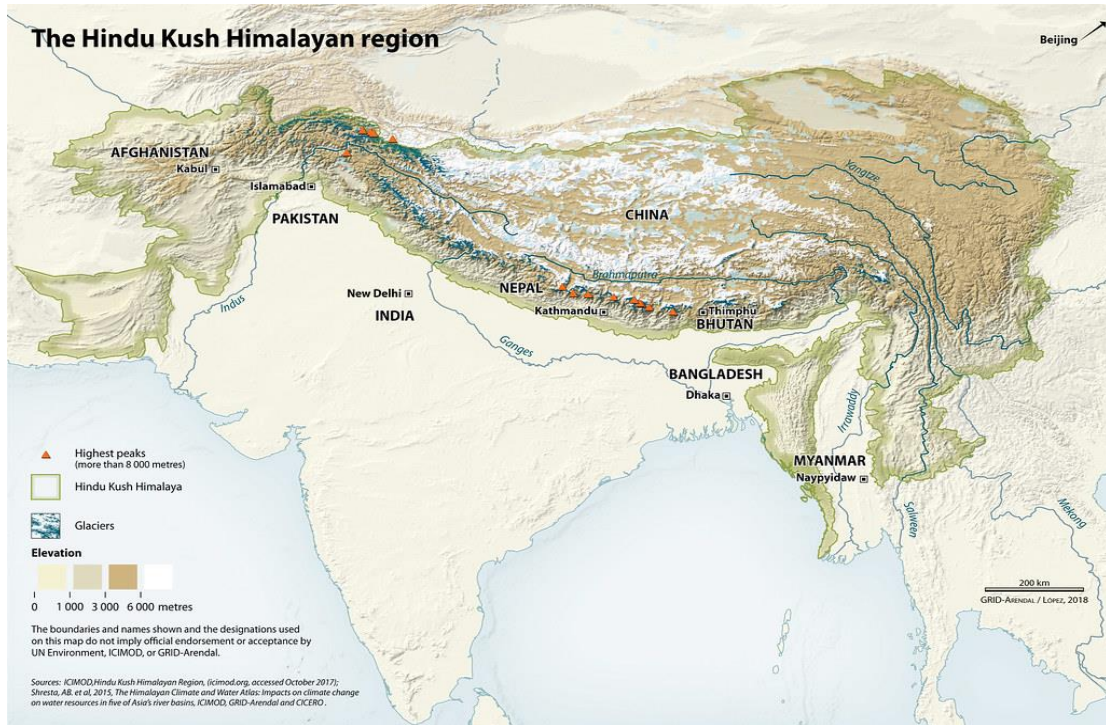


Figure 4: Map of Hindukush-Himalayan region,: <https://www.grida.no/resources/12806>

Water is considered the heart of the Afghan economy as 80 percent of the population is dependent on agriculture as a source of livelihood. For Iran, water remains an integral part of national security considering the recent trend of water shortage. Throughout history, these countries have had several instances of conflict over the shared river basins. In the recent era of the post-conflict reconstruction phase initiated after Taliban rule in 2001, Iran blames Afghanistan for the construction of two hydroelectric dams limiting the flow to the downstream region of Iran. Accordingly, Afghanistan blames Iran for the overutilization of its shared water resources for economic growth without considering the water needs of Afghanistan's poverty alleviation efforts in the post-conflict era.

Afghanistan and Iran share two river basins: Helmand and Harirud-Bala Murghab along the western border of Afghanistan and the southern and southeastern provinces of Iran. Afghanistan and Iran fall under arid and semi-arid regions; these regions form thirty percent of the world's total resources, and access to water remains a fundamental issue (Quraishi, 2002).

Both Countries have a water treaty, which is unacceptable to Iran due to disagreement in interpretation. For measuring the river water flow, Afghanistan and Iran established a Delta Commission in 1950 and as a next step both countries signed Helmand Water Treaty in 1973 which regulates water share between the two countries, it states Iran receives a total of 26 cubic meters of Helmand River water per second or in other words 850 million cubic meters annually (Aman, 2016). Some literature indicates 22 cubic meters per second of water and an option of 4 cubic meter per second to purchase should Iran need it. (Ramachandran, 2022). Incidents as such the 1973 coup in Afghanistan, the Islamic revolution in Iran in 1979, the Soviet invasion of Afghanistan in 1979, civil war in Afghanistan in early 1990s, emergence of the Taliban and the post 9/11 events impacted the implementation of the treaty. Furthermore, both countries have politicized the narrative around water management, leading to a war of words and intense periods of diplomatic tensions.

The situation is further aggravated by climate change, low precipitation rates and consistent periods of drought, leading to drying of the Helmand-Hamoun wetlands in the Sistan-Baluchistan region of Iran. Agriculture sector in Afghanistan is impacted chronically by continuous drought and conflict, according to International Federation of Red Cross

(ICRC), about three million of livestock are at imminent risk because of shortage of water and food. (Batkai, 2020). Afghanistan is facing a situation of sixty percent decline in rainfall in recent years (Tolo News, 2021). On the other hand, regardless of the impact of agriculture on the Hamoun wetland, Iran continued to develop agriculture land and construct water reservoir. Iran complains that Afghanistan does not respect the terms of the agreement for water rights while, Afghan officials indicates that Iran over used water far beyond than what was agreed while Afghanistan participated in conflict. Conversation of this kind continues to happen have barely resulted in a breakthrough. (Aman, 2016).

Iran and the Taliban continues discussing transboundary water. In a recent incident, a mob in Iran attacked Afghan transportation vehicles in border point in protest Afghanistan blocking water flow to Iran (Hein, 2021). Unfortunately, countries pay less attention to environmental factors and water management policies and Iran has continued to blame neighbors for their water development projects. The major challenge for policy makers is to balance human needs for socio-economic development, maintaining ecosystems and ensuring fresh water supply for populations. Therefore, water management in such regions requires a robust conflict resolution mechanism among various needs and interests of stakeholders. These conflicts further escalate if water sources are shared between riparian states separated by political boundaries. In the interview with the Professor of Environment Studies from Kabul University:

“Both countries are facing acute water crises especially across the borderline provinces. Afghanistan western part is suffering heavily from water scarcity. Harirrod is one of the

water basins which is constantly losing its water resources. Iranian has also stopped water inflow to Afghanistan, especially all areas in Ghuraian and other bordering provinces. Even Dasht-e Mashad is also suffering from the scarcity of both surface and ground water.” (Professor Kabul University, 2020)

In terms of water resources development, Afghanistan is regarded as one of the least developed countries in the region. Alternating droughts and floods make stable water supplies difficult. The rate of rainfall and snow is considered sufficient to irrigate vast hectares of land, however, due to inadequate storage capacity, most of the water flows to neighboring countries. Most of the areas are irrigated using centuries-old agricultural mechanisms. Therefore, the ministry of water and irrigation has undertaken the mandate to construct small, medium, and large water reservoirs and dams to ensure better water storage for irrigation. The intervention of further technical and financial support is critical to boosting the agricultural sector.

Yet it is important to consider that inevitable water shortages in the region have still caused major incidents of protests and uproar from the people of the region. As stated in several parts of this study, neighboring countries including Iran equally suffers from deficit of water. Afghanistan as a land-locked country heavily depends on its neighboring countries for accessing to global market. The conditions and dependency to neighboring countries are amongst key factors to put Afghanistan in a weak position in water negotiation. Such a factor eventually led Afghanistan to accept the transboundary water treaty with Iran which

has so far not served the country well. In the interview with the Professor on Environmental Studies from Kabul University:

“There is a misperception that Afghanistan has plentiful waters, whereas, in the Helmand River region, the population is suffering from the lack of water, both for human consumption and irrigation purposes.”

“Afghanistan’s institutions face ‘capacity deficit’, lack of technical water experts and trained diplomats in conducting water negotiations. Additionally, international organizations do not demonstrate a high level of interest in resolving the watershed problems of the region, due to competing geo-political issues and lack of organization mandates.” (Professor Kabul University, 2021).

Below map presents major river watersheds in Afghanistan. Assorted colors demonstrate different river basins.

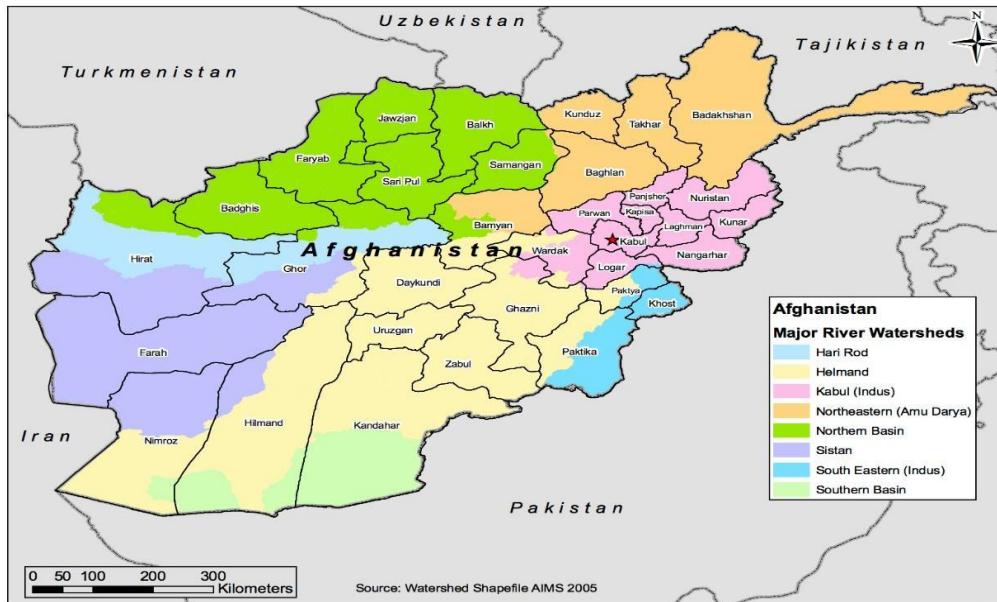


Figure 5: Map of Afghanistan Riversides, collected in December 2020. from: Afghanistan water portal: <https://afghanwaters.net/en/map-afghanistans-major-watersheds/>

### 2.3.1 Afghanistan-Iran Water Conflict Background

The water conflict between both countries over the last two centuries is embedded with elevated levels of mistrust at the state-to-state level. The conflict over waters dates to 1870 when Afghanistan was still under British control (Ahmed, 1980). This situation has called for third party mediation over the course of history. However, most of these interventions failed due to high levels of power-asymmetry, mistrust and competing interests of world powers while supporting the development initiatives.

The government of Afghanistan from (2001-2014) undertook a plan to construct twenty-one dams across the country with the idea to generate electricity, irrigate the fertile lands and control environmental destruction caused by excessive flooding. This development was perceived as a threat to the Afghan riparian states. Iran argued that any development

on the Afghan riverside can cause water shortages in Iran, which they have been using unconditionally during history. According to several media reports and participants' responses to my field research conducted for completing this study. Iran's sabotage of the recent developments in terms of dam construction is an indicator of a high-conflict situation. Iran is believed to support the Taliban in destroying the dams and using threats and intimidation to secure unconditional use of water resources from the Helmand and Harrirud. Iranian forces have even tried to enter Afghanistan to release water into an irrigation canal (Majidyar, 2018 and Mashal 2012).

In 1998 Taliban blocked water flowing to Iran by closing Kajaki water dam, the blockade continued until 2002 and caused one of the worst droughts in the region. It caused a catastrophic impact on ecosystem and human migration. Afghan government in recent years constructed Kamal Khan dam project which from Iran's perspective negatively impact its Eastern provinces Sistan Baluchistan. There have been several occasions where Afghan government arrested Taliban commanders who planned to destroy Kamal Khan dam project as well as Salama dam project in Herat province. Afghan government claimed that Iran trained these Taliban fighters to sabotage water infrastructure projects in Afghanistan (Aman, 2013). A report from the US National Intelligence Council voices that Iran is over dependent on oil and transboundary water, which these factors make the country to become embroiled in conflict with neighboring countries over water deficit.

Both countries blame each other for not upholding the terms agreed upon in the 1973 Helmand Water Treaty. As earlier stated, the Helmand Water Treaty which was signed in 1973 identifies that Iran as a downstream riparian receives a total of twenty-two cubic meters of Helmand river water per second with an option of 4 cubic meter per second to purchase should Iran need more water. Afghanistan argues that Iran has been using more than its allocated share of water—22 cubic meters—and Iran blames Afghanistan for not re-negotiating the treaty for more water allocation to Iran, fearing the future reduction of flow to Iran (Sadat and Sayed, 2020).

In the Harirod-Bala Murghab River region, a lack of treaty creates further suspicions and mistrust. “The Harirud-Murghab river basins represents approximately 12 percent of Afghanistan’s water resources and is centered on the intensely irrigated area of Heart. It rises in the central provinces of Afghanistan and flows west through north-east Iran before exhausting itself in Turkmenistan”.(King and Sturtewagen, 2010). Afghans argue that they are not ready for any negotiation on Harrirud until they have constructed their plans designed before the Soviet Occupation of Afghanistan.

Both countries have also used unilateral resource capture narratives on the verge of construction of the Salma Dam, built on the Harrirud River, and the Kamal Khan, built on the Helmand River. These were also marked as periods of high tension, as both countries exchanged words of war and focused on the use of water unilaterally as their imminent rights. Iranian president Hassan Rohani in an event in 2017 in Tehran mentioned that Afghanistan caused Hamoun lake in Iran to die and negatively impacted Sistan Baluchistan’s agriculture by building Kamal Khan dam project. While the Afghan

president Ashraf Ghani March 24, 2021, insisted that Afghanistan has every right to utilize its water and develop infrastructure and suggest that Iran exchanges oil and gas for water of the Helmand River (Iran International, 2017).

Diversion of water courses is another approach Iran is accused of undertaking. During the Taliban rule of 1996-2000, Iran dredged 30 km of the Helmand River to divert the waters to the storage basins and pump water to other regions. Afghanistan's neighbors have acquired tremendous opportunities to build water infrastructure, hydro-power dams, and irrigation structures. These developments were undertaken without any sort of consultation with Afghanistan (Shruder and Ahmedzai, 2016). This unconditional use of water has spoiled the neighboring riparian's as they continue to develop the mindset of unlimited use of water without any repercussions. According to the interview with the international water expert.

“Iran has taken more than its share of Water from the Helmand River by diversion of water courses to the other provinces such as Zahidaan. This excessive water intake without considering the provisions of the Helmand water treaty shall be recognized and alternative sources of water supply shall be envisaged instead of insisting on unconditional water use” (Water expert, 2021).

The conflict between both the countries tends to escalate during the dry seasonal year, when the water availability is low in the upstream Afghanistan. Therefore, it can be predicted that the future availability is highly dependent on drought seasons, and both

countries will have major changes in water flow. Iran also blames Afghanistan for the drying of Hamoun wetlands, whereas Afghanistan blames Iran for diverting the share of water from Hamoun to artificial reservoirs and further using it for economic growth, investing it in high water crops. This leaves the ecosystem fragile and the population to suffer in the borderline areas of both Afghanistan and Iran.

Iranian President, Hassan Rouhani, in the UN-Backed conference on sand and dust storm held in Tehran on July 3rd, 2020, complained that Afghanistan is building dams on the Harirod and Helmand Rivers, rivers flowing downstream to Iran. He stated, “Building dams without studying environmental aspects is damaging the environment in the region. If Hamoun’s water dries up, Afghanistan will suffer equally like Sistan and Baluchistan” (Deudney, 2017). In response to Rouhani’s statement, Afghanistan senior water officials from the ministry of Energy and Water replied that Iran has built more than thirty dams on the rivers which were flowing to Afghanistan via Harirud. These unapproved unilateral developments have completely blocked water flow to regions bordering Iran, causing massive human migration, and destruction of livelihood and ecosystems in the Hamoun Wetlands.

During the rule of the Taliban between 1995-2001, Iran had faced a situation of water conflict with the Taliban. The Taliban had an antagonistic foreign policy with Iran due to Iran’s Shiite majority population. The bilateral relations between both countries were aggravated when the Taliban closed the Iranian embassy in Mazar-e Sharif and executed the 8 Iranian diplomats. The Taliban closed the sluices at the Kajaki dam from 1998 to 2001, resulting in drought, environmental degradation, and displacement of the Iran

population (Weier, 2002). This period is marked as a highly hostile time between the two riparian states in terms of their water interaction. In 2001, after the Taliban's rule, the administration of Afghanistan opened a new chapter of friendly relations with Iran and released water to Iran via UN intervention. Iran supported the war on terror and established new ties with Kabul based on cooperation.

The countries have cooperated on several instances to rehabilitate the Hamoun Wetlands. The Iranian government has also supported the Ministry of Energy and Water of Iran in establishing a water research department to build the capacity of its Afghan water officials. This institute has conducted several research papers to better understand and analyze the current water interaction between the countries. Furthermore, the institute has also received books and articles on water-related topics. Iran is also helping Afghanistan in water efficiency. However, these efforts are considered minimal when dealing with Iran's words of conflict. The extreme level of mistrust prevents Afghanistan from entering any kind of negotiation process with Iran. The two riparian states need more time to build trust and negotiate over transboundary water in a way that both countries interests are met properly. However, the cooperation on the Chahbahar port is a promising sign for both countries to collaborate on several water and non-water related issues. This situation has attracted international attention as the Chahbahar Port is built in Oman, as a base to transport goods to Afghanistan via the Zabol region of Iran (Hanasz, 2012). This port is the first and only Iranian port with direct access to Indian Ocean. This port is marked as "Golden Gate" to the landlocked countries of Afghanistan, and other Central Asian countries. This port is one of the key projects of the Iran to enhance its role in regional politics by connecting

different countries and ensuring development in the eastern part of Iran which is relatively less developed than western Iran where high segment of its population resides. The port will allow Afghanistan to trade with India by bypassing Pakistan which usually blocks Afghans product due to bilateral political upheavals (Chahbahar Port, 2023). This port carries a great deal of importance as since the inception of planning and designing the project for trade purposes, Afghanistan was presented in the meetings as a country with same level of protocols and respect. Therefore, this was one of the positive cases of reducing power asymmetry while joining efforts for joint developmental projects.

### ***2.3.1 a Helmand-Arghandab Water Basin***

The study of this river is key in understanding the power dynamics between Afghanistan and Iran. The river basin has been the biggest source of tension between the two riparian states. The power asymmetry and lack of legal frameworks have impeded cooperation at various times in history. The Helmand River has provided water for over 5,000 years to both Afghanistan and Iran (Thomas, Azizi, Behzad, 2016). The Helmand River originates in Koh-e Baba heights of the Hindu Kush mountains, about 40 km northwest of Kabul, and runs 1,150 km inside Afghanistan before flowing down to Hamoun Lake in the southeastern Sistan and Baluchistan provinces of Iran. A large portion of the Helmand water is from snowmelt, as there is low precipitation in the lower end of the basin (Goes, Howarth, Wardlaw, Hancock, and Parajuli, 2015). The Helmand River covers forty-three percent of the surface area in Afghanistan. Around ninety percent of the river is in Afghanistan and only ten percent in Iran, with a small portion in Pakistan. The Helmand

River crosses several provinces inside Afghanistan including Kandahar, Helmand and Nimroz. The river shares four tributaries: Arghandab, Terin, Argstan and Tarnak. The median annual water output is 2, 200 million cubic meters; the river flows southwest, passing the provinces of Wardak, Oruzgan, Helmand and Nimruz. The river flows northward, which makes the Afghan Iranian border for 55 km before flowing into the Hamoun in Sistan. The annual water flow is about 9.3 billion cubic meters. The Helmand River is prone to flood because of human activities and climate change, annual flood also causes widening of the river to several kilometers. It is one of the longest rivers in Afghanistan and one of the main sources of irrigation and drinking water.

The Helmand River provides water for over 7 million people in Afghanistan and 400,000 people in Iran. The river draws 12,000 kilometers and drains into the Sistan depression on the Afghan Iranian border. Though the river flows from Afghanistan, most of the irrigation happens in Iran's provinces of Sistan-Baluchistan and Mashad (Hanasz, 2012). Water users in this region need it for domestic consumption, irrigation, the ecosystem in the Hamoun Wetlands and hydroelectric power. More than 93 percent of water use is for irrigation purposes.

Both countries heavily depend on the Helmand water for irrigation using the traditional system along the upper and main Helmand River basin. However, irrigation is more dependent on the seasonal variability of runoff, therefore irrigation is highly dependent on water storage during high flow season (Goes, Howarth, Wardlaw, Hancock, and Parajuli, 2015). Several hydroelectric and irrigation dams have been built on this water basin over the course of the past fifty years, with ninety-five percent of the dam located in the southern

and southwestern provinces of Iran and only five percent inside Afghanistan (Goes, Howarth, Wardlaw, Hancock, and Parajuli, 2015). Iran has also constructed Chahnimeh, an artificial lake to store water during the high flow season, and to use it further during the dry season both for irrigation and supporting the fragile surrounding ecosystem. Both countries share hot weather in summer with an elevated level of seasonal precipitation and huge water unavailability. The Helmand River remains salt free in most of its parts, however in some parts salt build-ups have made it unstable. The chief tributary of the Helmand River is the Arghandab River. This river has been used for irrigation purposes in the regions around Helmand and Arghandab and is managed by the Arghandab water authority.

The Helmand waters are a major source of irrigation for the Southwestern provinces of Afghanistan, but it has an equal share in irrigation of the southeastern Iranian provinces of Sistan and Baluchistan. The annual output of the river has significantly reduced due to evaporation and an alternating pattern of rainfall. The strong deflation caused by 120 days of wind erodes sediments and moves it away. The lowest point of the Helmand River completely dried up after the hard-hitting drought of 2001, creating dust blown south and southeast in the spring and summer months (Weier, 2002).



Figure 6: Map of Helman River, derived from Google Maps in Dec 2020  
[https://en.wikipedia.org/wiki/Sistan\\_Basin](https://en.wikipedia.org/wiki/Sistan_Basin)

### 2.3.1. b. History of Conflict over Helmand River

Afghanistan and Iran's exploitation of water resources shared through the Helmand River remains a critical issue between both countries. Although both countries signed the treaty for water sharing in 1972 but as explained above, conflict remains active. Historically, A water sharing treaty was drafted by the British government in 1870s when Afghanistan was controlled by the British which was never ratified by the Afghan Parliament. The Helmand water conflict was first approached by British arbitration while resolving the border conflict between Iran and Afghanistan. In 1800, Iran claimed that some part of the Sistan territory belonged to Iran. The arbitration included border alignment, which included Helmand water sharing. British drew border lines along the main Helmand River land and prepared another treaty in 1939 which was signed by Mohammad Zahir Shah, king of Afghanistan and Reza Shah Pahlawi king of Iran, however Afghans have not ratified it.

(Aman, 2016). The other arbitration was the Goldsmith Award in 1872, which established the Helmand River as the main border.

The decision was accepted by both parties and disputes were resolved in a timely manner. However, due to the natural change of water courses, the border dispute re-emerged between states. This time, a British arbitrator named MacMahon intervened and established the award, which was rejected by both parties. Subsequently in 1920, both countries approached Turkey as a third-party mediator, considering its impartial role for resolving border and water disputes. Turkey proposed a treaty by adopting the Goldsmith Award of 1872, which defined the water rights of riparian on the lower end of the Helmand River, which was accepted by both riparian states but was not ratified by the parliament in Afghanistan (Aman, 2016, Sayed and Sadat, 2020, abidi, 1977).

In 1948, another commission was established to resolve the dispute under the suggestion of American authorities, called the Helmand River Delta Commission. According to the commission report, the amount of water allocated for Iran was twenty cubic meters per second, which was initially rejected by Iran. Despite hesitation, after several rounds of negotiation, Iran agreed with the condition to be able to purchase the additional four cubic meters per second during the normal season. Subsequently, in the 1970s Afghanistan came up with plans to improve water infrastructure, the Kajaki Dam and irrigation canals on the Helmand rivers. The Afghan government approached the US Embassy for this plan which was supported. Disputes remain frequent in the areas affected by drought. According to the Helmand Water Treaty signed in 1973, Iran is to receive 26 cubic meters per second from the Helmand River in a normal water year. To better manage the bilateral relations on this

Treaty, the Helmand Delta Water Commission was established between both countries (Abidi, 1977; Aman, 2016).

**Table 2:** Chronology of Afghanistan-Transboundary (Helmand River Treaty) water interaction, This table is Retrieved from Shruder and Ahmedzai Book on TBW of Afghanistan, 2016

<b>Date</b>	<b>Agreement</b>	<b>Remarks</b>
Mar. 4, 1857	Treaty between Afghanistan and Persia	All future conflict mediated by the British.
1872	Goldsmith Arbitration	Adjustment of frontiers so that no country could interfere in each other's irrigation plans
1903	MacMahon Commission	To reduce water conflicts by adjustment of the border; both countries agreed
1905	McMahon Award	Allotment of 1/3 of the water flowing from Kamal Khan to Iran, agreed
1931	Afghan Adjustment of McMahon award	Afghanistan adjusted allotment to 50% of water from Kamal Khan for Iran as a sign of good neighborly relations.
1931-39	Failed attempts at international agreement	Iran continues to push for further allocation of water, which has been rejected by Afghanistan
1948	Afghanistan Delegation to Washington, DC	Sought assistance from the United States on Afghanistan's plans to build dams upstream of Kamal Khan; no decision was made due to lack of authority by Iranian delegation
1949	Creation of the neutral technical commission on the Helmand Delta River	Afghanistan Delegation meeting in Washington DC, agreed on establishing a neutral committee for scientific study of waters
1950	Neutral Technical Commission, terms of reference	Both countries agreed on the terms of the commission, but it was never ratified.

1959	Delegation to Washington DC	Completion of Kajaki and Dahla dams, commission revisited in DC, negotiations failed
1973	Sistan Region Draft Agreement	Continued conflict for 10 years, both countries reconvene to draft an agreement on Sistan region; the treaty never ratified; twenty-two m <sup>3</sup> allocation for Iran with additional option of purchasing water
2003-2005	UN Environment Program support	Both countries exchanged views on Sistan environmental disaster.
2010-2013	Afghan Iranian Helmand River commission	Both countries met to discuss but never reached a conclusive solution.

### **2.3.1.c. Helmand Water Treaty**

Currently, the only active treaty between the countries is the Helmand Water Treaty. The share of water is legally articulated in accordance with the 1973 Helmand Water Treaty, allocated by the Helmand River Delta Commission. The commission was formed in 1972 between Iran and Afghanistan; according to the study conducted, the share of Iran is 26 cubic meters per second with an additional 4 cubic meters per second as a good neighborly gesture. Under the normal water year, which is measured at the Dehrawood hydrometric station, upstream from the Helmand River, above the Kajaki Dam, which is four million, five hundred and ninety thousand.

- Afghanistan agrees that it shall take no action to deprive Iran totally or partially of its water right to the water of the Helmand River as fixed and delimited by the provisions of Articles II, III and IV of this Treaty.

- Afghanistan shall retain all rights to the balance of the water of the Helmand River and may make such use or disposition of the water as it chooses (Article 6.).
- Iran shall make no claim to the water of the Helmand River more than the amounts specified in this Treaty, even if additional amounts of water may be available in the Helmand Lower Delta and may be put to a beneficial use by Iran. (Helmand Water Treaty). (Article 5.).

The treaty was not ratified until 1977, as Afghanistan suspected that Iran had ulterior motives. Due to misinterpretation, asymmetrical power relations, three decades of war, and lack of measurement of water flow from Afghanistan to Iran, the treaty is not being implemented properly. Iran continues to overuse the water flowing to its regions and has never duly compensated Afghanistan in accordance with the provisions agreed under the Helmand Treaty (Hansasz, 2012, Sadat and Sayed, 2020). Water officials blame Iran for extracting water falling into the delta through the installation of water pumps diverting water to artificial lakes. This diversion of water has made a significant impact on the overall ecosystem. However, Iran has continuously blamed Afghanistan for the fluctuation in water flow downstream. This argument has been contested by several water experts as there is no measurement station to estimate the amount of water flowing to Iran. According to Senior Water Official, Ministry of Energy and Water, Afghanistan.

“Three decades of conflict (1979-2000) and poor management of water resources, Afghanistan remains the least beneficiary of the Helmand waters. The lowest level of water storage has led the vast hectares of irrigation land to completely vanish. Many farmers have

internally migrated as attaining any livelihood from the Helmand River seems an unrealistic path.” (Senior Afghan water official, 2021).

During years of conflict, Iran continued to build water infrastructure on the lower end of the Helmand River and has stored water in the Chah Nimeh reservoirs (artificially constructed lakes) to store more water from the Helmand River, twice its rights as per Article V of the Helmand Water Treaty. Despite the continuous storage of water in these reservoirs, Iran still fails to meet the needs of its population due to poor management of water resources and ineffective irrigation policies (Sayed and Sadat, 2020), leaving irreversible impact on the environmental fronts. According to Senior Water Official, Ministry of Energy and Water, Afghanistan.

Lack of dependable and up-to date data available on the Afghan side for the water inflow to Iran. Recently the water measurement station was installed in Afghanistan, Dehrawood which many water experts believe will provide accurate data on quality and quantity of water flowing to Iran.” (Senior ministry officials on water issues.).

“The Dehrawaood hydrological station is installed and has collected a few measurements and amounts of the discharge. This is the most important hydrological station established, and two other stations are in Taliban controlled territories in Helmand. One of the major problems is a lack of data on discharge rates from this station. This is the most critical part of the implementation of the treaty. The fear persists that the Taliban could sabotage this station.” (Senior Afghan Official, 2020).

Afghans continue to insist that the Helmand River Treaty is one of the finest treaties in the region, and that all parties should adhere to the terms and conditions outlined without pushing for re-negotiation. They contend that all its measures should be in place to ensure full implementation without any further dues. Iranians, however, believe that this treaty is unacceptable at this time, as their water needs have changed; they say that a negotiated treaty could better ensure their rights in the future, considering that Afghanistan has not yet fully exploited its water resources. For Iran it is a pragmatic approach to secure water rights in the presence of highly asymmetrical power dynamics.

## **2.4. ENVIRONMENTAL DEGRADATION**

### **2.4.1 The Impact in Afghanistan**

Afghanistan's environment is degrading constantly due to floods, avalanches, droughts, and earthquakes, as well as man-made pollution, most notably chemical waste from bombings. Due to years of conflict and destruction of all institutions, the country is lacking in plans for early warning systems, early preparedness, management, and prevention of human suffering at the hands of these natural calamities. The environment across Helmand and Harrirud is facing extremely harsh periods due to seasonal floods and persistent periods of drought. As most of the water flows of both the Helmand and Harirod are the result of the glaciers melting, spring is the most risk-prone season for flooding in the southern and western provinces of Afghanistan: Herat, Badghis, Nimroz and Helmand.

On the other hand, the country is prone to drought every ten to eleven years, leading to thousands of internally displaced people in Nimruz and Badghis, often seeking refuge in

Herat. In recent years, there has been a sixty percent decrease in total annual rainfall in Afghanistan, leading to a reduction in water availability (Tolo news/2021). The unplanned irrigation systems, the overexploitation of surface and ground waters, and the contamination of water by open sewage and waste dumps has further compromised water resources. Years of conflict have caused widespread environmental devastation in the wetland areas, most of which are in Helmand and Harrirud, downstream from the delta regions bordering Iran.

The ecosystem and wildlife have been severely disrupted—nearly eliminated in some areas—due to dust storms causing further drought, health issues and the displacement of communities. Afghanistan has not been able to regulate its waters to prevent the detrimental impact of floods and droughts, due to the complete collapse of government systems. During the years of conflict and recovery, the approach to drought and flood response has been to provide emergency humanitarian assistance, but the government is lacking an integrated management approach. Both the environmental degradation and the lack of government prevention and response to such emergencies have placed further burdens on the people of Afghanistan. Despite being rich in water production, Afghanistan has been unable to fully utilize its water resources, only 4 main dams have been constructed to provide electricity and water for livelihoods. Sedimentation and lack of maintenance have been the major issues in keeping the dams from their full potential (UNEP, 2006).

#### **2.4.2 The Impact in Iran**

Iran is also facing significant shortages in water due to constant depletion of both surface and ground waters. Iran has also overexploited its underground waters, which, according to the traditional system of Qanat, was distributed for irrigation and human consumption purposes. Water pumps have been aggressively installed to extract ground water, which has left a harsh impact on the level of water availability.

This situation has created a great level of land subsidence inside the country and has further embroiled conflict, both nationally within different regions also internationally with countries sharing transboundary waters. Furthermore, the reforms presented by policy makers have further allowed the devastation of natural water resources by increasing the number of stakeholders, especially in the Helmand Water Basin. The gradual deterioration of water resources can be partially attributed to the lack of institutional regulation mechanisms and economic incentives for cooperation among several stakeholders (Madani, 2014). The countries' leaders continue to blame neighboring states for the environmental degradation, without taking into consideration the water policies and the corruption within the system.

This Helmand River commission is composed of three engineers from disinterested countries and three from Afghanistan. They shall not represent their countries but stay professional and impartial. The commission's main functions are divided into data collection and analysis, past and present uses of the river water, any information on diversion of the river, plans for the new installations, and any new scientific methods introduced. The commission shall also study new reports and allocate a share of water to Iran).

#### ***2.4.2.a. The Degradation of Hamoun Wetlands***

There are four lakes of the Hamoun Wetlands: Hamoun-e Sabri, Hamoun-e Helmand, Hamoun-e Puzak and Hamoun Shapuri (Godzera). These lakes are the result of glaciers melting in the mountains of Hindu Kush. The Hamouns are divided between Afghanistan and Iran political boundaries which tends to complicate their management. The major source of water originates from Afghanistan, almost ninety percent, and then flows into the Hamouns, surrounded by deserts in Iran. For the last five millennia, these lakes have been the major source of livelihood for the surrounding populations and have formed an active ecosystem. One of the major sources of predicted conflict over the Helmand River and the Harrirud is the changing climate causing the Hamouns to vanish. It is expected that climate change can alter patterns of water flow and availability in the river basins; the extent to which the climate will have its impact is still hard to measure. However, the fast pace of glaciers melting, the increase in the precipitation rate, and the decrease in rainfall may cause further stress on several parts of that region (Dehgan et al., 2014; McSweeney et al., 2010).

The extreme droughts affecting the areas from 1999-2001 completely distorted the water flow pattern, and further scientific studies indicated that the low precipitation rate has significantly reduced snow cover in the Helmand Basin. As a result, most of the Hamouns dried up, and the population sought refuge in other places while in search of water. This devastating pattern of drought has ultimately changed the entire outlook of the region. The towns vanished, the wildlife ended, and agriculture disappeared, changing the once-fertile

land to a wasteland. Iran constantly blames Afghanistan for the drying up of the Hamouns, or artificial lakes, on the southern and southeastern parts of Iran.

The Afghan side argues that Iran makes unreasonable demands, considering the protection of the environment in the Hamouns. Authorities have continued to accuse Iran of illegally siphoning water from Afghanistan through the installation of heavy-duty water pumps in the Helmand lower delta region, and in the Harrirud and Fararod Rivers flowing into Iran. Iran draws millions of cubic meters of water by digging deep wells and reservoirs. There are currently five deep wells equivalent to the size of lakes, which store millions of cubic meters of water annually (Sadat and Sayed, 2020). Senior water official, 2020 in the interview mentioned that Iran grows crops that are not water efficient and if it continues the same trend without using any technology the water resources will continue to shrink. According to a senior water expert “These reservoirs are connected to the pipelines that provide water to agricultural land in Mashad and Zahidan. There are hundreds of hectares of land in Mashad where watermelons and other water-intensive crops are cultivated. These crops are considered extremely unreasonable considering the water scarcity in the region.” (Senior Water Expert, 2020).

#### ***2.4.2. b. Lake Hamoun Helmand***

Lake Hamoun Helmand is a 2,000 km wetland on the Iran-Afghan border in southeast Iran—the Sistan region. It is also known as Hamoun Hirmand, Hamoun Hirmand and Lake Sistan. This lake is in Iran and stretches up to 12,950 km<sup>2</sup>. This lake gathers its waters from the Helmand River, the Farah River, and others, and it reaches its maximum capacity

in the late spring. This lake has sustained for five millennia and withstood several religious and political upheavals, as well as environmental hardships. This lake was considered the most important food region for Central Asia for almost 4,000 years. It was home to enormous ecological diversity, with more than one hundred fifty species of birds that would fly from Russia to seek refuge.

The lake was a source of livelihood for the dwellers, with more than one hundred forty species of fish. The lake used to produce 3,500 metric tons of fish and was also the major source of water for 1.7 million livestock and the people living in the area. However, due to a constant increase in population, modern technology, agricultural overproduction, and the construction of dams and diversion of tributaries, the entire lake has vanished in a matter of a few decades. Furthermore, the hard-hitting floods from 1999-2001 greatly affected the water availability of the lake. Constant fluctuation in the precipitation rate on Hindu Kush continues to bring extreme periods of flood and drought. Precipitation rates continue to melt the glaciers more quickly, leaving the upper stream flooded. The Helmand River experienced the disappearance of glaciers between 1988 and 2000 at a faster rate than it had historically known, reported to be 41,000 km<sup>2</sup> to 26,000 km<sup>2</sup>. This has caused significant displacement of Afghans and Iranians living across the river (Weier, 2002, Partov, 1988).



**Figure 7: Photos of Hamoun Lake before and after environmental degradation, derived from Mehr news.**

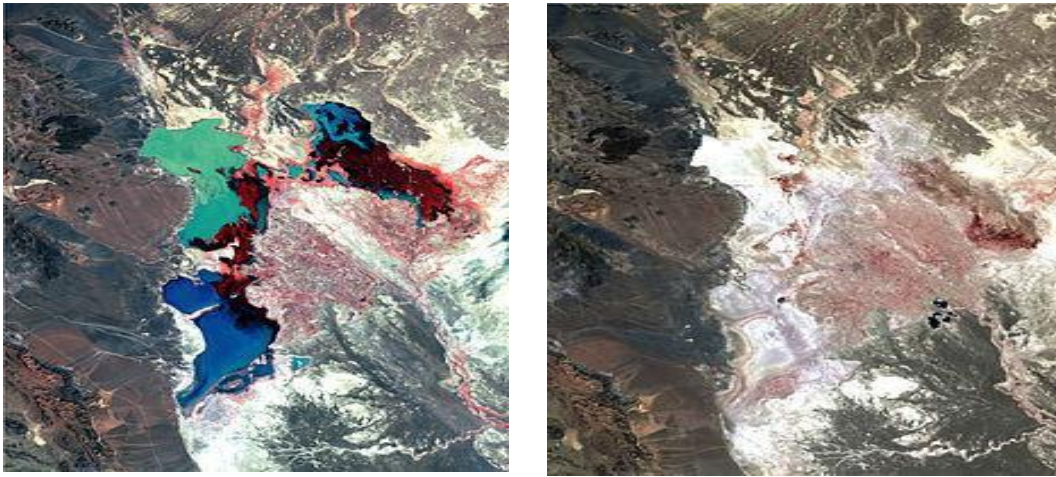
**in Dec 2020:** <https://en.mehrnews.com/news/104821/Dept-of-Environment-to-revive-Hamoun-Lake>

The sand flowing onto the villages has further deteriorated the overall health conditions of the dwellers. People have been displaced and villages have been deserted. The level of sand blown over agricultural land continues to devastate the agricultural sector, making it difficult for the farmers to sustain their livelihoods. According to the UNDP, this region is marked as a human-made disaster area with wetlands rapidly changed to wastelands. However, it is hard to determine whether the Hamoun disasters are more due to climate change or to agricultural expansion (Lewis, 2014). The hard-hitting drought, harsh water policies and over-cultivation in the area are considered the major causes of its devastation. According to Partav (2003) seventy percent of water flowing into the lake was being siphoned by Iran. The 4,000 km<sup>2</sup> lake has been completely wiped out, with patches of reed stands and salt flats here and there. There are only a few water reservoirs standing to fulfill the water needs of the region. International water expert mentioned in the interview:

“This lake is the major source of conflict between Afghanistan and Iran. Iran continues to blame Afghanistan for choking off the water sources through construction and revitalization of dams, whereas Afghans argue the mismanagement of water and diversion, Chah Nimaha of water to five deep wells by Iran.” (International water expert, 2021).

#### ***2.4.2. c. The Hamoun Saberi***

The Hamoun Saberi is divided between Afghanistan and Iran. The major source of water inflow to Hamoun Saberi comes from the Adraskan River of Herat and the Farah River. Another source is the northern branch of the Sistan river. Water continues to overflow from Hamoun Puzak to Hamoun Saberi during the spring peak season. The quality, color, and water pattern of Hamoun Saberi is different from the other two. This Hamoun is 1,162 km<sup>2</sup> and the water does not shrink or overflow during the peak and low-water seasons. The only time the Hamoun had an inflow of water was in 2002 when twenty-five percent of the Hamoun filled. Water policies need to be revisited in this region, as the conflicting demand between agriculture and environmental protection remains unresolved (Lewis, 2014).



2001, hard-hit drought period

**Figure 8: Photos of Hamoun lakes in Iran drying, retrieved from Ramsar site, 1976, in December 2020, [https://www.wikiwand.com/en/Hamoun\\_lake#Media/File:Hamoun\\_lake.jpg sides](https://www.wikiwand.com/en/Hamoun_lake#Media/File:Hamoun_lake.jpg_sides).**

### 2.4.3 Challenges of Managing Wetlands

The artificial lakes are the real cause of problems between countries. These are the storage reservoirs constructed in downstream Helmand where the Sistan river separates from the Parian River. These are three natural lakes, and the fourth one is an artificial lake with the capacity to store 1,530 million m<sup>3</sup>(UNEP, 2006). These Chahnimehs are connected via canals, providing the major sources of water for consumption and agriculture. The wetlands systems in this region are highly affected by the storms, affecting the vegetation, health, and environment. This phenomenon is called Bad Hai 120 Roza—120 days of wind—between May and August (UNEP, 2006). During recent years, due to climate factors, water management between different sectors remains a highly challenging area. Water use between agriculture and environmental sustainability has not been critically analyzed. The

agricultural pattern in this area is not aligned to ensure optimal use of water. Most of the crops' cultivation in the area is water intensive.

#### **2.4.4 : Iran Reckless water policies**

Iran is at a state of paranoia for losing its water resources and continue to blame neighboring states for its unsustainable water policies. Especially with Afghanistan as Afghanistan is a weaker riparian with unequal sources of economic, political, and military powers. Iran has depleted most of its surface and groundwater reservoirs due to poor water management policies. Subsidized agriculture allows farmers to extract unlimited underground water through installation of water pumps. Forty years ago, the water per capita was about 8,600 cubic meters per person, while the amount has dropped to 2,200 cubic meters today (Madani, 2014, Thomas, Aziz and Behzad, 2016). Iranian officials blame neighboring countries, sanctions, and environmental issues for their water scarcity problem, but, for water experts, there are three main reasons underlying the water crisis in Iran: population growth and poor distribution, poor agricultural policies, and overambitious development plans.

Iran has also tapped its groundwater resources, which are some of the most plentiful sources of freshwater. Groundwater is in many ways superior to surface water; it is better protected against pollution, less subject to seasonal fluctuations, and is uniformly spread over substantial portions of land (Groundwater, n/a). Groundwater is widely used for irrigation in arid and semi-arid countries. Climate change and reckless human activities can alter the pattern of precipitation, runoff and evapotranspiration that can ultimately result in depleting groundwater and surface water. In Iran, hydrological changes are not limited to

surface water; groundwater has also depleted in several parts of the country. The response to this situation is not to reflect inward to introduce new technology, reform state water policies, and stop relying on water non-efficient crop production, but to pressurize the riparian states to halt their water development agenda. This unilateral approach has been the key cause of further depletion of water resources.

## **2.5 HARRIRUD-BALA MURGHAB RIVER**

This river is another source of conflict between Afghanistan and Iran. The Afghanistan government with the support of India completed one of the major dams, Bande-dosti, friendship Dam. The Harirud River begins in the mountains of central Afghanistan and flows down to Iran, flowing 1,100 km to Turkmenistan and then disappearing into the Kara-kum desert. It covers a total of eighteen percent of the surface area. The length of the river is 880 km, and the total drainage area is 39,300 km<sup>3</sup>. The Gulron river, Khash River and Kuhsan River join the Harrirud River in Turkmenistan. It is estimated that around five million people live in the basin. This river is an important source of livelihood for people living in the Herat province of Afghanistan and has shaped a major transboundary interaction between Afghanistan, Iran, and Turkmenistan.

Afghanistan uses only a limited amount of water from the Bala Murghab River. The major tributaries are the Lahal River, Sar Jungul River, Karoch River and the Afghan River. This river is a seasonal one which flows from spring to mid-summer. For most of the year, the water is not sufficient to meet the drinking and irrigation needs of the population. The annual water availability of the Harrirud River is 1,600 million cubic meters of which 1,070 mcm flows to the Iranian border. Afghanistan uses a minimal amount of this water, and

there is a high level of asymmetry in water usage among the riparian states (Nagheeby and Warner, 2018, Mahmoodi, 2010).

Iran is concerned about the construction of dams upstream and continues to halt the dam construction and water development initiatives upstream, to ensure water flows to northeast Iran, where 3.4 million Iranians live. Several attempts by the armed groups to target the water officials have been reported, which are perceived as efforts to sabotage water development efforts in Afghanistan (Houck, 2011, Mashal 2012, Peterson, 2013).

The Iran-Turkmenistan Friendship Dam is built on the Harrirud River; the dam was completed in 2004 and officially opened in 2005. The dam provides drinking water and irrigation for the surrounding areas, as well as hydroelectric power. Afghanistan was never notified about the construction of this dam as a riparian to Harirud. Both Iran and Turkmenistan continue to build irrigation canals to expand their areas and provide water to their surrounding regions. Iran has also installed water pipelines of around 150 km on the Harrirud River to divert water to the city of Mashad, which meets only fifty percent of its water demand.

However, when the Salma Dam was completed on the Harirud, Turkmenistan also raised concerns about the potential flow to Iran. There are contradictory notions among scholars about the impact of flow to Iran, while some argue it could lead to a seventy-three percent decline, others argue that Iran is inflating these numbers, considering the Salma Dam initiation before the war.

No determination of future use of water on the Harrirud is conducted, but the pace of population growth in both Herat and on the Iranian side is predicted to create some major

transboundary problems. Afghanistan's construction of the Salma Dam is perceived as a security threat to Iran. On the other hand, Iran and Turkmenistan have continued to divert water courses from the Harrirud and make reservoirs to store water.

Afghanistan perceives this unilateral water development scenario as a violation of the transboundary agreement, which Iran has never acknowledged. Afghanistan has always complained that Iran has failed to consult them on these developments and has completely ignored Afghanistan as an upstream country. Furthermore, Afghan officials from the MEW have mentioned that Iran's diversion of watercourses is against the historical rights of the country. Iran on several occasions has made it clear that they see the use of water from the Harrirud as a matter of entitlement via historical precedent. According to an Afghan water expert

“The riparian can have the historical rights without changing the course of the river and diverting and storing its water unilaterally. Over the last twenty years, only two dams have been built on the Harrirud and Helmand Rivers. Salma Dam was a project initiated before the years of conflict in Afghanistan, but Kamal Khan is a new dam. Therefore, the volume of narrative building around construction of dams in Afghanistan does not tally the reality on the ground.” (Afghan water expert, 2021).

Recent years of water interaction among Iran, Afghanistan and Turkmenistan reveals a case of highly asymmetrical power relations and interdependence of socio-economic factors operating within an unstable geopolitical environment. Institutionally, there is no legal framework among the countries guiding the water rights of each riparian state. Iran and Turkmenistan however share a bilateral water treaty because of the Russo-Persian Treaty

of Friendship in 1921. Russia and Iran also conducted a joint feasibility study on the construction of dams on the border area without the inclusion of Afghanistan in the negotiation process.

On the other hand, Afghanistan with the support of the World Bank and the FAO, conducted a feasibility study for the Salma Dam which was conducted by Indian and British engineers. Unfortunately, due the invasion of Afghanistan by the USSR, the project failed to materialize. Iran and Turkmenistan restarted negotiations in 1991 for the construction of the Doosti Dam. After the feasibility study was completed in 2000, the construction of the dam started. Afghanistan has never gotten a response from Iran or Turkmenistan regarding its grievances over exclusion from the initiation of waterway management infrastructure in the area. In 2004, the dam was launched a year earlier than planned, to avoid any kind of notification or further action from Afghanistan concerning water rights. When construction of the Salma dam began, Afghanistan argued that the Salam Dam was planned before war, and that Iran has no right to protest, considering the course of action it took while building the Doosti Dam (Nagheeby and Warner, 2018).

An Afghan water expert says, “Iran cannot blame Afghanistan for the construction of the Salma Dam without taking into account the needs of Iran, as Iran has adopted the same approach by the construction of the Doosti Dam.” (Afghan water expert. 2021).

### **2.5.1 Salma Dam**

The biggest point of contention between Iran and Afghanistan is the Salma Dam project. It is a hydroelectric power and irrigation project located in western Afghanistan, on the Harirod River, in the district of Chesht-e-Sharif. The dam currently generates forty-two

megawatts of power and meets the current electricity need of the Afghan province of Herat and its adjacent provinces; it could provide irrigation to 75,000 hectares of farmland (Fahim, 2016). This dam is 50 km away from the residential areas and is connected via a 150 km dirt road to Herat. The reservoir capacity is 633 million cubic meters, with a catchment area of 11,700 square kilometers. Its height is 104.3 meters, and its length is 540 meters. Construction of the Salma Dam began in 1976 following a trip to Iran by the Prime Minister of Afghanistan, Musa Shafiq. The construction, however, was brought to a halt after the Soviet Invasion of Afghanistan in 1979. India's Ministry of Water Resources commissioned Water and Power Consultancy Services (WAPCOS) initially. India started to revive the construction of the dam in 1988, but the plan did not materialize due to the civil wars in Afghanistan.

After the fall of the Taliban in 2001, the new Afghan government placed the project as a priority. In 2006, India committed and resumed work to complete the project within four years with an estimated cost of \$85 million (Ramachandran, 2016). The rough terrain and highly volatile security situation were considered major threats in initiating the project. Despite the daunting situation, 1,500 construction professionals, engineers, and local police stayed onsite for years to complete the task. This was considered one of the bravest and boldest development projects by India. This is considered one of the most expensive regional development projects initiated by India, costing 273 million dollars. The project took more than its estimated time to complete due to constant security and technical challenges. It was initially planned to be completed in four years but took almost ten years to finish and hand it over to the Afghan government. (Omar, 2021).

This project has met with several challenges, including constant security threats against the engineers and water officials. In 2010, the district manager of Chesht-e-Sharif was assassinated by the Taliban, and several other attacks were launched against the Afghan and Indian Engineers; this resulted in Indian engineers and technicians reaching the site through helicopters arranged by the Afghan government. Furthermore, several intelligence reports indicated that the Taliban also planned to destroy the dam using 1,300 kg of explosives. This dam has many enemies, as Iran and Turkmenistan will experience reduced water flow into their territories once the Salma Dam project is completed. Afghan officials have repeatedly blamed Iran for funding local Taliban to attack the Salma project in a bid to stop the project from completion (Mashal, 2016). However, Afghanistan's position has been that Iran's right to Harrirud waters has not been yet determined. Therefore, Iran's right to protest construction of the Salma Dam is not considered a valid argument by the Afghan side. In addition, Iran has constantly built massive industrial and agricultural infrastructure on their side, benefiting from the war in Afghanistan, without taking into consideration the post-conflict reconstruction water needs of Afghanistan (Fahim, 2016). Iran on several occasions has proposed the possibility of negotiation on the waters of the Harrirud. However, Afghanistan rejected those requests due to the fear of losing water rights because of fear and intimidation, high power asymmetry and lack of data to determine the future water needs from the Harrirud. In 2017, water security issues were mentioned under a Comprehensive Strategic Partnership document, which was perceived as a sign of coerced cooperation among Afghan officials. Afghanistan contends that it has lost considerable time in completing these projects due to three decades of violent conflicts,

so it is better to accomplish the projects which were designed prior to wartime than it is to enter any kind of negotiation on the Harrirud's waters. Iran has been less than understanding of this viewpoint.

An Afghan diplomate indicated that "Iran does not believe in cooperation; they just try to coerce cooperation knowing that under the current circumstances, along with Turkmenistan, they have more power to win the lion's share of water by depoliticizing the water interaction; the only intention is to ensure that they continue to receive the amount of water they have been without considering the needs of Afghanistan."(Afghan diplomate, 2020).

### **2.5.1 Kamal Khan**

Kamal Khan is another major hydroelectric and irrigation dam with the capacity to irrigate 175,000 hectares of Nimruz agricultural land, and to generate nine gigawatts of electricity for the province. This project is located on the Helmand River in Nimruz Province in southwestern Afghanistan. The reservoir has the capacity to store fifty-two million cubic meters of freshwater resources. The construction of this dam took place in 1974 but was halted due to the revolution in 1978 when Americans abandoned the project due to social unrest. Inconsistent construction efforts took place in 2011. The remaining construction of the dam began in April 2017 and was completed in March 2021. The total cost of this dam is estimated to be between 78 and 85 million dollars, provided by the Afghan government's water development scheme.

Kamal Khan is considered a major contributor to the development of Nimruz Province. Nimruz is one of the least developed provinces in south-west of Afghanistan, receiving little attention both from the Afghan Central government and from international aid. Smuggling is a major source of income for the province, and the Taliban continue to launch attacks against government establishment (Houck, 2021). The province has been affected by drought for the last fourteen years. It is primarily composed of the Baluch ethnic group and is very much under the political and economic influence of neighboring Iran.

In the aftermath of the completion of Kamal Khan, Iranian senior politicians and leaders have continued to criticize its construction. Mohammad Jawad Zarif, the foreign Minister of Islamic Republic of Iran, in his speech in parliament, raised his objection against the completion of Kamal Khan, blaming it for reduced water flow to the Balochistan-Sistan region. He emphasized the Comprehensive Joint Cooperative agreement signed between President Hamid Karzai and Hassan Rouhani, the Supreme Leader of Iran. However, water officials in Afghanistan contradicted his statement and reaffirmed that Kamal Khan will only prevent damage caused by flooding and will have no effect on water flow to the Iranian side. This dam will provide an opportunity for Afghanistan to better manage its water resources for the overall good of its people (Aman, 2016).

According to an Afghan diplomate “Iran is paranoid of the construction of this dam, as the water reservoir has the storage capacity of fifty-two cubic meters of water, which was unconditionally flowing through the Helmand River, ending in the Helmand delta. This will stop further draining of the water to downstream Iran, which it has been using for years. It is the realization of 54 years of dreaming for residents of Nimruz Province. This

dam will produce electricity and will contribute towards the creation of jobs and economic prosperity.” (Afghan diplomate. 2021).

The government of Afghanistan deployed four hundred battalions of police to patrol the area and diffuse guerrilla attacks. Iranians have expressed their concerns on several platforms regarding the effect of this dam on the water flow to downstream wetlands.



**Figure 9: Photos of Salma Dam, derived in Dec 2020 from <https://www.ndtv.com/world-news/afghan-forces-stop-taliban-attack-on-india-built-salma-dam-2502392>**

Afghan authorities claim that Afghanistan has never stopped or controlled water flow to Iran, but Iran shall refrain from excess siphoning of water to its reservoirs. This is against the international law of river flow. According to the international water law, Afghanistan has the right to manage its water resources without causing significant harm to downstream

riparian. However, excessive extraction of water resources in Iran requires further attention.

## **2.6 LACK OF COOPERATION BETWEEN AFGHANISTAN AND IRAN**

Afghanistan's water diplomacy can be divided into two phases since the intervention of the US in Afghanistan in 2001.

Silent diplomacy, followed by President Hamid Karzai's administration, 2001-2014

Active diplomacy, followed by President Ashraf Ghani's administration, 2014-2022

During the interim administration led by Hamid Karzai, the ministry of Energy and Water of Afghanistan was established in Dec 2004. The ministry had the urgent mandate to supply energy to the population in eight major provincial capitals, with the financial and technical support of Iran, India, and Pakistan. In terms of transboundary waters, the country had serious brain-drain, which left the ministry completely depleted of qualified human resources. The existing cadre were the engineers and hydraulic techs who were either on the verge of retirement or had no knowledge of the current trends of water diplomacy and cooperation. Furthermore, vast differences in the salary scale of government vs international organizations created a huge challenge for the ministry to hire people with relevant skill sets.

The situation was further compounded by the lack of academic programs in universities and research institutes on topics such as water management and cooperation. To recruit young employees, the international organizations created capacity-building workshops and seminars outside of the country, which was the only measure in place to avoid staff turnover. The ministry made minimal progress in improving transboundary water

management. International organizations such as the World Bank, ADB, UNDP, FAO and several other research institutes began to outsource the major feasibility studies and research to private firms and consultants to bridge the gaps in the development of the water sector. However, due to volatile security conditions in much of Afghanistan, some reputable firms refrained from taking part in bidding on contracts.

Afghanistan produced the country's first transboundary water policy with the help of the World Bank and organized several meetings with Iranian senior government officials to create cooperation around transboundary waters. However, the bilateral meetings were halted due to the Iranian officials' use of intimidation and threats in both bilateral meetings and public speeches. During the administration of Hamid Karzai, there was a marked lack of technical knowledge and skills, an absence of institutions emerging from the ashes of war, and a fear of succumbing to the demands of other riparian states.

Iran continued to support the new Afghan government extending trade, which doubled during this period. Afghanistan continued to import around eighty to ninety percent of its products from Iran. Iran and Afghanistan also planned to build a railroad connection between Herat, Mashhad, Tehran, and Kabul (Abdullah, 2009). Under President Ashraf Ghani, the National Security Council established an interagency cooperation body with the mandate of following the transboundary water diplomacy agreements with the neighboring countries, especially Iran. The administration also initiated discussions around the transboundary water cooperation mechanisms but soon stopped due to false claims made by Iranian officials in their public statements. During the Afghanistan Unity Government,

clandestine meetings took place without the knowledge of the Ministry of Energy and Water.

Lack of technical input and the highly politicized nature of this document has made it extremely controversial among Afghan water and environmental experts. Iran has been pursuing fulfillment of its water needs through neighbors by presenting water trade as a strategy, following as an instrumental-diplomatic approach. This kind of diplomatic approach usually surpasses the international norms and legal framework guiding water relations. Iran has been actively following this instrumental-economic approach to ensure the water flow to its territory by offering options of trade in oil for water. This approach has been widely discussed among various policy circles in Iran and, considering the impracticality of this option, the idea was basically withdrawn as a result.

Iran has drafted a strategic partnership document in which the four classical forms of power—political, economic, social, and military—have been wisely crafted to exert pressure against the conflict-affected Afghanistan. Iran has constantly used refugees as a point of pressure against Afghanistan. In this comprehensive partnership document, threats and bridging have been used. Current president Ghani's statement on the sale of water is impractical, as currently the water per capita has a deficit of 700 m<sup>3</sup>. Respondents argue that Iran has undue influence in Afghanistan, and Iran's constant pressure on Afghanistan to develop a treaty is considered an untimely and hasty act.

Many believe that Iran is taking advantage of asymmetrical power relations to formulate treaties that ultimately serve its unilateral economic growth. Iranian officials working in the water sector fear for their security, so they tend to go along with the plan. Academics

in Afghanistan doubt that productive negotiations are possible at this moment in time. Afghanistan is suffering from ongoing instability, lack of institutions and lack of water experts. Iran knows that Afghanistan is at a vulnerable juncture, making it easier to manipulate stakeholders. Despite the intense war of words exchanged, Afghanistan has always refrained from any initiation of any kind of negotiations.

### **2.6.1 Asymmetrical Power Relations**

Various structures and relations guide the water discourse through nation-states and institutions, and, in the context of asymmetrical power relations, these structures are sometimes hegemonic, entailing high-power asymmetries that make effective cooperation processes extremely complex, time-consuming, and inequitable. This situation further consolidates the role of hydro-hegemony to exploit the weaker riparian state in most of the regional water conflict resolution settings. The result is long-term regional conflicts, poor water management, degradation of environmental resources, and the possibility of water wars predicted by many scholars. Water relations between Afghanistan and Iran are defined by a high level of power asymmetry, which is the reason for the inequitable water distribution among riparian states and the basis of several phases of intense conflict, avoidance, and blame assignment. Since the intervention of the United States in 2001 and Afghanistan's journey of reconstruction, we can divide the events into two phases.

#### ***2.6.1 a. Various Forms of Power***

Four kinds of power are associated with the management of transboundary waters according to Homer Dixon (1994).

1. Geography
2. Material power
3. Exploitative/bargaining power
4. Discursive/ Ideational power

These power sources are not equal in nature, and they contribute differently towards the water interaction between the states. Usually, bargaining power and material power are more important than ideational power and geographic location (Cascão and Zeitoun 2010, pp.10).

### **Geography**

Afghanistan remains upstream in the Helmand River Basin with around eighty percent of the river area in Afghanistan, with a few tributaries lying in Iran. Geographically, Afghanistan has a hand in managing and even controlling the flow of water to Iran. However, this power was negatively utilized by the Taliban regime between 1994 and 2001, when the Taliban closed the water taps to Iran. During the last twenty years of the post-Taliban regime, the Afghan government has tried to boost cooperation and refrain from any direct conflict with Iran over transboundary water management.

Despite control over the geography of the Helmand and Harrirud, Afghanistan remains weak against territorial aggression. The Taliban has conducted several attacks on the Salma Dam to halt or delay its construction process. Iran, in several bilateral and multilateral environmental forums, has accused Afghanistan of controlling the water flow to Iran. Many

environmentalists believe that Iran's reduced water availability is the result of consistent drought and climate change rather than Afghanistan using its upstream position to halt inflow to the downstream riparian (Shruder, 2014). In the interview with the international water expert the value of water for both countries are mentioned below:

“Water itself is a major source of power which Afghanistan possesses. Iran's dependency on transboundary waters is only 6%, whereas the rest of the water comes from internal sources. Afghanistan, on the other hand, has a dependency of 26% on TBW. The narrative on dam construction in Afghanistan reflects Iranian attempts to control the transboundary water narrative, as well as Afghanistan's weak negotiation position due to a lack of infrastructure, resources, and qualified personnel.” (International water expert, 2020).

### **Material Power**

Afghanistan and Iran have imbalanced economic and material power. Iran enjoys a better economy, higher education rate, vibrant economic and social development institutions, and highly trained water experts. The allocation of the government's budget for the development of water infrastructure is in sharp contrast to that of Afghanistan. Iran has built over three hundred dams and is still investing financially and diplomatically to secure more sources of water for its growing economy. Iran's investment in the subsidization of the agricultural sector is immense.

Iran's military is one of the most equipped and well-trained, with sufficient logistical and weaponry support. Afghanistan is still dependent on international donors and regional neighbors for economic and security support. Afghanistan is still fighting global terrorism, and extremist groups like the Taliban reside in several part of the country. The Taliban

continues to destroy the nascent economy by launching attacks against education and health facilities, destroying government buildings, roads, and bridges.

In the current wave of violence, the Taliban have threatened to bomb water infrastructure, especially the Salma Dam. Afghanistan's population is concerned with survival and is dependent on Iran for trade, refuge, and economic assistance. Iran contributed to the reconstruction of Afghanistan in 2002 by committing 560 million USD for Afghanistan's construction and offered a further 100 million USD in subsequent years. Iran has invested in the construction of roads, bridges, power generation, education, and health (Milani, 2006). This seems indicative of good will and deserves acknowledgment, but it also highlights the upper hand Iran has in terms of material power. According to Shruder, the only material power Afghanistan enjoys is the recent construction of the dam over the Harirud and Helmand Rivers, and the canals built by the United States during Soviet regimes (Shruder, 2016).

### **Discursive/Rhetorical Power**

Iran's politicians, academic institutions and media are highly organized and controlled compared to Afghanistan's. In most forums and media outlets, Iran's rhetoric around TBW interaction is shaped by humanistic and environmentalist narratives. Iran blames the Kamal Khan and the Salma Dam for drying the Hamoun Wetlands. Iran continues to accuse neighboring states of the shortage of water, which is due to climate change and to the mismanagement of water resources inside Iran. Afghan official from Ministry of Energy and water:

“This narrative of accusing neighboring states is vivid in all official statements by the lead spiritual and political leaders and media outlets. Especially when public uproar happens in Iran, the blame is shifted toward neighboring states to cover the internal mismanagement issues.” (Senior Water official, 2020)

The number of publications released yearly on water management in Iran is incomparable with Afghanistan. Asymmetric power relations lie at the heart of adopting silent diplomacy and total avoidance of any conflict with Iran during President Karzai’s regime. As per interview with the Afghan professor of Environmental Studies at the Kabul University:

“Water remains a national security issue and a matter of high priority. Iran has assigned its top diplomats to undertake water negotiations with Afghanistan, and they pursue Barjam negotiations. This shows the level of resources, including national and international lobbyists invested in this matter.” (Professor at Kabul University, 2020).

One example of narrative-setting is the statement of Sayed Abbas Araghchi, Deputy Foreign Minister of Iran, on the inauguration of Kamal Khan:

“It is clear that Iran has water rights, and that Afghanistan has water rights, but we shall also consider nature’s right to avoid further environmental degradation.”

Afghan authorities have always proposed an independent third party to decide if the environmental degradation of the Hamouns is due to the water supply from Afghanistan being withheld or to the inadequacy of water reservoirs in Iran. This issue demands an impartial evaluation.

Afghanistan’s rhetoric is shaped by water as a resource for the alleviation of poverty and the promotion of peace and security inside Afghanistan. The public of Afghanistan believes

that their country has full right to develop its water infrastructure as they choose. In recent years, government officials and academics, informed by international water law and the Helmand Water Treaty, have stated that neighboring countries should allow Afghanistan a grace period to establish effective water infrastructure and management systems in the wake of conflict and destruction. In the interview with senior water official from Afghanistan. Iran has stronger rhetoric power and shape the narrative to gain international support. He mentioned:

“Iran has received billions of cubic meters of water since the inception of Goldsmith, and they should appreciate the generosity of Afghanistan”.

“The media does not portray the same messages as agreed upon in bilateral meetings. They alter it and send contradictory messages that ultimately support the Iranian position. This kind of messaging betrays the general population and diverts their attention from the real water mismanagement issues. Furthermore, Afghanistan is portrayed as a perpetrator while Iran is painted as a victim suffering due to the recent development projects in Afghanistan. This kind of narrative-building is perceived as a short-term strategy while in the long-term it impacts the bilateral relations between the two countries and causes further delay in cooperation on water issues. The humanitarian angle is exploited for the benefit of the water conflict. Refugees need water, and therefore Afghanistan shall come up with new water treaties. Iran also continues to propagate the narrative that Afghanistan will use the water sources to cultivate poppy. (Afghan senior water expert, 2020)

Iran has criticized Afghanistan for destroying ecosystems and draining the Hamouns, while Iran itself has built five highly disruptive dams on rivers in Iran. All of these have reduced

the flow of water to the wetlands. Senior Afghan Diplomat in the interview mentions about the rhetoric used by the Iranian side to gain international attention on environmental aspects while hiding the facts on unilateral construction of water resources.

“The rhetoric is shaped by humanistic and environmentally sentimental messaging.

Water remains a national security issue and Iran considers it a matter of high priority. The country has assigned its top diplomats to undertake water negotiations with Afghanistan, and they continue to pursue a nuclear deal known to Iran as Barjam. This shows the level of attention invested in this matter” (Senior Afghan Diplomat, 2020).

### **Negotiation Power**

An Afghan diplomat highlighted that “Afghanistan is already in conflict with Pakistan, and it cannot afford to have another enemy. Delaying negotiation is the only strategy to avoid conflict.” (Afghan diplomat.).

Diplomats and water officials blame a lack of data, transboundary water policies and reliable third parties as the major reason for Afghanistan’s passive stance.

An Afghan water expert pointed out that “Afghanistan has a wrong assumption that it has plentiful water resources and can trade them with Iran. The border areas across both countries are facing acute water crisis, and Iran should not coerce Afghanistan to agree upon an unfair arrangement; Farah, Nimroz and Badghis all have critical water conditions.” (Afghan water expert).

Afghanistan rose from the ashes of destruction with few institutions left standing. The Ministry of Energy and Water had most of its data destroyed. The country has chosen unqualified water experts to analyze Afghan water needs, future consumption estimates

and hydrological and meteorological data. Over the last two decades, international donors and partners have outsourced water management projects to international consultants, but the product quality deteriorated and was rejected by the ministry's leadership. Insecurity in many parts of Afghanistan was regarded as the primary obstacle in recruiting qualified personnel.

According to an international water expert "The government of Afghanistan should have invested further attention in setting strict codes of conduct and well-defined guidelines on how to pursue water negotiations, adopting inclusive approaches through the involvement of academia, civil society groups and women's groups." (International water expert, 2020). Afghanistan lacks hydrological and meteorological data at both the institutional and legal levels. There is a lack of international knowledge of the major provisions of the agreement. The capacity of Iranian diplomats and negotiators varies widely. Iran has established institutions for training and education regarding the topic at hand, while Afghanistan does not. The two countries' levels of capacity at the diplomatic, technical, and institutional levels cannot compare. This puts Afghanistan at a grave disadvantage in water negotiations. Iran controls the discourse, while passive Afghanistan, unequipped to effectively advocate for itself, often accepts whatever is proposed by the other riparian.

#### Use of Fear and Intimidation in negotiations

Iran, over the last two decades, have resorted to the use of fear and intimidation as tools to pursue water diplomacy with Afghanistan. Major General Rahim Safavi, military aid to Iran's Supreme Leader, Ali Khatemie, warned about the escalating tension between Iran

and its neighbors. He mentioned that Iran is sharing water with twelve neighboring states and that water issues could lead to either further cooperation or confrontation.

As Afghanistan continues to seek foreign assistance in building its water infrastructure, Iran continues to ask countries to consult it prior to making any decisions on waters in western Afghanistan, which India has ignored Iranian's request completely. Iran also continues to warn of the presence of foreign troops in Afghanistan having a reverse impact on cooperation over water issues. Iran's Minister of Energy and Water also warned Afghanistan that they must suspend the export of electricity as water scarcity continues to grow (Majidiyar, 2018).

Lack of security and protection for water diplomats remains a key issue. Many senior water officials have complained that the government is not providing them with sufficient protection, and that they fear for their life when taking part in water negotiations. Some of the politicians also self-censor and avoid taking part in any discussion around transboundary waters with Iran. Afghan senior diplomat mentioned.

“The departure of Dr. Ragin Dadfar Spanta from the foreign ministerial position is due to the controversy over the waters. He was perceived as a threat to Iran as he insisted on fair and equitable rights of Afghanistan in the post-conflict development era, and strictly emphasized it at the ministerial meetings with his Iranian counterpart” (Senior Diplomat, 2020).

### **2.6.2 Lack of Leadership and Professionalism**

Corruption is another major impediment to the training of technical, vibrant, and dedicated water negotiators. Lack of proper attention to water experts and diplomats creates an environment of mistrust between the policymakers and water experts.

According to an Afghan diplomat “The government has been playing the ethnic card to sideline true water experts, and it brings on board officials with minimal understanding of water issues, all sharing a similar ethnic background. The ethno-centric approach adopted by top leadership has been damaging to the interests and the spirit of true water experts who can propose viable enduring solutions for water cooperation between Iran and Afghanistan.” (Afghan diplomat.) International water expert mentioned that lack of professionalism impedes negotiation processes:

“Professionalism and integrity are another major issue when dealing with water diplomacy. Unless the national identity is defined under certain values acceptable to all, diplomats will function in absolute darkness, without trusting the leadership on top. Thus, every person pursues their own interests under the realm of government positions. Diplomats, water experts and technicians lack policy guidance, clarity on messaging and proper support and protection from the central government to pursue water negotiations.” (International water expert, 2020).

### **2.6.3 Technical capacity**

Despite one and a half centuries of water diplomacy, Afghanistan has not been able to fully develop this field and lacks sufficient legal and political basis to safeguard its water rights in the face of its more powerful neighbors.

“The lack of capacity has motivated experts to pursue a path of water cooperation with neighbors in a more transparent manner. Environmentalists and water law experts are accused of being spies for Iran, further limiting the technical expertise input.”

Afghanistan could train and invest on a huge number of water experts during the last two decades of international community engagement in Afghanistan. With presence of international community and major donors, Afghanistan had access to great resources to develop guidelines, train water expert about effective negotiation skills, conduct and institutionalize effective research and data collection to be utilized in water negotiations. Afghanistan could have many exchange visits to countries that had successful water negotiation with their riparian especially those that have common points with Afghanistan. Forming a technical team and cadres of water should have been at the heart of any water development program of Afghanistan.

#### **2.6.4 Unilateral Resource Capture strategy**

In this case of water conflict, the dominant narrative is shaped by unilateral resource capture, without paying due attention to integrated water management across the basins for meeting the needs of affected populations. The capture of water resources is used for economic gain and elevated geopolitical status. Gaining more water means gaining more power. An aggressive water capture initiative perpetuates tension while putting undue burden on the environment of the region.

### **2.6.5 Enforced notion of Water Trade**

Iran and Afghanistan use water trade as an alternate model of cooperation. During the launch of the Kamal Khan Dam, Ashraf Ghani, the President of Afghanistan, mentioned in his inaugural speech that, “Afghanistan can now control its waters, and if Iran wants a larger share of the waters, it should purchase water in exchange for oil.”

An Afghan water expert stated, “Iran has adopted water trading as an approach to mitigate the negative consequences of the self-created water crisis.”(Afghan water expert).

Research participants argue that this is a reckless political statement without proper understanding of water conditions in the country. Many inside Afghanistan carry the wrong assumption that Afghanistan has sufficient or surplus waters. This is considered impractical as Afghanistan remains in a 700 m<sup>3</sup> water deficit, especially in the southern and western regions where the Helmand and Harirud Rivers flow. The obvious criticism of this trade practice is that Afghanistan is in no position to be giving out water, regardless of what it is getting in return.

According to an Afghan water expert “Afghanistan has already witnessed a 60% drop in water resources, and drought and climate change have depleted and degraded most of its water resources. The Afghan government should stop selling water entitlements without predicting the future demand of its population.” (Afghan water expert, 2020).

Water trade has also been highly criticized by water experts, as a country can only trade its water if water availability is sufficient for its own population needs. (Damkjaer, S., & Taylor, R. 2017). Afghan Senior Water official on water trade mentioned:

“This insatiable thirst for irresponsible water consumption, justified with water trade, has already left irreversible environmental degradation in Iran itself. Complying with this model of water cooperation will further devastate the already underdeveloped water resources in Afghanistan.”

“Politicians should avoid any kind of baseless promises that can further endanger the water resources in the shared basin. Water trade for oil will lead to deprivation of the entire population living across Helmand and Harrirud for a few gallons of oil. The president of Afghanistan cannot jeopardize the well-being of people for an unfair trade, as we are suffering from lack of water.” (Senior Afghan water official, 2021)

-Afghan Refugees as a mean to pressurize Kabul.

According to the UN, about 2.5 million Afghan refugees live in Iran, with Hazara and Tajiks making up seventy percent. Many of them fled during the former USSR’s invasion in 1979, and numbers grew further when civil strife erupted after the withdrawal of international forces, leaving a vacuum in Kabul in the 1980s. Iran has tried to use their demonstration of good will throughout the years as leverage in water negotiations.

Iran was a signatory of the 1951 Convention and its 1967 protocol. At one point, the Ministry of the Interior in Iran reported about 4.5 million Afghan refugees, both registered and unregistered to live there. After the dissolution of Taliban control in 2000, the United Nations High Commissioner for Refugees began the repatriation process. As a result, millions of former refugees have returned to Afghanistan. The number of returnees between 2019 and 2020 is estimated at 198,000.

Despite that documented Afghan refugees enjoy a mostly normal life and all the benefits of the more economically developed Iran, Iran has extreme measures for dealing with undocumented Afghan refugees, up to and including death, even for minors fleeing impoverished conditions. In 2020, Iran also deported 220,000 Afghans who were lucky to face less brutal measures.

Even documented Afghan's face discrimination, however, as there are restrictions to higher education and the job market. The Foreign Minister of Iran, Zarif, said in a news interview that Afghanistan has a responsibility to provide extra water to Iran for its own citizens living there.

The Karzai administration of Iran deported thousands of unregistered immigrants, accusing them of drug trafficking and illegal immigration. Afghan analysts say that Iran was reducing their own resource burdens while assigning false blame to vulnerable populations seeking refuge.

In 2021, about 860 undocumented immigrants have been deported to the conflict-ridden and economically unstable Afghanistan. Most of these returnees are suffering due to lack of humanitarian assistance, and thus end up joining the camps for the internally displaced to receive food and basic humanitarian packages. Some who cannot move back to their villages due to insecurity or drought end up wandering the streets of Herat, Kabul, and other major cities. The ongoing conflict, persistent drought and Covid have all increased the humanitarian crisis and have further compounded the vulnerability of the Afghan people. Afghan officials believe that economic revitalization of bordering provinces

through water management plans can prevent further immigration and enhance the wellbeing of residents.

#### **2.6.6. Blame game, destructive internal policies.**

Iran is one of the driest countries in the region with an annual precipitation rate of 250 mm. Seventy-one percent of the precipitation is lost due to evaporation. Iran is a large country made up of ninety percent arid land. Iran's continued population growth and drought have left harsh impacts on its water security. Iran's illicit storage of water has caused several rivers to dry up at the delta. Analyst believes that Iran had increasingly developed overall storage capacity twice as it was agreed in the Helmand water treaty by building Chah Nimeh. Yet Iran has not properly developed irrigation infrastructure system and has a poor water management. (Sadat and Sayed. 2020). From Afghan experts' perspectives Iran has developed illicit water storage which Afghanistan has not either agreed upon or Afghanistan received any notification.

It is third globally for dam construction, making widespread use of them for irrigations, water supply and power generation. In 2013, Iran had 316 dams of varying sizes, 132 more under construction, and the plans for 340 more being evaluated for feasibility (Tabari and Aghajanloo, 2013). This sort of unbridled development has significantly damaged ecosystems, causing villages and historical sites to disappear, water quality to degrade, and population health to decline. Iran expands agricultural and industrial use of water unilaterally and without regard to the environment or its neighbors.

Iran has depleted its own groundwater, which is one of the most plentiful sources of fresh water and is generally superior to surface water. It is better protected from pollution, less

subject to seasonal fluctuations, and it is uniformly spread over large portions of land. Groundwater is widely used for irrigation in arid to semi-arid countries. Climate change and reckless human activity can alter the pattern of precipitation, runoff and evaporation that can ultimately result in the depletion and groundwater and surface water alike.

Iran's management system is superior to most other Middle Eastern countries, but it still faces a serious water crisis. The government blames the crisis on climate change, international sanctions, and neighboring states. The water crisis, in truth, is the result of poor management and incoherent planning. Iran continues to search for a cure without considering a strategy of prevention (Madani, 2014). Iranian officials refuse to look inward for how to reduce the impact of climate change or formulate policies to prevent further damage (Mahoozi, 2021). Iranian officials have acknowledged the severity of the crisis, admitting that as much as twenty percent of Iran could become uninhabitable within the next twenty years. This volume of destruction is in some ways greater than that of a theoretical nuclear disaster (Counter Punch, 2018).

The government has favored companies led by powerful landowners and particular ethnic groups while overseeing one of the most ambitious dam construction projects in history. These dams now number more than 600, growing steadily since the revolution of 1979, damaging water resources (Khani, 2018). The water crisis has led the clerical regime to blame neighboring countries for their self-created crisis. If clerics had more influence, they could easily start a war using a religious narrative. Iran remains blind to the environmental problems, corruption and mismanagement that are really to blame (Khani, 2018).

Iran's irrigation practices are regarded as highly inefficient, consuming far more water than necessary for what they are cultivating. Nearby areas spend a mere fifteen percent of their water on irrigation for crops, while Iran uses over ninety percent of theirs for the same (Madani, 2014). This irrigation policy was put in place during the Iran-Iraq War for the purpose of food security, but it has become unnecessary since then. Subsidized farming gave farmers full license to exploit water reserves for intensive crop cultivation.

Iran's aggressive modernization efforts and strong push for swift development has left the environment and waterways with irreversible damage. International sanctions on water usage have only further complicated the situation. The disintegrated decision-making process involves multiple stakeholders with different sets of values and interests, and hierarchical positions further restraining cooperation on a policy level. A lack of coordination between the urban development sector, the agricultural sector, the industrial sector, and energy sector has created an uncoordinated system with little interaction between sectors. The intense level of conflict and competition among these stakeholders has been damaging the formulation of comprehensive policies that tackle every aspect of water development and environmental protection.

Considering the current magnitude of the crisis, environmental experts and water officials have voiced their concerns with government policies that threaten the environment and exacerbate the water crisis. The government retaliates against these experts, sometimes arresting them and labelling them traitors and spies. As a result, many experts self-censor to protect themselves. The government takes no blame for its mismanagement and instead blames climate change and population growth (Tehran Times, 2017).

## **2.7 BILATERAL RELATIONSHIP OF IRAN AND AFGHANISTAN AND ITS IMPACT OF WATER**

Iran and Afghanistan share a complicated relationship. They share strong religious and cultural ties, and both countries speak Farsi/Dari. Strong cultural heritage is shared between them, as Islam unifies the two countries, with a Shiite majority in Iran. Both countries signed a Treaty of Friendship in 1921 and a series of events followed which created periods of conflict and those of cooperation. Iran and Afghanistan have never had land disputes or waged war on one another. Since the invasion of Afghanistan by the USSR, which coincides with the Iranian revolution, Afghanistan remains a key state in Iran's foreign policy. Iran maintains relations with several key stakeholders in Afghan society, who further have complex relations within themselves (Mehdiyoun, p. 180).

These kinds of relations are considered part and parcel for the national security interests of the country, considering the continuous war and interplay of several stakeholders of different identities and ethnic backgrounds. Afghanistan pursues a very cautious and balanced policy toward Iran. Afghanistan is also dependent on the financial and political support of Iran.”

Iran's relations with Kabul are also influenced by the presence of the United States in Afghanistan. Although both countries have had a series of back door cooperations to stabilize Afghanistan, fight terrorism and dismantle the Taliban, this informal cooperation was never institutionalized. In recent years, Iran has supported both the Afghan government and the Taliban, catering to all parties in the Afghan political environment. Foreign Minister Zarif officially admitted to this duplicitous strategy in a TOLO interview.

Despite an imperfect—and at times, tense—relationship, the two countries have always managed to maintain a cordial relationship (TOLnews, 2020).

The impact of water conflict on bilateral relations remains intense. Both countries have on several occasions exchanged accusatory words. Water relations became even more tense after the extreme drought in the region. Iran continues to pursue additional water extraction from the Helmand and Harrirud Rivers. Iran acts hypocritically as it preaches environmental sustainability while bleeding the land dry in the name of economic development. In 2003, Iran signed a UN agreement to protect the Hamoun Lakes and establish a working commission with Afghanistan to ensure the protection of the Hamouns (Houck, 2011 and Peterson, 2013).

According to an Afghan diplomat “Afghanistan wants to establish friendly relations with Iran, as it is already in political turmoil. Ninety percent of Afghans live on less than 2 USD per day. Afghanistan is engaged in fighting terrorism and faces high internal political instability. It is highly dependent on the transit route with Iran. The Ministry of Energy and Water emphasizes the separation of political issues from water diplomacy. Quality of water management can be compromised if mixed with other political and social issues.” (An Afghan diplomat, 2020).

Iran has accused Afghanistan of narcotic trafficking which has led to almost 2.8 million addicts in Iran, considered a national crisis. The United Nations Office on Drugs and Crime, however, stated that \$28 billion worth of narcotics are trafficked through Iran to European countries annually (Aman, 2017). The Taliban and Iran both benefit from this

lucrative business. Iran and Afghanistan share porous borders, and the insecurity in Afghanistan has major implications in Iran, especially when US troops have left. Opportunistic terror groups like the Islamic State of Khurasan emerge, and at that point Afghanistan and Iran work together to ensure security and control the spread of extremism and terrorism along the border regions. The two countries have also collaborated on economic projects like Chahbahar, which was only possible through cooperation and formal bilateral platforms.

### **2.7.1 Chahbahar, a trade corridor**

In August 2002, President Khatami visited Kabul to initiate the discussion around the Chahbahar Port, which could serve as an alternate trade route to Karachi for Afghanistan. Chahbahar was to be a free trade zone located in the Sistan-Baluchistan province of Iran. India contributed and invested to increase its own access to oil and trade with Iran and Central Asia. India was also very interested in bypassing Pakistan during trade with Afghanistan, and this port made it possible. The only waterside trade route up until that point had been the Gwadar Port in Karachi, 1,700 km away, operated by China. Iran offered a tariff discount of forty percent on goods transported through Chahbahar Port.

The port was intended to boost trade between Afghanistan and Iran, ensuring economic growth for both countries, with support from India. Iran wanted as many countries to participate in the project as possible, believing it would shield them from imposed sanctions. It was granted narrow exception under Section 1244 of IFCA (Iran Freedom and Counter-Proliferation Act of 2012). This exception was granted to support reconstruction efforts in Afghanistan (Basravi, 2020). Chahbahar port development aimed at increasing

regional connectivity to Central Asia via Afghanistan and increasing economic cooperation globally between China and India and bolster Iran's status at the international level. The U.S sanctions on Iran slowed down Chabahar development and Afghanistan remained over dependent on Pakistan's sea port (Landay and Jain, 2018).

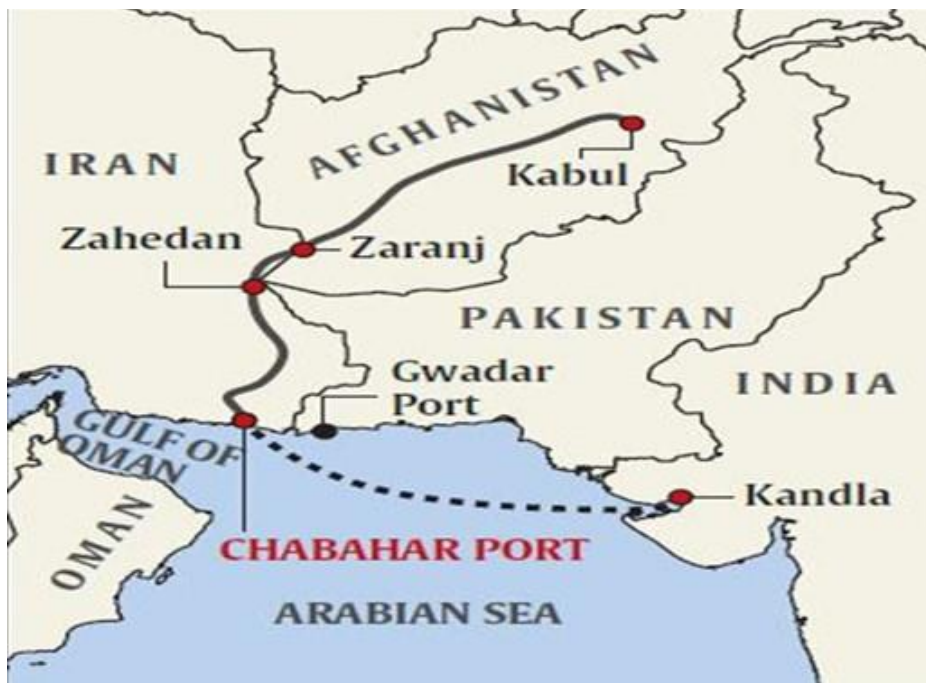


Figure 10: Map of Chabahar Port, derived from google on 4/20/2021: <https://iasbaba.com/2022/08/chabahar-day/>

### 2.7.2 Taliban and Iranian Relations

The relationship between Iran and the Taliban has changed over the course of the last three decades. As a Sunni dominant group, the Taliban have been hostile against Iran's majority Shiite population. The Taliban has been assisted by Saudi Arabia, considered a rival nation to Iran. Despite these points of tension, in February 2019, the Peace and Reconciliation

Process began, which included peace talks and more interaction between the Taliban and Iranian officials. The Taliban even appointed a Shiite to a position of power in their group, regarded by many as a public relations gesture and nothing more. The Taliban continues to foster a tactical relationship with Iran that grants them greater political influence in the region, including in Afghanistan.

Before phase three of the Kamal Khan project, which included turbine installation and digging operations, civil rights activists, and parliamentarians in Nimruz Province expressed their concern over the possibility of a threat against the dam by The Taliban, who had developed strongly pragmatic relations with Iran, easily able to equip themselves and launch an attack against the dam. The government in turn deployed police to deal with any potential threats; no incidents were reported throughout the project cycle.

Afghans remain concerned about the security of these dams. It is argued the withdrawal of troops will be followed by other international presences and an overall attention to the development of Afghanistan, which ultimately leaves the country vulnerable to destructive forces of Taliban, a terrorist organization.

## **2.8 STRATEGIES TO REDUCE ASYMMETRICAL POWER RELATIONS:**

### **2.8.1 Open Communication**

Afghanistan should continue to share reliable data on the major effects of overutilization of waters and constructions that endanger the long life of basin and its eco-system around. Overutilization of water is a huge problem, considering the area's low precipitation and the quickening pace of glaciers melting. Water relations remain tense, but solid mutual

understanding could turn the situation around. Other regions have demonstrated that by working together, upstream and downstream riparian states can more effectively manage their own water and water basins. What Afghanistan and Iran need is open, honest communication that fosters true cooperation with shared goals. Iran has thus far failed to empathize with Afghanistan's position as a country in reconstruction, still suffering from violence and instability. Likewise, Afghanistan must recognize the growing needs of Iran and do its best to be cooperative yet assertive as it pursues infrastructure projects on shared waterways.

Sound water management is only possible if the country has an inward-looking approach and prioritizes its water development needs based on its impact on environmental sustainability. Over-ambitious development plans can jeopardize long-term sustainability. Currently, both countries blame each other for depleting water resources and creating environmental disasters. Afghanistan has depleted fourteen percent of its water resources due to lack of proper management and years of conflict. However, Iran has depleted forty-two percent of its water resources due to aggressive dam construction. International water expert mentioned in the interview:

“Iran has never shared the true data with Afghan counterparts, or the data shared does not tally with the data we have. It is hard to trust the credibility of data shared by Iran while it has a huge stake in water rights.” (International water expert, 2021)

### **2.8.2 De-politicization and de-securitization of Water Issues**

Iran's Foreign Minister Mohammad Javad Zarif warned of reciprocity if Afghanistan denied Iran its water demands. He stressed that Iran would take tough measures in certain areas of Afghanistan. Iran's Supreme Leader Hassan Rouhani shared similar sentiments after the construction of the Salma Dam, warning Afghanistan that reciprocal actions would be taken if the country continued to build dams on shared water basins. He accused Afghanistan of degrading the environment in Sistan-Baluchistan and the drying up of Hamoun Helmand. Afghan diplomats and academics regarded these statements as empty threats demonstrating Iran's political and military advantage. In response to Rouhani's statement, Afghans conducted demonstrations in several provinces, a time marked as one of tense diplomatic relations between the countries. Afghanistan should encourage Iran to de-politicize water relations and handle water relations more from a technical, pure water related front. Politicization creates harsh narrative and further intensify the relationship between the two countries.

### **2.8.3 Incentivizing Joint Data-Gathering and Knowledge Generation**

A joint feasibility study of the entire water basin could be a suitable place to start. One of the most vibrant models of cooperation is the EU Water Framework Directive, which is a legal tool to prevent the deterioration of water, ensure the sustainability of ecosystems and manage water conflicts in a timely fashion. The current approach to dam construction and its cost/benefit ratio for future generations must be revisited by the politicians and water

officials of each country. Politicians have naively acted on the notion that more dams equal more available water, which is not always the case, especially in the long-term.

This framework also facilitates engaging a wider population in economic planning and more widespread integration of water management. The framework covers freshwater resources, underground waters, wetlands, transitional waters, and coastal waters. Lack of trust, lack of technical capacity, and highly asymmetrical regional powers have restrained Afghans from effective negotiation. Afghans lack trust in Iran partly because of their dealings with the Taliban.

#### **2.8.4 Regional Cooperative Mechanisms to mitigate power asymmetry.**

Regional cooperative mechanisms should be established to prepare a more balanced playing ground for the negotiations around the Helmand River Basin. Further technical and financial investment is needed to support the long-term national and regional initiatives for the promotion of cooperation. Strengthening transboundary water policies and regulation in both countries can prevent further damage to shared basins and mitigated conflicts between riparian states. Political will is another key determinant of cooperation. Unless countries abandon unilateral resources capture mindsets, the prospect of change seems unlikely. Afghanistan must also learn from Iran's mistakes, being careful not to overexploit the area's natural resources to the deficit of the environment.

#### **2.8.5 Inclusion of Civil Society and Community Groups**

The role of civil society is pivotal in the mitigation and prevention of water conflicts and balancing power imbalance between the co-riparian states. Civil society leaders can boost

the level of cooperation among states by focusing on win-win approaches. Civil society can organize exchange visits to ensure a smooth dialogue among the countries in a less formal set up. Civil society can also raise awareness and educate people about the efficient use of water resources. Research institutions can contribute to the education of citizens on the need for environmental protection. The role of social media is critical in sensitizing the youth to the future impacts of water mismanagement, namely its destruction of ecosystems in the area. Civil society approaches can focus on building trust among conflicting riparian states and enhancing the narrative around cooperation than focusing on resource capture. Civil Society organizations can also bring their government to accountability and this trend in Iran has been already active among the environmentalist to pressurize its government to look inward and focus on protecting the environment. The Afghan government should improve its capacity with support from international donors and partners, especially the United Nations, the World Bank, and institutions such as IHE-Delft. Iran cannot play the role of the rogue state. As per interview with the international water expert:

“If peace prevails in Afghanistan, it would be costly for Iran to get involved in any kind of conflict over water. Any interference would be considered an act of aggression, so it is not in the benefit of Iran to take advantage of the unstable political and security situation in Afghanistan. States cannot function as rogues. They should respect the territorial integrity and sovereignty of Afghanistan, and they should play by the rules” (International water expert, 2021).

### **2.8.6 Revisiting Water Policies**

Afghanistan should look inward to find loopholes in managing its water policies and identify the patterns and trends it adopts leading to further solidification of water asymmetry between the states. Afghanistan should assign a team of technical experts with specialization in various aspects of TBW management to better guide the policy circle for understanding the various components of water agreements and enhance fairness and equity for both sides.

Afghanistan should also encourage Iran to pay deeper attention towards its own water policies that jeopardy the entire basin development eventually. Iran is undoubtedly sliding into an extreme water crisis with irreversible impacts on the environmental front. The country must take substantive and prompt measures to stop the trend. The government should provide greater incentive to farmers to form cooperatives or similar entities to efficiently respond to emerging agricultural needs. The government must adopt water markets for increased economic efficiency of water (Madani, 2014). Primarily, instead of blaming neighboring riparian states, the country should look inward for major policy change regarding aggressive development strategies with devastating environmental impact. Policy should reflect a reverence for coordination among all stakeholders to create truly sustainable conditions through comprehensive approaches. Meanwhile, Afghanistan should exercise more caution in entering any kind of the agreements/treaty with Iran. The better aware the policymakers in Afghanistan are the better provisions will be provided to address power asymmetry and harmonize TBW relations.

#### **2.8.6 Amplify the voices for Joint Protection of Ecosystems**

Afghanistan must continue to amplify its voice in the international fora for fair and equitable use of water resources across the shared basins. Iran must cease and desist their unilateral resource capture strategies, as well as their coercive means of implementing self-serving policies and projects. It is time for joint development strategies for the entire Helmand Basin, with each party respecting the development rights of the other, but with consideration for Afghanistan's status as a war-torn and impoverished nation in need of reconstruction and revitalization. The role of civil society is critical in raising awareness among Iranians on the importance of healthy ecosystems. Environmentalists can educate people on water mismanagement and its repercussions for future generations. Cooperation from the media on all sides could be a useful platform for raising awareness about safe water practices and the prevention of water wasting.

Low precipitations, frequent dust storms and resource mismanagement are leading to the disappearance of Lake Hamon. This has caused complete devastation to villages and the people who live within them. This has all happened despite Iran's pledge to preserve water resources under the Ramsar Convention of 1971. "The Ramsar Convention on Wetlands (1971) produced an international, intergovernmental treaty which defined wetlands as areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six meters." (Suman, 2019). This is yet another example of failure to comply with the terms of an agreement, all in the name of short-term economic gain.

### **2.8.7 Promoting economic interdependence:**

Projects like Chahbahar which ensures benefits for both Iran and Afghanistan can provide more stable negotiation platform for both countries. Economic interdependence can boost the environment of cooperation and allow both countries to work on non-water related matters. However, the environment of US sanctions against Iran also impedes further investment in the region on the projects involving Iran.

## **2.9 CONCLUSION: AN INTEGRATED WATER MANAGEMENT APPROACH**

Iran and Afghanistan have gone through periods of cooperation and tensions, which has affected the development of Afghanistan's recovery from conflict. Past values, relations, structures, and third-party interventions have shaped recent interactions between the two nations. The analysis of various narratives and discussions highlights unilateral resource capture as a key issue of concern in post-conflict Afghanistan. Iran and Turkmenistan are often happy to approach the situation cooperatively through water treaties, knowing that power asymmetry in the region will still allow them to come out on top through opaque efforts of unilateral resource capture, all without any overt disruption to bilateral relations. An impartial third party is strongly needed in this case, to ensure that transboundary water management is being managed fairly by all parties involved, and if possible, to contribute financially to mitigating further degradation. Plans for the Helmand and the Harrirud must include Afghanistan's understanding of Iran's water needs, and it must include Iran's understanding of Afghanistan's vulnerability, instability, and need for poverty alleviation and economic development. The frozen state of water interaction between the co-riparian states is not advisable and the chances for both countries to fall into military war is not possible,

All countries involved should look inward to their shortcomings in water policy—ones that jeopardize the environment. All parties must work to curb corruption in the water sector and find alternate routes of water supply to meet the demands of their populations. As most water usage in the region is for agricultural purposes, the countries must explore superior irrigation technology such as slow-dripping methods for conserving water. High-water crops like watermelons should be gradually replaced with less water-intensive crops, and countries should join forces to work toward the revitalization and sustainability of ecosystems around the basins of the Hamouns. Afghanistan must allocate more resources to the prevention and management of natural disasters which further deteriorate the environment. Power asymmetry can only be corrected by focusing on common goals and interests for a cooperative network of peaceful and mutually beneficial riparian states.

The next sections explore the water interaction between Afghanistan and Pakistan. This water relations are more affected by the War on Terror. Shared water projects were halted due to political and security environment. Pakistan is powerful than Afghanistan in socio-economic, military, and financial fronts. However, cooperation on Kunar River and Kabul River was beneficial to Afghanistan but could not materialize due to lack of political will. This case is also interesting as cooperation is delayed seeing some improvements in the political and security fronts which ultimately killed the time and weaker riparian, Afghanistan missed some key opportunities to develop its water resources.

## **Part II:**

### **2.10 AFGHANISTAN AND PAKISTAN TRANSBOUNDARY WATER RELATIONS:**

#### **2.10.1 Introduction**

This chapter discuss the major factors behind the water conflict and cooperation events between Afghanistan and Pakistan. It outlines some of the major power dynamics that shape the incidents of cooperation and non-cooperation. While some of the major challenges are hidden in the political tense bilateral relations and historical grievance, lack of bilateral cooperation mechanisms, data sharing and of long-term financial support for water development programs in the region also compounds the existing problems. Despite sharing seven rivers, neither country has a water treaty to govern the mode of interaction and manage and develop the water resources in an effective manner.

The sole existing mechanism is the joint economic commission set up between the two countries which includes dialogue and cooperation on transboundary waters as one of the agenda items. This case will also unwind some of the traditional and non-traditional regional and international security issues that hinder cooperation between the two countries. Meanwhile, lack of trust and high-power imbalance between the two countries continue to delay any joint initiative and mechanism for cooperation and collaboration for development of the shared water resources.

Afghanistan and Pakistan share seven out of nine transboundary rivers including Kumal, Khurram, Kunar, Logar, Ghorband, Panjshir and Alingar. These river after flowing out of Afghanistan provides for a considerable portion of Pakistan's water needs. Water from the

Kabul River and the Kunar River are two leading sources of water to the Indus River. The Kabul River traverse about 560 kilometers within Afghan territory and 700 km long in Pakistan before it convenes with the Indus River providing approximately 19.25 Billion Cubic Meters (BCM) water to Pakistan though it fluctuates in different season according to the Center for Afghanistan Studies at Nebraska University.

Some data show annual average flow of the Kabul River is about 21 BCM, average water flows to Pakistan through Kabul river which translates 17 percent of Pakistan's water supply from the Kabul river. The Kabul River Basin is home to some seven million people who constitute 23 percent of the national population in Afghanistan (Britanica, T. 2015). There is no formal water-sharing treaty between Afghanistan and Pakistan. Throughout history, Pakistan has used the larger share of water originating from the Kabul and Kunar Rivers.

The Kabul River Basin is a conflict-ridden basin due to territorial contest and tensions between the two countries. The basin's development potential is not studied well, access to data and data sharing is very limited between the two countries (Eqar and Shruder. 2016). On some occasions in the past Afghanistan and Pakistan have shared their Kabul river basin data together however not on a regular basis. Some studies indicates that if Afghanistan decides to use its water efficiently and increase further infrastructure development on the Kabul river basin before it flows to Pakistan, increasing utilization of Kabul river basin by Afghanistan will cause a 15 percent reduction in water stream to Pakistan and before it merges the Indus River (Duran, 2015).

As Pakistan's economy relies heavily on agriculture, it attaches great importance to its water management. Studies indicate that Pakistan also suffers from a deficit of water reservoirs, compounded by threats from riparian upstream Afghanistan on its eastern border in case Afghanistan increases infrastructure development which leads to increasing water utilization and India in the western borders, such concerns have continued to put Pakistan in a state of high alert. Pakistan and India signed a water-sharing agreement on the Indus river back in 1960 brokered by the World Bank which regulates share of water from the Indus River between the two countries (World Bank, 2018.). Pakistan and India despite of having a contested border issue, and being known as two rivals, they could manage to come to an agreement about their transboundary water yet, Pakistan and Afghanistan transboundary water issue remains unresolved. However, it is important to note that cooperation between Afghanistan and Pakistan on the Kabul River can further conserve ecology, develop the agriculture irrigation system, ensure benefit sharing in the form of hydroelectricity, and manage floods.

Pakistan, however, has tried to be proactive and initiate negotiations on waters with Afghanistan. Despite several attempts to negotiate on Kabul River water and come to any potential agreement, these efforts have never materialized. As part of Pakistan's effort to come to an agreement, a commission was reportedly assigned to address the issue in early 2000s, but due to Afghanistan's lack of interest to share data, it has never been materialized. (Ahmad, 2010.). The government of Pakistan assigned its Ministry of Water and Power to work on increasing hydro relation possibilities with Afghanistan utilizing its experience from India Indus Water Treaty and draft a treaty on Afghanistan-Pakistan water use in

2014. The Kabul river basin commission worked to determine the amount of water that Afghanistan is currently using or expects to use. However, prior to any such decision, Afghanistan must determine two things: the amount of its water flowing into Pakistan and its own needs (Alam, 2012).

Meanwhile, it is important to note that Afghanistan and Pakistan hydro relation is intensively impacted by foreign policy of both countries that is equally shadowed by issues such as refugees, contested borders, terrorism, trade issues, regional and global powers influences. Therefore, any intervention to develop water resources in this region should consider the mentioned factors. In the absence of a comprehensive strategy the more powerful player will tend to exploit the weaker riparian and the weaker riparian will avoid avenues for cooperation fearing to lose more in enforced negotiations.

### **2.10.2 Water Conflict and Cooperation History:**

Water needs have increased dramatically in both Afghanistan and Pakistan due to intensifying irrigation, expanding industry, and growing populations. Afghanistan and Pakistan are each simultaneously upstream and downstream riparian states. The Kabul river runs through the cities of Kabul and Jalalabad and empties into the Indus river near Attock, Pakistan. It is the main river in eastern Afghanistan and Khyberpakhtunkwa Province of Pakistan. Most of the water for Kabul River originates from Chitral District in Pakistan and then flows into Kabul river. As below map illustrates, the Kunar River rises from the glacial fields in the Hindu Kush Mountains in the Chitral region in Pakistan and flows into Afghanistan. Kunar river is also known as Latkoh or Chitral river. Kunar river

flows 180 Km, and it joins the Kabul River near Jalalabad in Afghanistan before it flows back to Pakistan. Therefore, the Kunar River, a tributary of Kabul River makes Afghanistan and Pakistan as upstream and downstream of each other's (Vick, 2014).

Below map (2) is retrieved from the website of the University of Nebraska Omaha, center for Afghanistan studies. It illustrates how Kunar map arise form Hindu Kush glaciers in Pakistan, flows to Afghanistan and return to Pakistan through Kabul River.



**Figure 10:** Map illustrates Kunar River flows between Afghanistan and Pakistan: adopted from University of Nebraska, Omaha, Center for Afghanistan's Studies, in December 2020.

changes to the other side. Use of water from a shared basin will affect all other riparian countries. Despite having numerous trade agreements and partnering on several mega-scale regional economic projects, Afghanistan and Pakistan have barely discussed their water

resources. There has been no water treaty or water-sharing agreement to regulate their shares of the Kabul River's water.

As a result of war and protracted conflict in Afghanistan, most of the population, including farmers, have little or no access to water for irrigation (Gupta, 2017). On the other hand, over the last thirty years, Pakistan has increased its use of water from the Indus River, of which the Kabul River is a major tributary, and has not provided any financial support to Afghanistan to enhance management of the Kabul River (Hansasz, 2011). In addition, Pakistan has been supporting the insurgency in Afghanistan, continuing to keep the Afghan government too weak and incompetent to manage its water (Shruder, 2014).

The Kabul River Basin is one of the most conflict-ridden basins, with many issues still unresolved between Afghanistan and Pakistan. Afghanistan is moving toward the development of its agricultural sector, with the help of international organizations like the Asian Development Bank, and the World Bank, which poured millions of dollars of grants into irrigation systems with the hope of improving infrastructure. However, transboundary water management has bred serious tensions with neighbors. Historically, Afghanistan's neighbors in the absence of any kind of water treaty have enjoyed a lion's share of shared waters and Afghanistan was unable to develop its water sector due to year of protracted conflicts and lack of development programs. As explained earlier, the water from Kunar River which raises from Hindu Kush glaciers in Pakistan contributes a large portion of water to Kabul River flows to Afghanistan and subsequently joins Kabul river and streams to Pakistan. Because of this, Kabul faces serious challenges in developing its water resources for agriculture and hydroelectric generation. Because both countries are known

to be one another's downstream and upstream, therefore Kabul River basin needs profound studies and concerns must be addressed professionally in a way that addresses legitimate concerns of both countries.

### **2.10.3 Various phases of Water conflict between the two riparian states:**

Afghanistan's vital freshwater resources originate from the Hindu Kush and Himalaya Mountains and are then supplied by the five major basins in the country. The Kabul River Basin is one of the five major basins in Afghanistan, and it is the second largest after the Amu Darya Basin in the north. It rises from the Hindu Kush Mountains and connects Afghanistan with Pakistan, and it holds just over a quarter—26%—of Afghanistan's fresh water. Meanwhile, the Kabul River Basin is one of the most populated river basins of Afghanistan, with a population density of 93/km<sup>2</sup>. It provides water to a total of approximately seven million people living in the basin (Kamal, 2004).

Rising from the Sanglakh Mountains in Paghman, the Kabul River and its tributaries flow east toward Laghman and Nangarhar Provinces, then to Federally Administered Tribal Areas of Pakistan in Khyber Pakhtunkhwa Province, then to the Indus River in the Attock area of Pakistan, and finally to the Arabian sea. The Kabul River Basin is in fact the only basin in Afghanistan that flows into the sea. The Kabul River traverses approximately 560 kilometers (350 miles) within the Afghan territory, and seven hundred kilometers (435 miles) in Pakistan, before it convenes with the Indus River (King and Sturtewagen, 2010). The Kabul River irrigates around 72,000 km<sup>2</sup> of land in Afghanistan (Vicent, Azizi, and Behzad, 2016).

As illustrated on the map, several tributaries like the Kumal, Khurram, Kunar, Logar, Ghorband, Panjshir, and Alingar Rivers flow into the Kabul River within Afghan territory. A few of them such as Kundar, Gumal, Tochi and Khuram (see above map) also cross the border separately and join the Kabul River, beyond the Afghan borders, before it meets the Indus River. Also shown on the map, it is important to note that the Kunar River rises from the glacial fields in the Hindu Kush Mountains in the Chitral region of Pakistan and flows into Afghanistan. The Kunar River is also known as the Latkoh or Chitral river. It flows 180 km and joins the Kabul River near Jalalabad before flowing back to Pakistan. The Kunar River, a tributary of the Kabul River, renders Afghanistan and Pakistan simultaneously upstream and downstream of one another (Vick, 2014). The Kunar River is a frequent source of tension between the riparian states. Any unilateral action on the Kunar River serves to heighten that tension.

The Kabul River Basin's climate includes valleys with semi-tropical climate and high-altitude regions with drier weather. Annual precipitation usually occurs in winter and spring and ranges between 250 and 780 mm. However, observers believe that they can forecast water levels regarding climate change and to winter snowpack in the Hindu Kush region (Mack et al. 2013). A temperature increase of up to five degrees Celsius is expected by the end of the 21st century in the Kabul River Basin, based on the estimation of the Coupled Model Inter-comparison Project 5, or CMIP5 (Wi et al., 2015).

### ***2.10.3 a Conflict in the Kabul River Basin***

As mentioned, the Kabul River Basin is one of the most conflict-ridden basins due to the tensions that exist between Afghanistan and Pakistan. The basin is under-developed and

has remained under-utilized. As a result of political tensions, the basin has not been studied well, and access to data and data-sharing has been limited (Eqrar and Shroder 2016). Due to protracted conflict in Afghanistan, persistence of landmines, political tensions, lack of investment in country's water infrastructure and mismanagement of available resources, Afghanistan's water reservoirs, access to clean water and agriculture irrigation have remained poor. The country uses less than 25% of its surface water resources (Thomas et al., 2014). Although there have been recent improvements, as of 2017, Afghanistan was suffering from a severe shortage of electricity, with less than 28% of Afghan households having access to electricity (Kakakhel, 2017). Despite the three reservoirs built on the Kabul River, it still cannot meet the electricity demand of Kabul.

Afghanistan is heavily dependent on electricity imported from neighboring countries, even though it has huge water resources and potential for producing hydroelectricity. The Kabul River has considerable hydroelectric potentials however, new development will impact the amount of water that flows into Indus River in Pakistan. Kama multipurpose dam for instance will utilize about 123 million cubic meter and when fully utilized it will use 350 million cubic meter and irrigates 14000 hectares of land (Aziz, 2013). China agreed to help Afghan government to build Kama dam project, Pakistan and China enjoys good relationship and Afghans believed Pakistan may not protest Kama project. Increasing development of hydroelectric potentials of Kabul River will decrease Afghanistan's dependence on imported electricity from the Central Asian countries. Meanwhile, from the perspective of Afghan observers,

Pakistan, over the last four decades when Afghanistan was in conflict, has used the waters of the Kabul River more than its potential shared rights with caveat that no treaty regulates Afghanistan and Pakistan water sharing. Pakistan has increasingly developed its infrastructure while it has not supported Afghanistan in any kind of development in the Kabul River. Meanwhile, Afghanistan's progress in managing Kabul river's water decreases the flood risks in wet season which has repeatedly damaged communities and resulted in wide environmental and human catastrophe. As mentioned, water management on the Kabul River remains extremely poor, and flooding causes considerable damage to the Khyber Pakhtunkhwa province of Pakistan during the wet season. Afghanistan has not made progress in terms of building new water reservoirs, improving existing water reservoirs, measuring water quantity and quality, data collection and sharing information with neighboring countries (Shroder and Ahmadzai, 2016).

The status of surface water usage in Pakistan is better than Afghanistan. Afghanistan uses only 17 percent of its available 57 billion cubic meter surface water. (Qureshi, 2002). Pakistan uses seventy percent of the available surface water, yet the total renewable water available in Pakistan is less than the world average (Thomas et al., 2016 and Kakakhel, 2017). However, there are several factors that amplify the problem of water scarcity in Pakistan, such as unregulated urbanization, poor infrastructure, heavy siltation in rivers and reservoirs, governance deficits and climate change. In an interview with an International Water Expert, the poor management of river basin has led to serious challenges in region that need to be addressed to prevent any major environmental catastrophe. He mentions:

“The management of water resources originating from the Kabul River is essential to reducing poverty, increasing social and economic development for the future generations of both Afghanistan and Pakistan. However, due to poor management of this river basin, the scarcity of water is clear, made worse by climate change, floods, droughts, low precipitation, and extreme heat waves.”

“Countries are stuck in a unilateral resource capture mentality without opening a formal avenue for collaboration on technical and environmental issues. Afghanistan has been trying to invest in the water sector for agricultural production and electricity generation, and the country has plans to build dams on the Kabul River, which has been met with huge resistance from Pakistan.” (International Water Expert, 2020).

There are an estimated seventeen dams planned on the Afghan side on the Kabul River and its tributaries, which are still in the feasibility study phase, and they have created fear in Pakistan, due to the potential loss of seventeen million acre-feet of flow. The construction of dams to produce hydropower and irrigation is considered key in long-term development and economic growth in Afghanistan. The Minister of Energy and Water, Ismael Khan, who served Karzai government as Minister of Energy and Water between 2004-2013 stated that once Afghanistan has water, no one will grow poppies, no one will fight, and no one will leave Afghanistan—water will resolve all the biggest problems in Afghanistan (Thomas, 2014). According to Water Expert teaching in Kabul University in Afghanistan, Pakistan fears any development on Kabul River. He mentioned that:

“Pakistan’s narrative on dam construction is that any construction on the Kabul River can jeopardize the water flow to Pakistan and will limit Pakistan’s capacity to construct any dam on its territory, resulting in a lack of economic development.” (Water expert Kabul University.

“Since the news of the Dasu Dam, supported by the World Bank, in the Khyber Pakhtunkhwa province of Pakistan, Afghan authorities have approached the World Bank and the United States for the support of unilateral dam construction. Afghanistan’s requests have been denied, prompting the country to accuse the international entities of double standards between Afghanistan and Pakistan ( 2020).

### **2.10.3 b Conflict over the Dasu Dam:**

Afghanistan and Pakistan also had a period of conflict when Pakistan approached Afghanistan with notification to construct Dasu Dam on the Shared water basin, Kabul, and Kunar rivers. However, this period could be marked as a brief period of misunderstanding which was resolved without any major issue.

In 2013, Pakistan notified Afghanistan that it would be constructing the Dasu Dam with the support of the World Bank—it was intended to power a hydroelectric operation in Kyber Pakhtunkhwa. The Dasu Dam is a 1200-megawatt hydropower plant located on the Chitral river which flows to Afghanistan and becomes the Kunar river and subsequently flows back to Pakistan after combining Kabul river. Dasu is a 2.17-billion-dollar hydropower plant financially supported by the World Bank Group. (Thomas, 2016). The

construction began in 2017 and is projected to finish in 2023. The Afghanistan National Security Council and Foreign Affairs criticized Pakistan for not consulting Afghanistan. The scientific assessment of the impact of the dam on water flow to Afghanistan was shared with Pakistan, to which they paid no mind, saying that it would have no major impact on the Kabul River. Afghanistan, as a result, faced a period of uncertainty for how to approach this. It was however, realized that Afghan ministry of Finance came to an agreement with its Pakistani counterpart to build Dasu Dam and share benefits with Afghanistan yet, there has not been any discussion about operational details and how such a benefit sharing will take place. Lack of coordination between different key cabinet members of the Afghan government was a big surprise to the international friends of Afghanistan as ministry of Energy and Water as well as ministry of Foreign Affairs have not been engaged in discussions between Afghanistan minister of finance and Pakistani officials over the Dasu Dam hydropower plant (Thomas 2014.). The investment on Dasu Dam by the World Bank created several questions among the senior government leaders in Afghanistan, as in almost all major donor conferences investment on water sector continued to be a priority item for Afghan government which received no attention. The reason for lack of investment in the major dam construction by the international agencies could be the lack of clear future prospective for the political stability and security in the country. Scholars argue that the World Bank chose not to invest in Afghanistan's mega-construction projects due to insecurity and instability in the country (Shafaatullah, Raja, 2019).

Below map illustrates Kabul River basins landscapes in Afghanistan including major rivers attributers, old and newly constructed infrastructures as such hydropower and other water reservoirs.

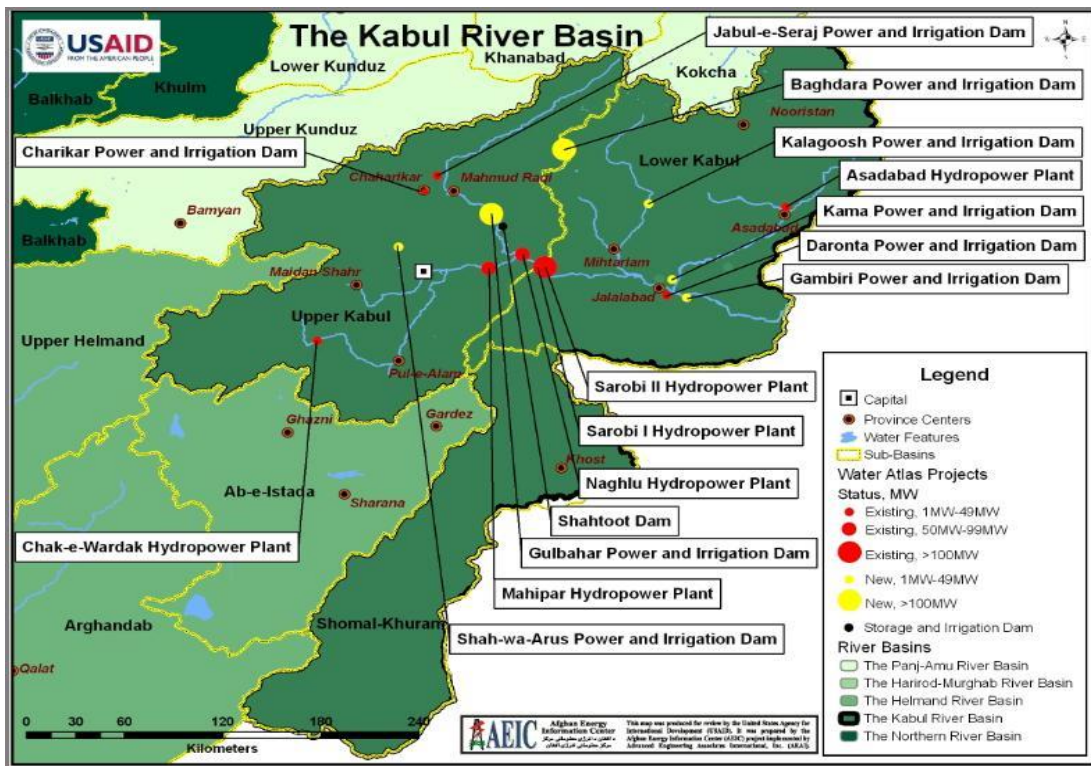


Figure 11: Map shows dams and water reservoirs on Kabul River basin.

<https://www.unomaha.edu/international-studies-and-programs/center-for-afghanistan-studies/academics/transboundary-water-research/DLM12/DLM12.php>

The Kabul River could produce enough electricity to address Afghanistan’s power shortage. Having said that as part of the plan to develop 12 while five dams have been completed, Afghanistan also plan to build the Shahtoot Dam on the Kabul River, with the financial support of India. The Shahtoot Dam is in the Chahar Asiab district of Kabul, and it has a storage capacity of 147 MCM of water. The dam would provide drinking water and

sanitation needs to 2 million people and irrigate about 400 hectares of agricultural land. India plans to support the project with an investment of \$236 million, with the intention of boosting economic opportunities for the people of Afghanistan (Ramchandra, 2018). Pakistan has remained critical of this dam, due to India's involvement, but it was an offer that Afghanistan could not refuse. However, the project activities were halted after the Taliban takeover of Afghanistan in 2021 (Ali, Faqir, Haider, Shahzad, Nosheen, 2022). The Shah wa Arus Dam is the fifth dam built on the Kabul River, located 22 km away from Kabul. The dam is mainly for irrigation and flood control, but also for providing drinking water. It can store 330,000 CMM of water, produce 1.2 MW of power and irrigate 2,700 hectares of land. Afghanistan also built the Machalghoo Dam on the Kabul River in the Paktia province, which has no transboundary repercussions either. The country has also built three major reservoirs on the Kabul River, intended for hydroelectric power production. These reservoirs include the Naghlu, the Sarobi and the Darunta. The Darunta Dam, near the city of Jalalabad in the east, produces electricity and is used for irrigation.(USAID, 2019 ).

#### **2.10.4 c Dams on Kabul River in Afghanistan side**

##### **The Naghlu Dam**

The Soviet Union financed and supervised the dam's construction between 1960 and 1968. It produces electricity for about 100,000 households. The Naghlu Dam is designed to produce 100 MW of electricity. It is about 110 m (361 ft) tall and 280 m (919 ft) wide, with a storage capacity of 550 million cubic meters. It is located about 40 km from the capital city of Kabul (DBpedia, 2022).

### **The Darunta Dam**

The Darunta Dam is primarily a hydroelectric power dam that was constructed by Russia in 1964, on the Kabul River near the city of Jalalabad, approximately 7 km away from the city. The Darunta Dam is used for irrigation as well. It produces between 40-45 MW of electricity; however, the dam has been damaged by war and was recently renewed (DBpedia, 2022).

### **The Sarobi Dam**

The Sarobi Dam was also constructed on the Kabul River, in the Sarobi district of Kabul. The electricity that Darunta, Naghlu and Sarobi dams generate far behind the demands of the population living along the river basin. Afghanistan therefore contracted with neighboring countries—Uzbekistan, Tajikistan, and Iran—to import electricity. The imported power is transmitted via line across the Hindu Kush Mountains, making them vulnerable to avalanches and other natural disasters. This situation also leaves Afghanistan overly dependent on Central Asian countries who do not have a reliable surplus of electricity.

#### **2.10.4 KUNAR RIVER: A COOPERATIVE PROJECT THAT NEVER MATERIALIZED**

Energy-starved Afghanistan needs the untapped hydroelectric potential of the Kunar River Basin. The Kunar River is one of the main tributaries of the Kabul River. It is 480 km long, and the basin is 10,000 square miles. It is also known as the Mastuj, the Chitral and the Kama River. The melting snow and glaciers of the Hindu Kush Mountains feed this river,

flowing through the mountains of Chitral, Khyber Pakhtunkhwa, downstream to the Lotkhi River of Chitral, to Kunar, Jalalabad and then out to the Kabul River.

The Chitral river enters the upper Kunar valley in Afghanistan and joins the Kabul River, then becomes the Kunar River before flowing back to Pakistan. The Kunar River contributes almost 13 million acre-feet to Pakistan annually. It provides 25% of the water demand of the population of Afghanistan. This river was a primary trade route before the partition of the Chitral Valley and Kunar via the Durand Line. This river has the potential to provide a viable source of energy to both Pakistan and Afghanistan, making socio-economic development possible in the region. Studies conducted on the Kunar River reveal the potential for joint development of infrastructure that could benefit both countries in the short and long terms, due to the topography of the basin and its conduciveness to harmonious transboundary water allocation. Kunar River makes energy generation possible in all seasons without being affected in any significant way (Kunar River, 2020 and Kunar River, 2021).



Figure 12: Photo of Kunar river retrieved on Dec 2020, [derived from https://world.time.com/2012/12/02/what-iran-and-pakistan-want-from-the-afghans-water/](https://world.time.com/2012/12/02/what-iran-and-pakistan-want-from-the-afghans-water/)

Kunar, being a mountainous province with limited land availability for agriculture, could realize its industrial potential through the construction of a Kunar hydroelectric dam. The hydropower project on the Kunar River is part of the joint management of common rivers between Afghanistan and Pakistan. Pakistan's minister of finance Mr. Ishaq Dar discussed about an idea of a joint water dam project with his Afghan counterpart Mr. Hazrat Omar Zakhilwal the former minister of Finance during the period of 2012-2014. The proposed joint project on the Kunar River intends to produce 1,500 MW of electricity (Kinai, 2013). It would pave the way for many investors to contribute to production companies and factories, enabling improved security for the province. Pakistan would benefit from the construction of the Kunar dam on Kunar River on two levels:

It would provide electricity to the area assigned in summer, which is considered the time of peak energy demand.

It would provide irrigation opportunities, flood control and sediment control (Tolo News, 2013, Ghanizada, 2013).

The Kunar River was surveyed during the administration of Sardar Muhammad Daud Khan, the first president of Afghanistan, in office from 1973-1978. The report showed that 1,000 MW of electricity could be generated in the Sara Taq area of the river. India carried out another assessment on Sahir and Shagai, determining a potential generation of 1,000 MW of energy. Unfortunately, Pakistan refuses to cooperate on any dam construction that involves Indian agencies.

Meanwhile, the World Bank conducted several feasibility assessments of the potential hydroelectric dam and decided to finance it however there has not been an approved commitment to finance the project as Afghanistan and Pakistan willingness to work together was a prerequisite. Both countries agreed on this joint water development project in February 2013. A bilateral meeting was held in Islamabad, among the Afghan Finance Minister, Hazrat Omar Zakhilwal, and his Pakistani Counterpart, Ishaq Dar. Both delegations held technical and political forums for exploring collaboration on the Kunar Dam. Both delegations emphasized the need for energy security for socioeconomic growth of the region, and this was a major landmark on the de-escalation of political tensions between the two riparian.

It was believed that this project would enhance trade and cross-boundary relations. In August 2013, both countries signed an agreement on the construction of a hydropower dam

on the Kunar River at \$2.7 billion. This was surprising news to national and international organizations in Afghanistan (Thomas, 2016; Ghanizadah, 2013). Despite the perceived victory, no cooperation happened, the project was halted, and political tensions have been on the rise since then. In the interview with an Afghan Water Scholar the tense bilateral security situation has massive implications on the status of the project. He mentioned that: “The project was halted because Pakistan showed no reduction of violence against Afghans. Border shelling of Kunar’s bordering districts, the killing of innocent people—these things raised more hatred among the communities against Pakistan” (Afghan Water official 2021).

“This project was also halted because of the change of government in Pakistan and varying attitude towards Afghanistan among the water officials. Also, the priority programs of the government of Pakistan shifted toward other projects which required less conflict resolution” (Pakistani water expert, 2021).

The lack of cooperation on the Kunar Dam was criticized by several Afghan officials, many complaining that this strategy is self-harming. Kunar could open an economic opportunity and could contribute towards the overall security in the bordering provinces.

“One of the side effects of the centralization of power in Arg, is that the president's office can control the entire decision-making processes without allowing technical input to a decision. Politicization of water issues without allowing further knowledge and data sharing has proved self-destructive in the case of the Kunar River hydropower dam construction project.”

“Under the rubric of nationalism, political leaders tend to forget that they are harming their own nations by making hasty decisions without considering the repercussions, and the Kunar River is one of those examples.”(Afghan water official, 2021)

Factors Affecting Cooperation and shaping power dynamics between the two countries:

The power dynamics between the riparian in conflict are better understand by unwinding some of the major factors that shapes conflicts and cooperation events which includes geography, socio-political relations, trade, economic conditions and existing mechanism or lack of mechanisms for cooperation. Some of them are explained in detailed in the next following parts:

#### **2.10, 5 POWER ASYMMETRY SHAPING BILATERAL WATER RELATIONS**

Five sources of power shape interaction between riparian states in conflict:

- Geography
- Material Power
- Exploitative Power/ Power to Negotiate
- Discursive Power/ Ideational power

In most of the above power sources, Pakistan’s position over Afghanistan in most leads to a steep power asymmetry curve.

#### **Geography**

Afghanistan and Pakistan share a long border of around 2,430 kilometers (1,510 miles), mostly along the southern and eastern edges of Afghanistan. Various ethnic groups inhabit in both side of the Afghanistan and Pakistan border across the Kabul River and Kunar River. The border between Afghanistan and Pakistan is mostly populated by people from

Pashtun and Baluch ethnic backgrounds. Both countries have Sunni Muslims of the Hanafi schools as a majority, with a sizable minority of Shia Muslims that can both serve as connectors and dividers when it comes to water cooperation. This area is prone to tribal conflict, poverty, and environmental degradation.

In terms of geography as a factor in shaping power dynamics, Pakistan is the upstream of the Chitral River, which contributes water to the Kunar River, ultimately draining to the Kabul River. But Kabul River also is the upstream to the Swat River which flow into Pakistan territory (Shroder and Ahmedzai, 2016). An Afghan minister mentioned that Pakistan can construct water infrastructure unilaterally without considering the needs of Afghanistan, especially with the support of all its regional allies. It is also able to divert the course of the water without consulting Afghanistan, considering the current state of conflict and politically weak central government (Afghan Minister, 2020). Pakistan can maintain security in its territories to a larger extent compared to Afghanistan where the reach of Afghan National Security Forces is limited, which makes the geography more secure and more viable for unilateral investment in its areas using the financial support of countries like China. China has been extensively investing in various mega development projects in Pakistan due to cordial bilateral relations.

Below map highlights the Durand line areas, a historical territorial contested which remained unresolved between Afghanistan and Pakistan.



Figure 13: Map Illustrates Durand line, a contested territory between Afghanistan and Pakistan): [https://ciaotest.cc.columbia.edu/olj/si/si\\_4\\_8/si\\_4\\_8\\_007.pdf](https://ciaotest.cc.columbia.edu/olj/si/si_4_8/si_4_8_007.pdf)

### **Military Power**

Pakistan's direct security intervention in Afghanistan is against international law on sovereign states. However, in the last three decades, Pakistan has extended its full support to the Taliban to fight a proxy war in Afghanistan. The Taliban continues to enjoy a haven, medical treatment, and a space for training to attack the Afghan population and government establishments (The Wire, 2021). According to the Afghanistan National Security Institution, Pakistan has supported the Taliban in targeting Indian engineers and Afghan officials working on the Salma Dam in Western Afghanistan. Pakistan has always remained hostile towards development of the water sector in Afghanistan, especially if it has involved India funding a dam.

Pakistan's support of the Taliban, with shelling and bombing of border areas, Afghanistan blamed Pakistan on having no jurisdiction of those tribal areas where it is happening. Afghan security forces do not consider this a legitimate excuse, and Pakistan is

in fact the 10th most well-armed and well-trained army in the world ( Omar 2021). Pakistan is also more stable and secure than Afghanistan, who is still fighting global terrorism with less training and equipment. Afghan security forces lack logistical support, training, and air support, which has limited their capacity to safeguard the Afghan borders and waters.

### **Material Power**

The economies of both Afghanistan and Pakistan rely heavily on the agricultural sector. In Pakistan, agriculture contributes 22% of Gross Domestic Product (GDP) and employs approximately 35.9% of the working population (Standard Trade Market, 2021). Population growth in Pakistan is a growing challenge, with a population of around 225.1 million as of June 30, 2021. Pakistan comprises 2.85% of the world population, based on Worldmeter's elaboration of the latest United Nations data (Worldmeter, 2021). This makes Pakistan the number five most densely populated country in the world. Urbanization is surging, and 35.1% of the population lives in urban areas (World Population/Pakistan, 2020).

Afghanistan's economy is shaped by post-conflict intervention and relies heavily on aid, and 44% of the total workforce works in agriculture. According to The World Bank Group, around 60% of households derive income from agriculture (The World Bank in Afghanistan, 2020). As of June 2021, Afghanistan's population is estimated to be about 39 millions, which represents 0.5% of the world's population according to Worldmeter, 2021. Yet it is important to bear in mind that Afghanistan has only conducted a population census in 1979 which found to be bias and poorly executed and has never published. (Population Reference Bureau, 2009). Urbanization is growing rapidly in Afghanistan, with 25.4% of

the population currently living in urban areas. Despite being 80% dependent on agriculture, Afghanistan has only invested 5% of development funding into the water sector (Hessami, 2018).

Pakistan's GDP is around US dollar 1,260.01 per capita in 2020 (Pakistan Statistics and Facts, 2021) compared to Afghanistan at 581 U.S dollars per capita in 2020 (Ziyi and Xionan, 2021). This indicates a great variance in poverty and economic development. Afghanistan still relies heavily on foreign aid and support from its neighbors, with many Afghans seeking refuge each year. Many Afghans travel to Pakistan for medical treatment and for education. Several Afghan businesses operate in Pakistan due to ongoing instability back home. Afghanistan simply lacks the financial resources to invest in its own water development.

Pakistan, with the help of the World Bank, has begun construction of the Dasu Dam and several other development projects inside its territory. Pakistan enjoys greater support from international organizations and bilateral support from countries like China. Pakistan is also ahead in terms of modern technology for irrigation, construction, and maintenance of its national assets.

However, Afghanistan is heavily reliant on foreign aid for all its emergency and development projects. The country GDP is 508.81 USD (2020) and with the growing insecurity and lack of investment in the long-term growth, prospect for financial investment in Afghanistan's water infrastructure on the Kabul River is slim. Afghanistan has constructed majority of dams on Kabul River with external financing—the project of Shah wa Arus dam was largely made possible by India's initial investment Afghanistan economy

is one of the least developed and persistent periods of lack of stable government and widespread conflict have impeded state capacity to invest in the development of the sector.

#### **2.10.6.b Discursive Power**

Pakistan, compared to Afghanistan, has been less politically stable, the country has always swung between martial law and democratic order (International Crisis Group, 2007). Overall, the education institutions, the military and government-owned think tanks are of higher quality and train well-known academics and scholars in the field of water conflict and diplomacy. There are several institutions and academic programs allocated to water studies and water diplomacy some of them are Center of Excellence in Water Resources Engineering, UET, Lahore, Water Resources Management Center, Faisalabad, Center for Studies in science policy and several water experts teaching in the world-renowned universities.

Furthermore, Pakistan's civil society and media have more outreach and have consistently worked at a grassroots level on shaping the national discourse on issues affecting Pakistan's national interests. This gives Pakistan an advantage in shaping the narrative around water in the region. In the interview with a Pakistani Scholar on Water management, she mentioned the obstacles in Pakistan using its role for cooperative water management.

“Pakistan's role is critical in shaping the discursive or ideational power that ends in favor of development of the region, however, because of the colonial approach of Pakistan towards Afghanistan, the prospect for Pakistan to develop a narrative of cooperation remains grim.” (Pakistan water expert, 2019)

### **2.10.6. c Power to negotiate/Bargaining Power**

Pakistan's position to negotiate remains much higher than Afghanistan's in water cooperation framework. Pakistan has effectively negotiated with rival India on the Indus River Basin. It has drafted, implemented and has been monitoring Indus Water treaty for more than half a century. Pakistani officials understand the political, legal, and technical knowledge required to negotiate effectively. Furthermore, Pakistani institutions compare to Afghanistan have been providing more trainings to their water experts in the legal and technical aspects of negotiation.

Pakistan has also generated ample data on its rivers and can better bargain with a scientific basis for its arguments. Pakistan clearly has every ability to negotiate with Afghanistan, but it has used its bargaining power unilaterally without thoughtful consideration to Afghanistan or to regional and transboundary development. Afghanistan's lack of trained diplomats, well-versed in water negotiations, along with its lack of data, has prevented sufficient action on the part of this more vulnerable riparian (Thomas, 2014).

According to an Afghan diplomat working on water portfolio, Afghans require more protection and guarantee to negotiate with officials from neighboring states. In the interview he mentions that:

“Afghan readiness to effectively negotiate water rights seems out of reach with the current lack of data and qualified representatives.”

“Water negotiators should have complete support from the central government. We cannot negotiate with a party who can manipulate us through its data and threaten the safety and security of our families.” (Afghan Diplomat, 2020)

## **2.10.7 FACTORS AFFECTING COOPERATION.**

### **2.10.7 a Geo-politics**

Historically, any cooperation between the two countries is highly affected by the socio-political dynamics and water relations is not separate from it. The relationship between Afghanistan and Pakistan has been filled with distrust and tension since the inception of Pakistan. The ambience of skepticism is rooted in the emergence of Pakistan in 1947. Afghanistan was amongst very few countries that objected to Pakistan's admission to the United Nations. The Afghan government's decision not to recognize Pakistan as the inheritor of the territorial agreement reached with British India was the underlying reason behind the two countries' conflict. Their relationship is complicated and unpredictable because of the contested borders which are a legacy of British colonialism. In the late 1800s, continued expansion of the Czarist empire of Russia to Central Asian countries got the attention of the British empire. The British sent a delegation led by Diplomat Sir Mortimer Durand to Afghanistan in 1893 where he negotiated an agreement to delineate the border between Afghanistan and British India (Hanasz, 2011).

The Durand line divided the Pashtuns and Pashtuns' tribal land into two separate parts. Some Pashtuns remained in Afghanistan, and some have become part of so-called British India. Pashtuns live on both sides of the line and share commonalities in culture, language, and traditions. Pashtuns form 15.4% of Pakistan's total population (The World Atlas, 2019).

Upon the British empire's renouncement of India, the Afghan government put forward a request for revision of the Durand's Agreement. Afghanistan's request was denied, as

Pakistan joined the United Nations in 1947. The legacy of the British empire and the so-called Great Game between Russia and Britain still overshadow the border relationship between Afghanistan and Pakistan. Afghan governments have never fully recognized the border line between the two countries, though it is an internationally accepted border. Even the Taliban that are known as Pakistan-backed regime in Kabul, recently disturbed Pakistan's endeavors to install barriers in the border and construct border police tower point.

Both countries accuse each other of exercising interference in domestic matters. From Pakistan's perspective, Afghanistan, with the support of India, funds Baluch and Pashtun independence movements and nationalists in Pakistan. The government of Pakistan believes that the Afghan government supported Pashtun nationalists and Baluch from 1947 to 1973, promoting the agenda of unifying Pashtuns, and calling for an independent Pashtunistan carved out of Pakistan. Kaura states that, with such ideas, Kabul looks geographically ambitious, but strategically unrealistic (Kaura, 2017). One of the senior officials mentioned in the interview about the interlink between the Pakistan's territorial ambitions and water cooperation between the two countries. He said,

“The Afghans' territorial ambition came with a cost and had blowback in the form of Pakistan's support to the Afghan Islamist groups in exile. During the cold war era and the Soviet Union's invasion of Afghanistan, Pakistan's policy was to strengthen ties and empower Islamists in exile in Pakistan and utilize them to influence the government in Kabul. The Soviet Union's invasion of Afghanistan provided the venue for Pakistan to help America with a proxy war with the Soviets. The Soviet invasion of Afghanistan not only

helped Pakistan to define a profound relationship with the U.S., but also offered leverage to Pakistan in Afghanistan's internal affairs.”

“Pakistan's Inter-Services Intelligence Agency (ISI), with funding from the Central Intelligence Agency (CIA), supported many Afghan freedom fighters, especially in the Pashtun tribal areas. Ever since, the military in Pakistan has constantly endeavored to promote the idea of a client government in Afghanistan, in the favor of Pakistan's national interests.” (Afghan Minister, 2020)

From the Afghan government's perspective, Pakistan considers Afghanistan its 'strategic depth.' If Pakistan is being attacked by its rival, India, they use Afghanistan's territory as territorial back up. The fall of the Soviet-backed communist Najibullah's regime in 1992, followed by civil war, provided the opportunity for the rise of the Taliban in 1996. From the perspective of the Afghan people, the Taliban would not have been able to occupy Afghanistan without the generous financial, military, and diplomatic patronage of Pakistan. As stated earlier, none of the governments in Afghanistan recognized the Durand Line as the official border between the two countries. Even though Pakistan fully backed the Taliban, they also refused to recognize the Durand Line as the official border between Afghanistan and Pakistan. It is worth mentioning that during Taliban dominance in Afghanistan between 1995-2001, only Pakistan, Saudi Arabia and the United Arab Emirates officially recognized the Taliban as the rulers of Afghanistan.

From the perspective of Pakistan and the international community, the Durand Line is a legitimate border for Pakistan as a successor of British India. Afghanistan's insistence on open border policy is further considered to exercise leverage on Pashtuns in Pakistan, and

it is seen as a territorial threat for Pakistan. Pakistan lost what is now known as Bangladesh to Bengali nationalists with Indian's support in a 1971 liberation war. Afghanistan and India's friendly relationship and the Pashtuns on both sides of the Durand line reminds Pakistan of the chaotic scenario of Bengal. Any nationalist movement in the Durand Line is considered a direct threat to Pakistan. Pakistan further invested and relied on mobilizing the Taliban using religion rather than ethnicity. The senior Afghan water official mentioned the willingness of the Afghan government in 70s to established harmonial bilateral political relations. He mentioned,

“Although Sardar Daud Khan tried to make friendly gestures in the late 1970s, his government's life was not long enough to turn the overture into a full-fledged reality. Daud's government was forced out because of a communist coup in 1978.”

Recent Afghan presidents Karzai and Ghani also tried to build a friendly relationship with Pakistan, but the two countries still have a hostile relationship. According to the one of the senior government officials from National Security Council of Afghanistan,

“President Karzai paid several visits to Islamabad to soften the bilateral relations and ensure cooperation on several development projects. However, the strategic focus on expansion of hegemony by Pakistan caused so much human and financial loss for both nations.”

“Apparently, the unresolved Durand line issue continues to degrade the relationship and affect every aspect of bilateral and regional cooperation, including transboundary water. This matter has further politicized the cooperation and allowed every excuse for Pakistan

to continue its support of Taliban insurgency in Afghanistan. (Senior Afghan official, 2019)

The political tensions between the two countries, the contested borders, and the historically persistent mistrust, all make the prospect of a water agreement seem grim. Afghanistan does not want to identify an entry point for the Kabul River into Pakistan's territory, because that would be an official recognition of the Durand Line, which the country's government is not ready to offer. The two countries also experience tensions over an asymmetry in technological and scientific capacity. Lack of knowledge and information deficit is a problem not only between countries but even within each one, though Pakistan is in a much better condition, yet it also require more credible information (Salem and Zia, 2016).

The media in Pakistan propagates the belief that Afghanistan, with India's support, plans to build twelve hydropower projects that would generate 1,177 MW of electricity from the dams of the Kabul River. To achieve this, Afghanistan would store 4.7 MAF of water, which would be taken mostly from the flow of the Kabul River, potentially affecting Pakistan's water availability (Ramachndran, 2018). However, according to some Afghan transboundary water experts, Pakistan is more concerned about the increasingly friendly relationship between Afghanistan and India—the Kabul River's contribution to Pakistan is quite small (Fahim, 2016).

Afghan politician in the interview mentioned that lack of political willingness by major donor countries is an obstacle in developing long-term water projects. He mentioned,

“Afghanistan is lagging in developing its water resources because the major powers, such as the United States, lack any plan to invest in the long-term development programs in the water sector of Afghanistan. On the other hand, China and Russia consider Afghanistan to be an area under the influence of the United States, so they refrain from any strategic investment as well.” (Afghanistan Parliament member, 2019).

Despite the above statements from the Afghan senior officials about the historical grievances. The bilateral political situation is much more complexed and multilayer which involved the regional geo-politics, the water on Terror and global powers conflicting interests that leaves sharp imprint in bolstering genuine cooperation between the two countries.

#### **2.10.7. b Lack of Shared Knowledge Impedes Cooperation**

The current lack of data and regionally specific prediction of water use has created a further lack of cooperation. The situation is better in Pakistan due to years of stability, and to institutions assigned to the study of hydrology and meteorology. A lack of data is a leading reason for a lack of preparedness for negotiation for Afghanistan. Gathering data and sharing information is limited by border insecurity. These remote areas are usually outside of government control, leaving rogue elements to propagate. Current, reliable data sharing would help both countries to make beneficial decisions for the entire region, rather than working unilaterally. Each country must refine its understanding of annual water needs, better understand glacial melting, seasonal water flow, climate change, temperature, humidity, forestation, deforestation, land use, demographic changes, and how all of these elements affect water management in the region.

### **2.10.7.c Lack of Readiness for Negotiation**

There are currently no transboundary water treaties active between the two countries. The lack of treaty is due to border conflict established by the Colonial British. During the year 2010, Pakistan initiated a bilateral water treaty, which Afghan senior water officials rejected, saying it was against the national interests of Afghanistan. The need for such a treaty, however, is paramount in lowering the environment of fear and suspicion in Pakistan, in response to the development of water infrastructure on the Kabul River. Afghan diplomats have been reluctant to negotiate water rights, despite the efforts such as cross-border dialogue on water made by Pakistani officials, USAID, and the World Bank. These donors were willing to support feasibility assessments. As stated earlier, though, the impact of Afghanistan's water projects on downstream Pakistan have not been well studied, and disagreement over new development is shaped in an atmosphere of misinformation. According to an internal World Bank-funded study, six of Afghanistan's main projects on the Kabul River Basin would reduce water flow to Pakistan by three percent. The other six projects would have little to no impact (Thomas, 2014).

Furthermore, the dams could provide electricity to Pakistan. Despite that the World Bank study highlighted those six projects could be completed without affecting Pakistan, Afghan officials cannot cooperate well enough to accomplish anything meaningful (Thomas, 2014). Some Afghan transboundary scholars believe that Pakistan has over-utilized water from the Kabul River and carried out unilateral water development strategies by building several storage dams on the Chitral River. While Afghanistan was crippled by war, Pakistan carried out construction projects without even notifying their neighbor, and

without sharing any information about its potential impacts. The Warsak Dam in Pakistan has negatively impacted water in the Kunar River which flows to Afghanistan, at least according to Afghan scholars (Majidyar, 2018.). The Warsak dam is located on the Kabul river in Peshawar valley, 20 Km northeast of Peshawar city, the dam was built in the 1960s. (Wikipedia). Afghanistan must overcome its fear of water dialogue and work toward the development of water treaties with neighboring countries (Thomas, 2014.).

#### **2.10.7. d Corruption and Lack of Water Governance**

Both countries suffer widespread corruption, lack of inclusive and democratic institutions, inadequate human resources, weak governances, and unreliable data. According to a recent corruption perception index, Afghanistan in 2020 stands at 165/180. Pakistan is a little better at 124/180 (Transparency International, 2021). Afghanistan conducted about 604 transboundary water related studies and research from 1996-2014, among the lowest in the region. Pakistan is in a better position at about 78,219, but compared to Iran at about 278,388, both countries still have work to do in terms of obtaining useful data (SCImago Journal, 2016). Corruption eats away at the newly established government structures. The patronage and clientelism system, which is a main attribute of the post-conflict economic system, prevents any major investment in the field of water diplomacy.

Corruption in the government of Afghanistan prevents the true water experts to resume technical positions. Ministers assign inexperienced and incapable officials into the position of authority lacking political will to bolster cooperation between the countries. Lack of mismanagement of international funding also postponed cooperation events between the

countries. Both technical cooperation and diplomatic relations require professional trained negotiators and water sector experts. However, the government leadership in Afghanistan paid less attention to recruit the experts but have appointed officials based on political loyalties which ultimately damaged the reputation and effectiveness of the water institutions and projects. The government also failed to raise funds for joint initiatives from the donor agencies which created frustrations on donor's part.

#### **2.10.7. e Terrorism and Instability**

Insecurity in Afghanistan is another key reason for lack of investment in the development sector. According to Ziyi and Xionan, by 2021, total military spending is \$300 million. Big donors and multinational companies usually refrain from investment in Afghanistan due to the continuous threat of terrorist groups, such as the Taliban, the Islamic Movement of Uzbekistan and others operating freely in Afghanistan. These groups continue to jeopardize reconstruction and development efforts. Despite the military presence of more than forty-five countries under NATO and other multilateral mechanisms, Afghanistan remains one of the most insecure countries in the world. Long-term development and economic growth have been halted for more immediate needs like delivering humanitarian support.

The Afghan government lacks the support to protect investments, especially in remote areas lacking a government presence altogether, and it is challenging to provide the required logistical and emergency support accordingly. The government and international organizations refrain from sending staff for implementation and monitoring of the humanitarian and development programs. Water flowing down to Iran and Pakistan from Afghanistan falls into restive areas which are highly unstable and lack proper government

presence. This is especially true in the areas across the Kabul River. Data generation and research is difficult and risky to conduct in these areas because of the large tribal presence. More and more villages are falling into the hands of the Taliban, and Afghan Security and Defense forces continue to recapture the districts and villages.

Approached to counter power asymmetry in water relations:

#### **2.10.8 MITIGATING POWER ASYMMETRY:**

Afghanistan can use several options to mitigate the power asymmetry which requires a thorough analysis of the power dynamics, the limitations the country has both in terms of its human and material resources and political will from its leaders. Meanwhile, the power of knowledge is key in understanding the current power dynamic and the avenues for influence with neighboring states. Robust and complex capacity building is critical to empowering Afghan officials, politicians, and communities to negotiate with Pakistan.

Several capacity building programs implemented by the international stakeholders have played a key role to enhance the capacity of the water experts in Afghanistan and the region. However, more support should be targeted on understanding the current water needs, supply, physical structures, and water quality in the shared rivers basins. These capacity building programs could allow the proper assessment, monitoring and management of water resources. Afghanistan is in dire need of a water laboratory to conduct scientific studies on water quality and quantity, for both ground and surface water, including information on flood prediction. A water database could help all stakeholders to clearly understand future needs and current water status. The government of Afghanistan carries the responsibility of raising awareness about the socioeconomic, environmental,

and legal aspects of water negotiation with Pakistan. As per interview with the international water expert:

“One of the main responsibilities of Afghan water officials and senior diplomats and politicians is to do their homework in a diligent manner, not relying so much on the international community for resolving or mitigating power asymmetry. Organizations have their own limitations and mandates. Afghans should ensure that the true champions and experts of transboundary water management are part of the process. Relying on the inexperienced, the corrupt officials, the ethnocentric appointments—this can further damage the process of well-informed and long-term cooperation between riparian states.”

“Afghanistan should bring transboundary water management to the center of its national priority programs, not just in papers, but also in designing strategic achievable plans and goals. Investment of national financial resources in this sector is pivotal in balancing the playing field with the stronger riparian.” (International water expert, 2020)

Respondents also argue that Afghanistan is unable to compete with Pakistan in terms of financial and military power. Afghanistan has every ability, however, to enhance discursive power and highlight the concerns of living in a post-conflict development era, including poverty and a dependence on water for livelihood. In an interview with the international water expert:

“Afghanistan should be provided with a grace period to catch up on water development plans which were never materialized, due to years of conflicts and turmoil. The repair of destroyed infrastructure requires time, and this need of Afghanistan should be respected by the stronger riparian states.” (International water expert, 2021).

Some participants believe that Afghanistan should not compromise on any opportunity for the development of its water resources just to keep Pakistan happy. They maintain that if India or any other bilateral donor is ready to invest in this sector, those avenues should be fully explored. International water expert in the interview mentioned:

“Afghanistan should take advantage of the presence of multilateral and bilateral donors, and it should utilize the full potential of its water resources. Now, Afghanistan is exercising caution not to upset the stronger riparian states, but the stronger riparian never takes into consideration the needs of Afghans. Reciprocity can be a pressure point to ensure cooperation from Pakistan. “(International water expert, 2021).

Power mitigation requires wholistic approaches by political, legal, and social sectors to move the more powerful country to be ready to cooperate on equal level. This requires strategic thinking and planning without resorting to blame game and taking no responsibility to change the status quo. Afghanistan needs to invest more in creating solidary and cohesion among its own internal actors and mobilize resources for developing its water resources in a more strategic manner. It is then the neighboring can better engage is a serious manner.

### **2.10.8 a Depoliticization of Water Issues**

Water conflicts are technical in nature, but political issues make it multilayered and complex. Therefore, riparian states in conflict should tend to separate, depoliticize and de-securitize water interactions. Afghanistan should focus on separating the political issues with Pakistan from water negotiation and cooperation. The animosity and anger have only caused immense losses in the management of Afghanistan’s water resources. A team of

technical staff, with politicians who believe in institutional building and cooperation, should be trained, and equipped to conduct negotiations with Pakistan. Afghanistan should also drop the unilateral resource capture mindset, as this approach delays cooperation and breeds divisiveness. On the other hand, inside the Afghan government, a unified voice must be used to speak to neighboring states. The stronger the internal cohesion among Afghan stakeholders, the better the chances of achieving fair and equitable water cooperation.

Years of protracted conflicts and geo-political tensions have impeded Afghanistan from developing its water resources. This situation should not, however, prevent Afghanistan from developing its water resources, sanctioned by international law. Afghans must push for the inclusion of international entities to assist with fair solutions to conflict resolution. Focusing on the legal aspect of transboundary waters, as well as technical solutions, could lessen the power asymmetry between Afghanistan and Pakistan. The presence of a third party could equalize negotiation power. Afghanistan must keep an open mind to programs offered by the World Bank, USAID, the EU, and other donors. In an interview with a professor from Kabul University mentioned:

“Politicians in both countries have relied on past grievances to shape the narrative of water management issues—the politicians use water management between countries to pursue their political agendas. This epic nationalism has overshadowed any scientific and technical cooperation over waters for almost all of history.” ( Professor Kabul University, 2020)

Therefore, countries should treat water issues more from long-term development of shared basins lenses to ensure that technical, environmental, and social aspects receive attention

that political issue. Without a clear path to collaboration and functioning frameworks it is hard to expect any development soon.

#### **2.10.8.b Explore avenues for collaboration:**

The key step for Afghanistan and Pakistan is to enhance platforms for information sharing, problem-solving and meaningful coordination of efforts across the shared basins. This approach will enhance goodwill between the countries and prevent unnecessary conflicts. Senior water officials from both countries should steer the water discourse away from political upheavals and focus all parties' energies to collaborate and cooperate on environmental consequences of lack of cooperation. In most of the bilateral and multilateral regional mechanisms including SAARC, Heart of Asia and others senior officials from both countries indulge in blame games and miss the opportunity to discuss the pros and cons of cooperation. Therefore, it is notable for international partners to prepare the parties to pursue less confrontational according to international water law, is a sovereign state and has rights to develop its water resources so long as it is not causing any significant harm to other riparian states.

However, in the absence of water treaties, such investments will always be perceived as a sign of threat by the other riparian states. Afghanistan also lacks security, stability, technical knowledge, and the timely support for its national water sector. Furthermore, the Taliban is seen as Pakistan's proxy element in Afghanistan, and unless the Taliban joins the peace process, the prospect for future cooperation remains highly restrictive. Under such a situation hydro-diplomacy remain highly challenging, unless countries agree on

mutual benefit-sharing even the role of third party to bolster cooperation remain questionable.

#### **2.10.8.c Afghanistan should push Pakistan to Focus on shared initiatives:**

Interview participants argue that technology can play a pivotal role in generating reliable information and move the parties to look beyond zero-sum game. Regional cooperation mechanism that includes technical cooperation could further pave the way for de-escalation of hostilities and rivalry between Afghanistan and Pakistan. Capacity building projects, joint data generation and information sharing are considered pivotal in enhancing trust and confidence between the riparian in conflict. Capacity building is critical if the countries are to engage the emerging environmental realities. Currently the knowledge deficit is large among riparian officials. According to an international water expert, availability of shared data can bolster trust and cooperation between the riparian states. He mentioned,

“Data can ensure accountability and transparency, limit the blame game and ensure effective and efficient decision making.” (International water expert, 2020)

Joint data gathering could boost environmental disaster preparedness and raise awareness about droughts and floods. This data could create a sense of ownership among the parties, at which point it may be more likely that they allocate sufficient resources, develop programs, and generate the needed data. Parties who agree on shared data can easily avoid delays in negotiations and can make decisions efficiently. Scientific diplomacy will be key in the mitigation of conflict and the nurturance of cooperation and transparency. One of the water experts covering Afghanistan Pakistan water relations elaborated the need for

scientific study of water consumption in future to better understand the needs of each riparian. He suggested that,

“The other major step is to study the actual consumption of water in the Kabul River, in both Afghanistan and Pakistan. This should include both surface water and groundwater. Also in need of assessment is future demand for hydroelectric generation, irrigation, tourism, and other economic development purposes. This requires a well-planned monitoring program that provides timely and accurate data.” (International water expert, 2020)

#### **2.10.8. d Increasing cooperation on Trade and Business**

Each country is the largest trade partner of the others. Pakistan’s exports to Afghanistan are about 833.42 million US dollar as of June 2020 according to the United Nations COMTRADE database visited in March 2022. Even though Pakistan is the largest export market for Afghanistan, yet Afghanistan’s exports to Pakistan are low compared to imports from Pakistan, therefore the trade deficit has been widening since 2006 onwards. Afghanistan is dependent on Pakistan’s seaports as a landlocked country (Trading Economics, 2021).

Afghanistan and Pakistan signed the Afghanistan and Pakistan Transit Trade Agreement (APTTA) in 1965 (Peace Brief, 121, 2021). The agreement was redesigned in 2010 to allow Afghanistan to import goods for free through the Pakistani port of Karachi, on the Arabian sea. However, these agreements have never been fully and reasonably reinforced in practice because of political tension and a sense of resentment on both sides. There have been numerous closures of legal trade and transit that negatively impacted people on both

sides. Despite the challenges on the ground, Pakistan is still one of the largest exporters to Afghanistan.

Both countries initiated large scale regional infrastructure projects that aimed to enhance regional cooperation, such as CASA 1000, which facilitates hydroelectric transfer from Tajikistan and Kyrgyzstan to Pakistan, through Afghanistan (USAID, Fact Sheet, 2021). Both countries are also part of another regional project that aims at enhancing regional cooperation. TAPI—Turkmenistan, Afghanistan, Pakistan, and India—is a natural gas pipeline project that will connect cross-border infrastructure (Hydrocarbon, 2021).

Pakistan is threatened, however, by India's role as the fifth largest bilateral donor to Afghanistan (Freidrich Ebert Stiftung: 2021). Pakistan and India have a hostile relationship over Kashmir. Since 2001, the distribution of India's projects demonstrates a pattern of implementing high-visibility, large-scale projects, especially in the water sector, in relatively stable areas. India's investment in Afghanistan's infrastructure, especially in water resources, scares other riparian states.

Economic cooperation between the two countries is not only beneficial for them but also for sustainable peace and development of the region. Pakistan needs the attractive market of Central Asia which is reachable through Afghanistan as much as Afghanistan needs to access to Pakistan's seaport to trade with South Asia, middle east, and Europe. One of the research participants from the Afghan diplomats mentioned that the Chahbahar port, a trade hub, which is planned to be constructed in Iran will provide further access to Afghanistan to import and export goods. This development is considered as threat to the existing trade

dependency of Afghanistan on Pakistan. In the interview the senior Afghan water expert elaborated that:

“The Afghan government in recent years signed an agreement with the government of Iran to access the Chabahar Port, to reduce economic dependency on Pakistan. This port connects Afghanistan and India through Iran and facilitates trade between the two countries. This could further boost the bilateral relations between India-Afghanistan and Iran, which is perceived as a threat by Pakistan.” (Senior Water Expert, 2020)

Considering the above analysis of the bilateral power dynamics between the two countries, the impact on water relations is hard to dismiss. Throughout this research the bilateral factors have been raised by many of the participants as major obstacles in shaping water relations between the two countries. In the next part of this study the events of conflict and cooperation on shared water basins between the two countries are outlined with the lens on the above-mentioned power dynamics.

#### **2.10.8.e Trust-Building through Engagement of Civil Society, Communities and Non-State Entities**

Trust building is paramount to the establishment of cooperation on transboundary waters between Afghanistan and Pakistan. Afghanistan currently perceives Pakistan as a major cause of violence and destruction in Afghanistan, and prospects for cooperation remain grim. This animosity is more visible at the state level, however some elements of civil society have shown agreement to work collaboratively on several bilateral platforms regarding water and other regional issues, one of such initiative was facilitated by Henrich Boll Foundation and the other is a track 2 initiative between Afghanistan and Pakistan

conducted by Duran Research and Assessment Firm (both countries share ethnic, lingual, tribal and religious commonalities, and there are many marriages between Afghans and Pakistanis, with many Afghan families living in Pakistan. Mobilization of communities and seeking engagement opportunities for civil society could further boost the environment of trust and confidence building between the states. A research director from water institution in Afghanistan mentioned:

“Both Pakistan’s and Afghanistan’s civil societies operate under a relatively open form of government. They have collaborated and cooperated with each other on water and non-water related issues over the last twenty years. States have been entangled in toxic political differences and have sacrificed the development of resources needed for the wellbeing of the people. Civil society must take the lead in enhancing robust public diplomacy to open the venues for cooperation.”( Afghan water researcher, 2020).

Civil society organizations understand the cost of suboptimal cooperation on the people. Afghanistan has achieved a reputable position among the regional countries in terms of freedom of speech. Tens of media outlets—TV stations, radio stations and newspapers—have contributed to raising awareness in the aftermath of US intervention in Afghanistan. These outlets provide a sound avenue for de-escalation of conflict between the countries, raising awareness on joint action to protect the environment along the Kabul and Kunar Rivers. This is vital to cooperation in joint development, and to building a safe and clean environment along the rivers. Communities could promote youth volunteers to safeguard the river sites from contamination. In countries like Afghanistan and Pakistan, where youth lack avenues to engage constructively, cleaning and protecting the rivers could

offer a useful outlet. Elders and influential in the area could contribute to awareness in mosques and shura of the importance of cooperation, conflict mitigation and promoting a healthy ecosystem around the Kabul and Kunar River Basins.

#### **2.10.8 e Afghanistan should Focus on Benefit-Sharing**

In the absence of proper data and benefit allocation, riparian states tend to see little reason to cooperate. Reviewing several research reports including the one conducted by Central Asian Journal of Water Research (CAJWR) about benefit sharing framework for transboundary water, it is obvious that studies conducted to date are lacking field-based research at large scale which requires financial and technical support of multi-lateral funding agencies like the World Bank Group. Meanwhile, insecurity in the Kabul river basin is an important barrier to conduct field assessment. Further studies on benefit-sharing are needed especially on ground research of the Kabul River basin in order to enhance the level of understanding of the cost of non-cooperation. Benefits could be assessed by riparian states in conflict or by third-party mediators, mutually trusted by the parties in question.

The World Bank and the Asian Development bank and other international development agencies have performed research and those studies needs to be used by the policy makers in these countries for better understanding of benefit-sharing. In the absence of joint discussion of benefit-sharing, parties tend to delay cooperation without understanding the repercussions. Afghanistan is reluctant to accept the data from other riparian states due to years of inequity and lack of its own water resources. Third parties could smooth out relations by presenting an objective and data-driven view on water cooperation.

Furthermore, third parties' intervention could also consider the complex political tensions between the countries and draft strategies. They could expand opportunities and create additional incentives for cooperation. The full implementation of cooperative agreements, however, requires political will, structures, and resources. Afghanistan was less prepared to take the advantage of the presence of the international attentions and resources available for water sector development. The role of the third party also became less important because of the high level of political tension between the riparian states.

“Academics, civil society members and community leaders all have a common vision of benefit-sharing from the shared rivers. They know the cost of non-cooperation and that communities have lived throughout history by relying on the traditional mechanisms of resolving conflicts on river basins across the borders. Therefore, the mentioned groups, with the support of organizations such as the World Bank, could design programs that further highlight the importance of derivable benefits from water cooperation.”

#### Afghanistan's Reliance on India for the Construction of Dams

Respondents interviewed for this research state that Afghanistan should adopt approaches that depoliticize and de-securitize transboundary water relations. The first step is to seek funding for the construction of infrastructure on the Kabul River Basin from bilateral and multilateral donors other than India. India's involvement in the Kabul River is perceived by some as a hegemonic approach to gain influence over the waters of the region, and, considering the hostile political relations between the countries, avoiding India's contributions could serve as a conflict prevention approach.

An international water expert stated, “Afghanistan is in a dire economic condition—people are constantly seeking refuge, jeopardizing their lives, all to obtain better economic and security conditions. Afghanistan has no option other than relying on any potential donors who support the development of its water infrastructure. Afghan neighbors must understand the critical need of Afghanistan to develop its water infrastructure and avoid making it a political issue.”

**CONCLUSION:**

As part of the Afghanistan National Priority Programs 2011-2015, the country plans to enhance its infrastructure and better utilize its water resources. Pakistan has already built the 250 MW Warsak Dam on the Kabul River in Pakistan. Afghanistan plans to increase its water storage capacity and add it to reservoirs, but the way Pakistani media presents dam expansion in Afghanistan is important to the realization of this goal. Over the last two decades, only two dams have been constructed, which have no transboundary repercussions on Pakistan. Afghanistan’s lack of engagement in bilateral water dialogues, and its lack of consistent efforts to develop water data, has wasted considerable time and many opportunities to improve peoples’ lives. For better cooperation with Pakistan, Afghanistan must focus on attracting international donors to support data generation and capacity building. Qualified water officials are needed to work toward the unified goal of cross-boundary water security and cooperation.

Regional cooperation is pivotal in resolving conflict over shared water resources. The water narrative must refrain from narrow water security perceptions—it must include stakeholders in the decision-making process to share diverse input and propose holistic,

long-term solutions. Regional institutions such as The South Asian Association for Regional Cooperation (SAARC), Economic Cooperation Organization (ECO), Heart of Asia and Organization for Security and Cooperation in Europe (OSCE) could all concentrate on transboundary water cooperation and enhance regional financial and technical support toward the development of bilateral treaties and cooperation frameworks. They must keep in view the current asymmetry of power, capacity inequity, and the general lack of support. A treaty of any kind must be based on the needs of the current riparian states, the levels of poverty, and the dependence of communities on water resources for economic development. The provision of equitable use, with no harm to any riparian, must be implemented as a key component of cooperation.

Pakistan must demonstrate an ability to lead rather than to coerce—to support rather than to foster dependency. Both countries must adhere to the principles of fairness expressed under the International Water Law. The Kabul River cooperation must be depoliticized from the grievances of the past, and it must focus on technical and socio-economic development. Countries must join to compile hydrological data, transparently and fairly. Joint research could help enhance trust, as could more informal platforms. Volunteers and champions from community groups could aid in the depoliticization of transboundary water management for enhanced cooperation on water and non-water regional issues. The youth in both countries have demonstrated promise in proposing win-win approaches that ensure sustainable cooperation.

The following sections will explore the role of power asymmetry in case of Afghanistan and its riparian states, Tajikistan, Uzbekistan, and Turkmenistan- the Central Asian

Republic countries. The mode of interaction is less confrontational as Afghanistan has not yet initiated any kind of development in Amu Darya, and Afghanistan also support one of the riparian Tajikistan in its water relations with Uzbekistan. The power dynamics in this river basin is more in favor of Afghanistan but since Afghanistan is excluded from the framework of water cooperation in Amu Darya, there has not been any significant incidents of conflicts. However, lack of presence from the Mechanism of Amu Darya leaves Afghanistan isolated and less benefiting from discussions on the overall development of the Amu Darya Basin.

## **2.11. PART III: THE AMU DARYA RIVER BASIN:**

### **2.11.1 INTRODUCTION:**

The Amu Darya Basin is one of five main river basins in Afghanistan, together with the Kabul or Indus River Basin, the Helmand River Basin, and the Harirud-Murghab River Basin. The Amu Darya is an essential part of the Aral Sea Basin and is crucial to the livelihoods of some 43 million people in the Aral Sea Basin. (King and Sturtewagen, 2010). The word “Darya” means sea in Farsi; however, in Afghanistan, people use Darya as a substitute for river. The Amu Darya originates and flows from high glaciers of the Hindu Kush and Wakhan River in the Pamir Highlands in Afghanistan, and Kyrgyzstan. (Ahmad and Wasiq, 2004). The Amu Darya is also called the Oxus and is identified as the longest river in Central Asia. In the upper north Amu Darya connects Afghanistan, Tajikistan, Uzbekistan, and Turkmenistan. Amu Darya provides a vivid case of power disparity and hydro-hegemony as it involves riparian states with varying degrees of political, economic and social powers. These states collaborate and compete over the resources, especially when it comes to water resources.

Water resources are not equally distributed in this Basin, countries are without proper legal frameworks to ensure prevention and mitigation of conflict when it emerges. Riparian states highly rely on agriculture and hydropower on this river basin and lack of enhanced legal and operational frameworks further complicates the relationship. Despite water specific conflicts, border tensions, political issues and crimes further complicates water

relations between the riparian states. Afghanistan bears the high toll of such a tense relation due to its weaker position compared to its neighbors.

Below map 6 presents the Amu Darya and its tributaries. Map is retrieved from website of the Research Gate website.



Figure 14: Map presents Amu Darya and its tributaries: derived from [https://www.researchgate.net/figure/Amu-Darya-Basin-Central-Asia\\_fig1\\_278148552](https://www.researchgate.net/figure/Amu-Darya-Basin-Central-Asia_fig1_278148552)

### 2.11.2 Main tributes to the Amu Darya

As depicted on the map above, the main water sources flowing into the Amu Darya include the Aksu, Vakhsh, Wakhan River and the Pamir River from Glaciers in Hindu Kush in Tajikistan and Afghanistan. These rivers are confluent on the upper parts of the Amu Darya

and together they are known as the Panj River. The other main tributary of the Amu Darya includes the Vakhsh River which originates and flows from the Alai in Kyrgyzstan, and subsequently joins the Panj River (Kamil, 2021). In addition to the above-mentioned key tributaries of the Amu Darya, a few other rivers also flow into the Amu Darya along the way which includes Payandzh, Shiwa, Kokcha, Murqab, Kunduz, Kafiernigann, Surkhandarya and Sherabaddarya Rivers. The Panj and Vakhsh are the largest tributaries of the Amu Darya (Fahim, 2017).

From the point where the Amu Darya originates in Tajikistan to where it ends is the Aral Sea, the river passes through countries including Afghanistan, Kyrgyzstan, Tajikistan, Uzbekistan, and Turkmenistan. If we consider the confluence of the terminal river, Tedjen, which originates from Iran and flows into the Amu Darya in downstream Turkmenistan, a total of seven countries shares the Amu Darya Basin. After Tajikistan, Afghanistan is the second largest contributor to the river with a quarter of the river's 79 cubic kilometer flow. As mentioned earlier, the river is identified as the longest in Central Asia. The river flows for 2,540 kilometers until it terminates at the Aral Sea in Central Asia (Ahmad and Wasiq, 2004).

The Amu Darya River splits Afghanistan from its northern neighbors and forms the frontier (Fahim, 2017). Most of the tributary rivers of the Amu Darya are those in the mountains except for a few that cross through the plain along the 1200 kilometers in the downstream riparian. The main contributors of water are in the mountains, making the Amu Darya River water subject to seasonal fluctuations depending on the temperature and the speed of snow melting in the mountains, in addition to the volume of rain. Flowing from high mountains,

the speed of water flow can be high, subject to seasonal flood and degradation of lands. The flow reaches to 108 bcm in high-water years and 47 bcm in dry or low-water years.” (2021). The entire catchment areas of the Amu Darya are some 309,000 square kilometers (Wegerich, 2008).

According to a water expert from Tajikistan “The level of water fluctuation in the Amu Darya basin requires that riparian states that share the river to properly manage water sharing and data-sharing for better use of water to avoid any potential conflict, especially in water-deficit seasons. In addition, increasing coordination and communication about the Amu Darya Basin amongst the riparian states can avoid any potential damage to infrastructure and people in high-water years.” (Water expert, Tajikistan).

Reviewing literature relevant to the Amu Darya basin up to these points clarifies that riparian states need to address a wide variety of matters to which includes but are not limited to inclusion, collaboration, information sharing and trust building. All riparian states need to feel included, and members should recognize each riparian state’s interests. High fluctuation of water because of seasonal weather changes requires all states to coordinate and collaborate and be creative in minimizing risks and responding to natural catastrophes. Following we will further dig into matters concerning the Amu Darya Basin and will analyze the context.

Agriculture is the backbone of the economies in Central Asian countries that share the Amu Darya. For all these riparian states, the Amu Darya is an important source of water for agriculture, drinking water and for hydropower generation. Agriculture accounts for approximately 25.5 % of gross domestic product (GDP) in Uzbekistan and the sector

employs about 27 % of the workforce. In the same manner, agriculture is the strength of the Kyrgyz rural economy. Kyrgyzstan is also a landlocked country; agriculture employs about 40 % of the country's labor force and accounts for 20 % of the total GDP of the country however, the country is not dependent on Amu Darya flows while its shares of water to the basin is small too and only concerns the high mountain areas. In a meaningful partnership in water basin, it matters to include all riparian states in constructive dialogue though either water contribution to the basin or dependency on water utilization might be considered limited. Inclusion of this kind will help riparian states to stick to the agreement and guarantees consistency.

Similarly, agriculture contributes 22.6 % to Tajikistan's total GDP while employing 45.7 % of the total labor force. And agriculture forms 11 % of GDP while employing 40 % of the workforce in Turkmenistan. Turkmenistan is the second largest producer of cotton after Uzbekistan, the number one cotton producer per capita. Central Asia is already a water-stressed area struggling with a water deficit. Most of the Central Asian countries irrigation relies on water intensive crops and suffer from traditional and outdated irrigation systems, although their systems are much developed compared to the Afghanistan's irrigation system.

Some Central Asian countries began to diversify agriculture crops and products after the collapse of the Soviet Union and in consideration of the Aral Sea disaster in the region. Cotton is a high-water consuming crop. A study by the World Wildlife Fund (WWF) shows that 70% of the earth's fresh water goes toward agriculture production. Food production for humans and livestock comprise a major part of agriculture. Yet cotton, grown largely

for the apparel industry, uses 3 % of the total amount of water consumed by agriculture. The WWF identifies cotton as "the most widespread, profitable non-food crop in the world." This cash crop provides income for more than 250 million people worldwide and employs almost 7 % of all labor in developing countries. Approximately half of all textiles are made of cotton. According to WWF, "it takes more than 20,000 liters (5,283 gallons) of water to produce just one kilogram (2.2 pounds) of cotton, which roughly equals one T-shirt and a pair of jeans." (Triput Pundit, 2016).

According to Andrea Newel, "A 2015 U.N. report anticipates that the world is moving toward facing a 40 % fresh (including drinkable) water deficit in the next 15 years. The report emphasizes the need for a drastic habit shift in the way people consume water, otherwise the world will have only 60 % of the water it needs in 2030. Since most Central Asian countries are cotton producers because of the Soviet Union's subsidized agriculture policy in the region, the lack of diversification of irrigation have further stressed the water availability in the region. The Soviet Union turned the Central Asian deserts into fertile farming lands by improving irrigation systems and over-utilizing water from the Amu Darya for irrigation instead of flowing into the Aral Sea. The Aral Sea started to drain, shrunk, and created a cataclysmic disaster for countries sharing the Aral Sea, a clear case of short sightedness in utilization of natural resources.

During literature review, a concerning point for Central Asian countries sharing the Amu Darya Basin is drinking water deficit. Most of these countries are seriously impacted by climate change. Increasing water diminishing equally threatens all Amu Darya basin riparian states. It poses tremendous perils against all, to address drinking water deficit in the region,

it is in the best interests of all riparian states to acknowledge each other's concern and listen to one another.

**Table 3: The table data demonstrates the average annual flow and withdrawals of water from the Amu Darya for each riparian state. Table retrieved in Feb 2021 from : Glantz, 2005; Micklin, 2000; Ahmad & Wasiq, 2004: Source: Glantz, 2005; Micklin, 2000; Ahmad & Wasiq, 2004**

Countries	Average Annual Flow (KM3)	Withdrawals (KM3)
Afghanistan	17.0	5.0
Iran	<3	N/A
Kyrgyzstan	1.6	0.15
Tajikistan	49.6	7.9
Turkmenistan	1.5	22
Uzbekistan	5.1	22
Aral Sea	0	9.3
Total	79	66.35

The table below demonstrates the average annual flow and withdrawals of water from the Amu Darya water is mostly utilized by all riparian for irrigating purposes. Turkmenistan, and Afghanistan ranked low in terms of areas under irrigation from the Amu Darya water and, according to Micklin, all riparian states planned to increase lands under irrigation as part of their development plans (Micklin 2006). Uzbekistan, Turkmenistan, and Afghanistan, with 2.3 million, 1.7 million, and 1.16 million hectares respectively have the highest use of water for irrigation followed, by Kyrgyzstan with 01. million hectares and Tajikistan with 0.5 million hectares (Ahmad & Wasiq, 2004). According to a 2004 UN FAO report, Afghanistan used only 2 cubic kilometers of water of its 9 cubic kilometers entitlement under its 1946 Frontier Agreement with the Soviet Socialist Republic of 1946. Afghanistan and the former Soviet Union had three different key agreements primarily focused on border management and partially addressed transboundary water. These agreements include 1). Frontier Agreement Between Afghanistan and Russia, 1873. 2). Frontier Agreement between Afghanistan and the Union of Soviet Socialist Republics,

1946 and 3). Treaty between the government of Union of the Soviet Socialist Republics and the Royal Government of Afghanistan concerning the regime of the Soviet Afghan State Frontier, 1958. (Horsman, 2008).

As noted during the literature review, some countries that share the Amu Darya River basin have successfully shifted from cotton focused agriculture to other crops and have done the crop diversification process smoothly. However, some of these countries still have a long way to go to achieve diversification in their agriculture. Sharing lessons-learned and good practices that helped a country to do this transition successfully can help others to diversify their agriculture.

Water scarcity among Central Asian countries remains a major challenge especially water for agriculture purposes. Water of the Amu Darya Basin plays a critical role in the economic development of the Central Asian countries. The percentage of agriculture contribution to GDP and employment opportunities it provides for each of the Central Asian countries indicates the importance of water. However, there is a difference of views in upstream and downstream riparian states about the Amu Darya Basin. Upstream countries, including Tajikistan and Afghanistan, consider hydroelectricity as a driving force for the potential priority benefit that can be derived from the waters. Whereas the downstream riparian states, Turkmenistan and Uzbekistan consider the Amu Darya's potential for irrigation.

Even though both Tajikistan and Uzbekistan as downstream and upstream riparian states had two different priorities and approaches toward the Amu Darya Basin, yet recent developments demonstrate rays of hope for cooperation. Both countries went through a lot

of disputes and lined up for battle yet dialogue between the two countries has positive impact regarding recognizing their priorities and needs.

Hydroelectricity and construction of dams potentially disrupt water flow, putting the downstream water-stressed countries -- Uzbekistan and Turkmenistan -- in a demanding situation, especially until the dam fills with water and reaches its full capacity. It takes 16 years to fill the Rogun Dam and there will be a reduction of 1.3 % water flow through the Amu Darya Basin. Downstream countries are concerned that Afghanistan's and Tajikistan's plans to increase water dams and reservoirs will impact water flow and their agriculture. Another source for Amu Darya is melting glaciers.. Study also indicates that the Amu Darya Basin main source of water is melting glaciers; the level of water flow is not much based on the rainfall, therefore water flow depends on melting snow on the mountains, especially in spring and summer, which makes the basin seasonal, depending on the temperature and the speed of snow melting. Taking this into account, technically the upstream countries should be required to release more water from the dam when the demand for electricity increases in the winter, while the downstream countries need more water during the summer and extra water release in winter is not useful to them. As per interview with one of the senior water experts who served at the Ministry of Energy and Water in Afghanistan.

“Dam construction affects water flow and impacts the flow of water to downstream riparian states. On the other hand, another study also indicates that extensive water utilization for agriculture pressurizes water supply, especially cultivation of water-intensive crops such as cotton” (Afghan expert, 2021).

As another water expert from Canada in an interview highlighted; all five Central Asian countries including Afghanistan need to evaluate their long-term development goals and explore ways that best meet everyone's need for sustainable development and long-term cooperation. Overutilization of water in any form by any country that does not consider the priorities and needs of other countries can lead to further conflict, destabilization in the region and even another disaster such as the Aral Sea disaster. (International Water Expert, Canada, 2021).

The case of Amu Darya depicts a blunt violation of rights of one of the riparian states entangled in years of protracted conflicts. Afghanistan has never been part of any formal cooperations mechanism on Amu Darya. A large body of studies agree that Afghanistan has been widely ignored from policy and academic discussion of the Amu Darya Basin, except for a few major events such as the Water, Climate and Development Issues of the Amu Darya Basin workshop in Philadelphia 1992 (Horsman, 2008). The hydro-hegemony in the river basin has resulted in lack of development of water resources in the side of Afghanistan and have also intensified the conflicts among the other riparian states. Unfortunately, environmental degradation is happening at a rapid pace and 50% of glaciers are melting resulting in low water supply to the basin. The political environment in the region is tense, lacking stronger will to manage the shared water resources in a more cooperative manner. Therefore, the tendency is high for water emerging as a security issue.

### **2.11.3 CONFLICT AND COOPERATION EVENTS:**

Exclusion of Afghanistan from regional framework:

Under the Soviet regime, water cooperation through centralized and integrated management was less complicated in Central Asia. The Soviet Union identified the needs and priorities of each riparian state in the Amu Darya Basin. Infrastructure such as water dams and reservoirs in a country with access to the Amu Darya Basin could serve the irrigation needs of other countries, for instance, as Wegerich in his studies of Hydro-hegemony in the Amu Darya Basin articulated, reservoirs situated in a country might operate for the benefit of the other country. For example, in the Syr Darya river, water reservoirs were built in Kyrgyzstan, but priority was given to Uzbekistan for irrigation and expansion of its agriculture over Kyrgyzstan's demand for electricity in winter. However, as part of the Soviet Union centralized management system, subsidized gas and fuel to Kyrgyzstan addressed electricity production at a cheap price in exchange for releasing water from the dam to the Syr Darya River (Wegerich, 2008).

Although the Soviet Union's integrated management system no longer exists and countries in the Amu Darya Basin each follow their own development policies, such cooperation mechanism that governed Syra Darya River can still be explored and adopted in the future to settle any potential dispute over water sharing in Central Asia for Amu Darya River Basin. Each of the countries in the Amu Darya Basin have unique strengths and weaknesses that could be substituted by the other as part of a regional cooperation over transboundary water. A similar exchange happened between Uzbekistan and Tajikistan on the Amu Darya, which was not sustainable, major reasons behind failure of such an exchange model will be explained in the case study of Rogun dam. During the Soviet period, Turkmenistan, and Uzbekistan, both downstream riparian states, emphasized irrigation and continued

focusing on expansion of their agriculture and cotton production and the upstream countries utilized Amu Darya Basin for energy production. (Wegerich, 2008).

According to an Afghan water expert and diplomat, “Afghanistan remained isolated in the Soviet Union hydro hegemon policy when it was an upstream water provider to the Amu Darya Basin. Afghanistan sought the help of the United States to build its water infrastructure. The Embassy and the US agencies intervened to design dams and develop the irrigation system. This way Afghanistan was outset from the Central Asia regional water cooperation mechanism.” (Afghan water expert and diplomat, 2020)

The Soviet Union did not include Afghanistan in the 1987 meeting that aimed at identifying allocation of water between the four Central Asian countries in the Amu Darya Basin. The meeting concluded with Protocol 566 that determined water allocation for each country. After the dissolution of the Soviet Union in 1991, Central Asian countries (Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan) convened in Almaty and agreed to remain committed to Protocol 566 and an equivalent protocol that was agreed on the Syr Darya, it involves Kazakhstan as both rivers feed the Aral Sea which used to unify the basin. Protocol 566, a major outcome of these discussions, determined the quotas of water for Uzbekistan, Turkmenistan, Tajikistan and Kyrgyzstan, a total of 61.5 bcm from the Amu Darya Basin. Russia was to make sure that the Aral Sea has water to prevent it from drying up (Ahmad and Wasiq, 2004). In Protocol 566 it was presumed that Afghanistan will utilize 2.1 bcm from the Amu Darya, even though the country was not engaged in discussions.

In addition, they formed the Interstate Commission for Water Coordination of Central Asia (ICWC) for management of water allocation. Afghanistan was not included in either the Almaty meeting or in the ICWC (Kamil, 2021). From the perspective of researchers on the Amu Darya Basin, including Kamil, there are political reasons behind the exclusion of Afghanistan from regional water management (2021). Some emphasize that in addition to political reasons behind Afghanistan's exclusion, there are regional relations, regional attitude toward cooperation, institutional inertia and self-interest, and upstream and downstream differences. (Horsman, 2008). Protracted conflict in Afghanistan, political instability, and a volatile security situation negatively impacts inclusive public institutions and bureaucrats and ultimately Afghanistan's capability for water negotiation, and cooperation with neighboring states. Political context is ultimately essential for trans-state management (Gleick, 1993).

Exclusion of Afghanistan from the Amu Darya Basin related conversation and unilateral agreement might have been possible in the presence of a superpower such as the Soviet Union which represented Central Asian countries' interests however, it will not be feasible anymore in the absence of such a centralized power. Durability of any agreement upon Amu Darya's water utilizations requires all riparian states positive attitude and contribution in discussion of prioritizations.

Afghanistan's long term political tension, protracted conflict and instability are key reasons behind its exclusion. A stabilized state can speak for the interest of the nation and better contribute toward regional cooperation. It can also speak to how the inclusion of Afghanistan can add value to ongoing efforts for greater use of water in the water-stressed

region. Almost all Central Asian states have an interest in a stabilized Afghanistan. Instability in Afghanistan imposes great risk to the region, especially to the Central Asian states. These perils can vary from radical groups penetration into the central Asian countries to, drug smuggling, human trafficking, mass migration etc.

Kamil argues that Afghanistan can increase land under irrigation from the Amu Darya Basin up to 20 percent. Such a size requires utilization of between 5-6 cubic kilometers, less than 2 % of the total river supply. To achieve this target, Afghanistan may need two decades of political sustainability with the focus on the water development plan, therefore, Afghanistan's water utilization even in its maximum quantity for irrigation does not impact neighboring countries and does not urge upon them any water-sharing agreement with Afghanistan or inclusion of Afghanistan in Interstate Coordination for Water Commission (ICWC) for water cooperation (2021). This is a driving reason behind Afghanistan's exclusion from water discussion in central Asia.

Under the Soviet Union, Basin Organization Basseynoe Vodnoe Ob'edinenie (BVO) was established to enforce water quotas. After the Soviet era, Central Asian countries signed the Almaty agreement and established the Interstate Commission for the Aral Sea (ICAS) and the International Fund for Saving the Aral Sea (IFAS). Afghanistan was not engaged in any of these initiatives. (Kamil, 2021). The Almaty agreement agreed to maintain the water quotas defined in Protocol 566. According to one of the diplomats at the Ministry of Foreign Affairs of Afghanistan:

As an Afghan water expert stated, "Afghanistan as a riparian state in the Amu Darya Basin must be part of the regional cooperative framework to be able to interact actively with other

riparian states on its water rights, overall development of the region and preventing any harm to the Basin through collaborative processes.” (Afghan water expert, 2020).

A senior Afghan water diplomat pointed out that “Afghanistan Isolation have led to unilateral mechanisms that can be detrimental for the overall health of the basin, Afghanistan needs proper awareness and catching-up on the developments missed during the years of conflict. By including Afghanistan, the region can also work on the major climate and environmental degradation that can be prevented.” (Afghan diplomat, 2020).

Members of ICWC and Afghanistan do not share the same values and interest in regional cooperation. The Almaty 1992 water agreement and other agreements governing the Amu Darya Basin emphasize equitable utilization of water and promote equal rights and responsibilities, while practice demonstrates that members are not committed to the Almaty agreement. Kamil states that membership of Afghanistan could pose challenges to downstream riparian states who consider the Amu Darya more for irrigation use while Afghanistan is further aligned with Tajikistan as an upstream riparian state that considers hydro-electric potentials of the Amu Darya.

Although it is a fact that Afghanistan’s water positions on the Amu Darya Basin as a riparian state are aligned with Tajikistan, that should not lead other riparian states to exclude Afghanistan. Exclusion for such a reason is counter-productive and does not address the root cause of the problem. Constructive dialogue amongst riparian states to better understand the needs and priorities of one another and explore ways to work together will lead to greater and more sustainable regional cooperation for water. All countries that share the Basin must feel included to ensure success in enduring peace in the region and

enhanced regional cooperation. A senior diplomat at the Ministry of Foreign Affairs of Afghanistan mentioned:

According to a senior Afghan diplomat “Afghanistan on several regional forum and bilateral meetings have supported the position of Tajikistan in terms of construction the Rogun Dam, this position is not appreciated by Uzbekistan, therefore, lower riparian fears the by inclusion of Afghanistan in the regional mechanism can further weaken their position in negotiation with Tajikistan.” (Senior Afghan Diplomat, 2020).

The Amu Darya Basin is located on a frontier line, defining the border between the former Soviet Union and Afghanistan. Most of the discussion held between Afghanistan and the former Soviet Union was about border management rather than water management. Therefore, the legal framework produced during that era emphasizes border cooperation and not water cooperation (Kamil, 2021). The second sets of agreements are between the Central Asian countries that were inked in the post USSR era, most of which have the same essence of the USSR legacy.

In addition, Afghanistan has not been included in formulation of these legal frameworks except for a very few, A treaty of commerce and navigation was signed in 1843 between the Tsar of Russia and the United Kingdom. This agreement covered navigation and commerce in the Amu Darya Basin. Russia and the UK signed follow-on agreements in 1872 (Treaty of Commerce and Navigation) and 1873, and later Afghanistan and Russia signed Frontier Agreements in 1946 and 1958 which aimed at agreeing on the international boundary and borderlines. The agreement of 1946 emphasized other matters rather than borderlines such as returning Afghanistan’s property or territory and Afghanistan’s

navigation rights on the Amu Darya Basin. Some literature indicates that Russia and Afghanistan agreed not to build dams which impact the flow of water in their territory. The 1958 agreement with Russia has further details about border marks, fishing, hunting, mining, agriculture, and forestry (Kamil, 2021).

As a result of a 1958 Frontier Agreement between Russia and Afghanistan, a joint commission was formed obliged both parties to share information about precipitation. Sharing information helped to prevent flood risk and subsequent damages. Still water sharing was not discussed in any of these agreements. Naimi in a UNEP study of “Environment and Security in the Amu Darya Basin” argues that Afghanistan had limited capacity to expand or initiate new projects in its northern area at that time, therefore the need to discuss water sharing was conditioned on follow-on agreements with Russia (Naimi, 2005). Afghanistan made some effort in 1970 to make agreements for water sharing but the effort failed partially because of Afghanistan’s reluctance to regional cooperation, social unrest, and continued conflict in Afghanistan, but also because of lack of interest on the part of the Soviet Union and Central Asian countries to include Afghanistan in their institutional framework for water-sharing.

There are contradicting statements about Afghanistan’s endeavor to be included in water discussions with Russia and Central Asian countries. Some highlight Afghanistan’s reluctance but others state that Afghanistan tried to negotiate for water sharing with Uzbekistan by sending a delegation to Tashkent in 1977. The Soviet Union delegation offered 6,000 cubic kilometers a year, almost 3,000 less than what the Afghan government demanded; therefore, the negotiation reached an impasse (Rycroft and Wegerich. 2009).

Furthermore, in the International Fund for Aral Sea (IFAS)'s first tens year of report, Afghanistan is only mentioned as a problem and any future development on Amu Darya initiated by Afghanistan is a big sign of uncertainty for the rest of the riparian. The meeting also emphasized on the need for regional water management system responsive to the new situation in Afghanistan at the Taliban withdrawal of 2001 (ICWC, 2006).

The Amu Darya riparian states need to think of increasing dialogue aimed at enhancing regulatory environment for riparian states' water policy, transboundary water institutions and developing additional tools and means of coordination and communication to address water related issues.

### **2.11. 3 Conflict and instability in Afghanistan**

Protracted conflict in Afghanistan contributed to the country's reluctance to pursue greater regional cooperation. Afghanistan's lack of technical knowledge and capacity compared to that of neighboring countries and its lack of access to hydro-metrological data put Afghanistan in a weak bargaining position. And Afghanistan's neighboring countries did not include Afghanistan in regional water sharing cooperation which further reduced its ability to manage cooperative mechanisms and learn better negotiation skills (King and Sturtewagen, 2010). Therefore, Afghanistan remained highly dependent on the international stakeholders for responding to its water related matters. Although it is a great benefit that Afghanistan has access to international water experts and institutions however, Afghanistan also needs to realize that water issues are sensitive and international actors might act conservatively to avoid engaging in any possible regional conflict.

Afghanistan continued discussing water sharing with Tajikistan, the other upstream riparian state. The two countries signed a Memorandum of Understanding (MOU) in 2007. The MoU was developed considering the agreement of 1958, to increase cooperation in implementation of joint water resource development projects. Both countries signed other protocols and MOUs in 2010 and 2014 which encourage both countries to share hydrological information and provide drinking water to populations living in the Amu Darya Basin. Populations of both countries living in the Amu Darya Basin are poor and development in the Amu Darya Basin can drastically change their life, leading to enhanced border security.

Population density along the Amu Darya River in Afghanistan is considerable. Many Afghans in this area have no access to quality drinking water. By 2015, almost half of the population in Afghanistan – about fifteen million people -- had no access to clean drinking water.

Some observers believe that the Soviet Union's definition of the Amu Darya Basin is still dominant amongst Central Asian states. The Soviet Union saw the Amu Darya River basin as a border separation point between Afghanistan and the Central Asian countries and dealt with it more as border management issue other than including Afghanistan as one of Amu Darya River riparian. Such a definition has been applied in policy discussions on regional water affairs and major literature. Many studies emphasize that Afghanistan's part in the Amu Darya is ignored. Afghanistan is the second largest contributor to the Amu Darya after Tajikistan so water cooperation without input from Afghanistan remains unproductive. Although the Soviet Union definition of the Amu Darya River is dominant,

Central Asian countries have a difference of views about engagement with Afghanistan. Uzbekistan as a downstream riparian was against signing a MOU between Tajikistan and Afghanistan. From the perspective of Uzbekistan, Afghanistan's future infrastructure development plan on the Amu Darya River and implementation of its 2008 Water Sector Strategy will cause significant changes on water supplies to Central Asia. Central Asia needs to engage Afghanistan in water sharing and cooperation for greater regional stability, water security and tapping into new markets.

There are few examples of cooperation but considering the challenges the efforts are minimal and extremely slow to improve transboundary water development in the longer run. These areas in the northern and Central Afghanistan are extremely poor, relying completely on foreign aid and lacking development programs that enhance the economic development.

#### **2.11.4 Afghanistan needs as a later developer.**

Sustainable development in Afghanistan relies heavily on appropriate utilization of its water resources. Afghanistan's energy, agriculture, rural and urban development will become a reality when water resources are properly utilized across the country. Agriculture accounts for a large part of GDP in Afghanistan, almost 25 % in 2019, and employs 61 % of the total population (World Bank Report, 2018) .

Utilization of water for agriculture accounts for 95 % of Afghanistan's water consumption, and a large part of Afghan population lives in rural areas (The Water Peace and Security, team, 2021). International water expert mentioned that:

As an international water expert stated in the interview “Afghanistan has limited capacity and insufficient infrastructure to properly store, manage and use its water resources. Protracted war and social unrest have devastated infrastructure in Afghanistan and slowed down reconstruction for those negatively impacted during the war. Afghanistan has also been subject to climate change; its water resources are heavily dependent on seasonal rain and snowfall. Glacial retreat and early snow melting also affect seasonal water flow and availability.” (International water expert, 2020)

Afghanistan needs to increase its water reservoirs to improve its irrigation systems. The country needs to improve infrastructure to further control seasonal water flows. According to long-term Afghanistan National Development Goals (ANDS) and the latest Sustainable Development Goals (SDG), the country plans to increase its infrastructure on all rivers, including the Amu Darya River. Infrastructure development aims at mitigating flooding. In addition, the country has suffered from consistent droughts which proper utilization of water and improving irrigation system can address. More importantly, by improving infrastructures, the country can address access to drinking water, especially in rural areas where it is a major concern. Health and sanitization are poor resulting in diseases, to improve the situation, water availability must be a central developmental agenda for the government and international stakeholders.

However, major infrastructure development in Afghanistan will be a matter of concern for the water-intensive cotton industry for downstream riparian states. Even though such development has the potential to raise cross-border tensions between upstream Afghanistan and downstream countries, Central Asian countries and Afghanistan have not secured any

regional agreement for water sharing. Initiating regional cooperation is significantly important to ensure regional stabilization and economic development. Meanwhile, it is important to note that riparian communities on all sides of the river have an interest in regulating floods and mitigate risk as economic assets are at risk on all sides of the river. Flood risk management will be an important cooperation factor between the riparian states. Afghanistan's infrastructure development is focused more on two tributaries of Amu Darya, the Kokcha and Kunduz Rivers, with hope to address energy deficiency in the country (Ahmad & Wasiq, 2004 p 23). According to Wegerich the Three Blind of Afghanistan: Water Flow, the water-stressed downstream countries may disagree with utilizing Amu Darya water both for irrigation and for hydroelectric by upstream riparian states (Wegerich, 2009). Both Uzbekistan and Turkmenistan disagree with hydroelectric infrastructure development of Tajikistan with less stress on Afghanistan, and Uzbekistan is critical of Tajikistan's water plan on the Amu Darya, especially the Rogun Dam. Tajikistan and Afghanistan are supportive of each other for irrigation and hydroelectric. Both countries are poor in terms of GDP, food security and energy in comparison to the riparian states (EIU, 2008a & 2008b).

#### **2.11.5.a Riparian states of Amu Darya**

##### **Uzbekistan:**

Uzbekistan shares 160 kilometers of border with Afghanistan. These border lines are heavily protected, yet Uzbekistan has concerns about security threats from Afghanistan. From the perspective of the government of Uzbekistan and the Afghan government's

intelligence report, the Islamic Movement of Uzbekistan (IMU) operates in Afghanistan and claims to implement Sharia Law and wishes to change Uzbekistan to an Islamic Khalifat (Bruce, 2021).

Uzbekistan historically held well-established ethnic affinity with the elite of the Uzbek ethnic group in Afghanistan, but not much with local Uzbek people. Uzbeks comprise a considerable population of Afghanistan. Uzbekistan supported the United States global war on terrorism in early 2000s and contributed to the US-led Operation Enduring Freedom (OEF) in 2001 and NATO-led International Security Assistance Force (ISAF) in Afghanistan between 2001-2014. All Central Asian states including Uzbekistan supported the US war on terror in different ways such as providing territory, military facilities, transit route and overflight permission. Uzbekistan currently has the best ties with the Taliban amongst Central Asian States. Uzbekistan hosted a delegation of the Taliban in Tashkent in August 2019 (Pannier, 2021).

To meet the domestic demand for electricity, Afghanistan is highly dependent on Uzbekistan's cross-border electricity supplies. Uzbekistan provides around 27 % of Afghanistan's electricity demand, 1,284 gigawatt hours (Gwh) of a total 4,773 GWh. In addition, Afghanistan and Uzbekistan opened the Uzbekistan-Afghanistan Border Trade Zone at the Termez Cargo in Southern Uzbekistan. This is not a free trade zone, yet it facilitates trade administrative work for Afghan traders and eases the process.

According to an Afghan water expert, "In terms of water relations, Uzbekistan have not yet shown any interest in inclusion of Afghanistan into the Central Asian Water Cooperation Framework. As an upstream riparian states, it is also sharing the position of

Turkmenistan which is that inclusion of Afghanistan can further disrupt the harmony and this matter has never been discussed as a matter of priority with Uzbekistan. Uzbekistan is aware that in case of Rogun Dam Afghanistan will join the position of upstream riparian state, Tajikistan. Therefore, to keep the power of Tajikistan minimal, exclusion of Afghanistan can be an option.” (Afghan water expert, 2020).

In accordance with a water expert from central Asia, “Afghans are still reluctant to initiate any kind of negotiation on Amu Darya for two main reasons: 1) Lack of preparedness in terms of reliable scientific data 2) fear of accepting the terms and conditions 3) lack of institutional mechanism to ensure the full implementation of the treaty.” (Water expert from central Asia. 2021).

#### **2.11.5 ASYMMETRIC WATER RELATIONS:**

An Afghan water expert in the interview stated that in terms of geography, material, and discursive power, only Tajikistan has some commonalities with Afghanistan. Such as in terms of geography both countries are upper riparian state, with the major source of water. The other riparian states Uzbekistan, Turkmenistan and all are lower riparian but in terms of financial resources, GDP per capita and education standards and state discursive power remains highly different from Afghanistan (Afghan water expert.).

Riparian states in the upstream of the Amu Darya River -- both Afghanistan and Tajikistan -- see the Amu Darya as a source for hydroelectric and irrigation, while downstream states see it more for irrigation, especially cotton and rice. Therefore, upstream and downstream might be future areas of both cooperation and confrontation. (Horsman, 2008). Tajikistan has a large-scale and more sophisticated hydroelectric development plan than Afghanistan

Tajikistan is working to finish construction of the Rogun Dam, one of the biggest dams in the region. However, in terms of economic power, Tajikistan remains relatively low compared with Turkmenistan and Uzbekistan. Whereas, Both Uzbekistan and Turkmenistan material power remains significantly higher than Afghanistan. Tajikistan also has the largest number of Russian Troops across the border with Afghanistan to protect its territory from the infiltration of terrorist organizations and narcotic smuggling.

A senior Afghan diplomat in the interview pointed out that “Instability in Afghanistan will directly impact Tajikistan. Their shared 1200-kilometer border makes Tajikistan vulnerable to spillovers of Taliban and other extremist groups that have sought refuge in Afghanistan. These extremist groups can infiltrate the border areas easily; Therefore, Tajikistan remain alert and has always cooperated on border security with Afghanistan to prevent the threat of extremism and terrorism.” (Afghan senior diplomat.).

In terms of discursive power, all central Asian Republics follow the centralized, autocratic, and oligarchic narrative of the government. The role of civil society organizations and open media remain critical, especially in Uzbekistan which has recently adapted freedom of expression and have open its doors to the world. However, if the negotiation over Amu Darya begins, all four countries will have an equal voice in the process. Afghanistan may exercise some level of compromise because of its dependence on some of the development packages granted by Central Asian republics.

In Tajikistan the narrative towards cooperation with Afghanistan is positive, both countries share strong ethnic affinity, speaks Farsi/Persian and Tajiks ethnic group form a major portion of Afghanistan’s demography. Therefore, Tajikistan has often had a positive

attitude toward development in Afghanistan, even though for Afghanistan- related issues, Tajikistan relies on Russian military and economic assistance (Kassenova, 2014). (Water expert, Tajikistan).

A water expert from Tajikistan mentioned that “Afghans have historically had a positive attitude and relationship with Tajikistan. Afghanistan played a key role in hosting Tajik refugees during Tajikistan’s civil war and made significant contributions to peace building in Tajikistan (Water expert from Tajikistan, 2021).

Afghanistan and Tajikistan held a series of consultations and cooperation on integrated water resources management and planning on the Amu Darya Basin, and installation of hydrological stations and bank protection measures particularly along the Panj River. But Afghanistan and Tajikistan have scarcely taken words into actions. Afghanistan and Tajikistan as two upstream riparian signed two protocols in 2007 and a follow-on protocol in 2010. The protocols were developed and signed based on the 1958 agreement between Afghanistan and the Soviet Union.

A few key points of the protocols include: 1) cooperation on planning and investment in the water sector; 2) execution and implementation of the Amu Darya Bank protection work; 3) ensuring security provisions for hydropower subsector and technical groups; 4) rehabilitation of existing hydrological gauging stations along the Panj River and determining new installation sites. The two countries also signed a Memorandum of Understanding (MoU) in 2007 aimed at establishing a joint working group, developing protocols to study hydrological expansion, enhancing cooperation on implementation of

joint programs, establishing a data-sharing mechanism and training experts in water and energy resources management (Walter and Shobair, 2010).

An Afghan diplomat mentioned that “Tajikistan and Afghanistan are currently cooperating under the United Nations Economic Cooperation for Europe (UNECE) on a bilateral platform to coordinate on issues of flood management, adaptation to climate change and security provision for monitoring staff. This avenue of cooperation is key in bolstering bilateral relation on Transboundary water cooperation.” (Afghan diplomat, 2021).

After the collapse of the Soviet Union, Tajikistan established a positive relationship with the Afghan government and is known to be a peaceful neighbor. Both countries have supported one another on different occasions including during the Tajik civil war in 1992-1997. Trade volume between the two countries remains below potential. Tajikistan already supplies electricity to Afghanistan and both countries are working on the Central Asia South Asia Electricity Trade and Transmission (CASA-1000) project. Central Asia and South Asia (CASA)-1000 power project is supposed to supply energy not only to Afghanistan but also to Pakistan and India through Afghanistan (Umarov, 2013). Both countries need to have access to their trade facilities, transport routes and access to new markets. Economic development will contribute to political stability in both countries and support their ambitions for energy production and supply.

Turkmenistan has the second longest border with Afghanistan amongst Central Asian countries, sharing 744 kilometer or 462-mile border sites from northern Afghanistan to the west.

Historically, Turkmenistan has been less sensitive against threats of insecurity from Afghanistan. The country has been neutral and has had limited relations with Afghanistan for decades according to the foreign policy of eccentric communist president Saparmurat Niyazov between 1985 to 2006. However, in late 1990s Turkmenistan made some attempts to do business with the Taliban by implementing Turkmenistan, Afghanistan, Pakistan, and India (TAPI) gas pipeline project.

Turkmens live in Turkmenistan, Afghanistan, and Iran. Turkmenistan has a total population of 4.9 million. The Turkmen population in Afghanistan represents 3 percent of the total population, approximately one million people. Turkmens in Afghanistan live along the border lines and ethnic sharing translates into some cultural overlaps between Turkmens of the two countries. Despite ethnic sharing, Turkmenistan has no ethnic affinity in Afghanistan, yet evidence shows that Turkmenistan has reached out to leaders of the Turkmen ethnic group in Afghanistan (Pannier and Tahir, 2014). Such outreach demonstrates that Turkmenistan wants to play a more active role.

A Turkmenistan-focused Afghan diplomat mentioned “In recent years, Turkmenistan contributed to Afghanistan’s reconstruction and development. Turkmenistan supplies electricity at a low price/high discount to Afghanistan and partially supported the construction of a railway connecting the two countries. Afghanistan suffers from electricity deficiency and Turkmenistan is a big energy supplier to Afghanistan.” (Afghan diplomat, 2021).

Across the Turkmenistan and Afghanistan border several illegal movements of farmers and villagers happen for seeking water for their animal stock, Turkmenistan have launched

many complaints against these illegal movements. For Afghanistan to be less dependent on Pakistan's Karachi port for export of its products to the Black Sea, the Mediterranean and the European market, Turkmenistan can play a key role. The Central Asian countries contribution to the economic growth of Afghanistan can be more than providing energy. transit route linking Afghanistan to Turkey via Turkmenistan, Azerbaijan and Georgia was opened in 2018 to help Afghanistan reach Europe through the Lapis Lazuli route. (Aygerim, 2020).

However, Turkmenistan have always remained skeptical of the water relations with Afghanistan. The Dosti Dam which is a joint effort build on the border areas of Turkmenistan and Iran receives its waters from the Balamurghab river in western Afghanistan. The Dosti Dam was built in 2005 when Afghanistan was just emerging out of ashes of war without any notification from Afghanistan. Afghan officials claim that the Friendship Dam was built without the proper consent of Afghanistan as an upstream riparian state. Therefore, Afghanistan is not obliged to compromise its water development plan to meet the water demands of the Friendship Dam.

Turkmenistan constantly allies with Iran to pressure Afghanistan in diplomatic platforms to halt its development of water infrastructure. Turkmenistan have expressed its disagreement over the construction of Salma Dam which and potential future dams which are planned to be constructed over the Harrirud-Balamurghab River. However, both countries have agreed on exchange of electricity to Afghanistan from Turkmenistan.

Both countries share relations at economic and security front, especially about the protection of border regime. Turkmenistan is concerned about infiltration of Taliban and

other extremist groups to Turkmenistan; therefore, Turkmenistan maintains a strong relation with Afghanistan to protect its border from insecurity. Below picture (12) depicts Dusti Dam.



**Figure 15: Picture of Dosti Dam, retrieved dec 2020 from [https://en.wikipedia.org/wiki/Iran%E2%80%93Turkmenistan\\_Friendship\\_Dam](https://en.wikipedia.org/wiki/Iran%E2%80%93Turkmenistan_Friendship_Dam)**

#### **2.11.5. A LIMITED REGIONAL COOPERATION AND ORGANIZATIONS:**

One of the major reasons for non-cooperation is also the limited attention to the regional cooperation among the central Asian states on the transboundary waters. This lack of robust cooperation is the result of internal differences between the riparian states on shared water resources. A few regional and international organizations such as Shanghai Pact, The Heart of Asia or Istanbul Process and Central Asian Economic Cooperation (CAEC) exist in the region which Central Asian states use as a platform for coordination and cooperation. Afghanistan has membership in only one of them, The Istanbul Process.

The Istanbul Process as a regional initiative was launched in 2011, aimed at creating a framework for dialogue, confidence-building, cooperation with regional organizations and political consultation. Each Central Asian country agreed to lead a group. Kazakhstan agreed to lead implementation in the disaster management group and the chamber of commerce group. Turkmenistan agreed to lead the Regional Infrastructure group. Some Central Asian countries like Turkmenistan and Uzbekistan are often reclusive and skeptical of multilateral arrangements. Their inclusion in The Istanbul Process makes the platform a good place for regional coordination and cooperation (Kassenova, 2014).

A senior Afghan diplomat mentioned that “Some of the regional organizations have raised the topic of transboundary water cooperation without paying the attention to the realities on the ground, most of the suggestions have been ill-informed, focusing on technical aspects, and insisting on scientific data generation without understanding the real financial, capacity and regional geopolitics guiding the water relations in Afghanistan.” (Senior Afghan diplomat, 2021).

The practical cooperation on the Amu Darya can begin if countries agree to include Afghanistan in the legal frameworks. However, the inclusion alone will not bear any result unless the regional riparian states agree on major practical development programs on the Amu Darya, especially in terms of adapting to the climate change, proposing innovative technology for efficient utilization of water for irrigation purposes, joint assessment and data gathering, and other scientific approaches to prevent the pollution and degradation of environment along the river.

According to a central Asia-focused Afghan diplomat, “Regional cooperation on water management requires the political will, during the last 20 years Afghanistan has received millions of dollars as an economic package, these resources are however wasted to a greater extent on symbolic activities without investing on sectors that can generate economy for the long term. The economic packages could support the regional cooperation on joint data gathering and joint assessment of mega development project yielding better outcome for the generations ahead (Afghan diplomat, 2021).

Regional cooperation on transboundary water management is pivotal for the security and stabilization of the region. Proper water management can prevent the incursion of terrorists and drug traffickers under the cover of farmers seeking water.

#### **2.11.5.b Lack of equal attention to Amu Darya:**

Government of Afghanistan paying less attention towards the Amu River Basin:

One of the internal issues that impede the development of Amu Darya and Cooperative mechanisms is the lack of equal attention by the Afghan political elites and policy makers to Amu Darya compared to other riparian states. A comprehensive water policy is necessary to understand the needs of each basin and due attention should be given to developing the water resources of Amu Darya. Afghanistan is the second largest contributor to Amu Darya, the lack of attention can further isolate Afghanistan to play a vital role in the development of the basin.

According to an Afghan diplomat “The Amu Darya water basin does not get sufficient attention, due to the ethnocentric mindset of some of the policy makers who do not believe

in fair and equal distribution of resources across Afghanistan. Internal consensus is key in developing long terms development plans for the Amu Darya.” (Afghan diplomat, 2021). The practical investment in this river basin implies that support shall be channeled through the ministry of Energy and Water to the provinces that fall under the Amu Darya. The irrigation in these areas is planned to be expanded, but lack of technical and financial investment for these provinces impedes any kind of utilization of water from the Amu Darya. Afghanistan is lagging in developing the water resource of Amu Darya due to corruption and mismanagement of funds.

#### **2.11.5.b Lack of equal attention on climate change and maintain an ecosystem:**

The effect of climate change is evident in the availability of both surface and ground water. Afghanistan has been hit by persistent droughts during the last 5 years. This situation has led to thousands of internally displaced people. The dependence of Afghanistan on its water resources emanates from the glaciers that supply water to its perennial river and streams, the reduction of the snowpacks due to climate change has a detrimental on the water resources. The other regional riparian is also conducting several unilateral programs which require coordination for better preparedness in terms of managing the effect of climate change. Only Tajikistan and Afghanistan have entered a bilateral mechanism for the protection of water environmental issues on Amu Darya through UNECE.

#### **2.11.5 c Lack of Civil society interaction and people to people relationships:**

Currently people-to-people relationships between Afghanistan and Central Asia remain good as Afghanistan shares same ethnic groups with most of the Central Asian countries like Tajiks, Uzbek, Turkmen etc. Civil society in Central Asia has not been so developed, civil society is nascent operating in post-communist governments that are suspicious of any civic activism. Civil society ties and joint efforts beyond the border specifically with Afghanistan will become even more sensitive. Media also plays a key role in shaping the narratives and discourse of water amongst the nations. Media can direct the course of discussion in a positive direction and help people have positive attitude toward water cooperation between different riparian states.

#### **CONCLUSION: WAYS TO BOLSTER COOPERATION**

The equitable and reasonable utilization of water is a clear principle in water interaction across any water basin. This will allow all the riparian states to take an active role in the development of the watercourse. The inclusion of Afghanistan is a legal and historical right which should be respected by all the downstream riparian states. The way Russia considered Afghanistan in the Amu Darya Basin is not going to be fruitful for the riparian in the basin, we explained earlier that the first water agreement between Russia and Britain considered Amu Darya as the border between the two empires. The following two agreements between Russia and Afghanistan also built on the idea of the Amu Darya Basin more as a border issue than water sharing agreement.

There are very limited words that identify Afghanistan's water right on the Amu Darya Basin. Inclusion is also paramount because Afghanistan in the short and long run will be negatively impacted by the unconditional use of water downstream, which will limit the possibility of future use of water without harming those already dependent on it. However, Afghanistan neighbors should also reach to a point where cooperation is incentivized which is missing currently. Afghanistan government should highly advocate and lobby for the inclusion of Afghanistan in Transboundary water framework in all regional and international forums.

The reasons for this inclusion shall be legitimized, Afghanistan should also allocate or find financial resources to support the development of Amu Darya, without allocating resources and attracting the donors' attentions to this matter, no action is expected from the CAR countries on this matter. The political elites of Afghanistan should not ignore this basin due to ethnocentric reasons but follow the notion of equal and equitable development of basins across Afghanistan. Riparian states shall also agree upon the needs of upstream and downstream and design programs and plans accordingly.

The upstream states plan for hydropower and downstream plan for irrigation should be discussed and agreed upon by considering the climate change, rapid population growth and urgent needs of each riparian. Otherwise, any unilateral plan can lead to an environment of intense cooperation leaving the Amu Darya further damage and availability of water for the future generation an unresolved matter. Central Asian countries have also legal

obligation to take into consideration the needs of late developer. The earlier developer cannot ignore the needs of riparian based on the treaties that were exclusively formulated when the regional structures and political boundaries were different.

Afghanistan and international community should work together to develop regional cooperative mechanism that ensure long-term technical, scientific, and socio-economic cooperation on water management in the Amu Darya. This is the right approach to prevent terrorism, extremism, and vulnerable communities from falling into the trap and prevent instability and insecurity in the region.

## **CHAPTER THREE: NEPAL AND INDIA ASYMMETRICAL WATER RELATIONS**

### **3.1 INTRODUCTION**

In this chapter the asymmetric relations between India and Nepal will be explored through content analysis and interviews from water scholars and practitioners from Nepal. This research will be reflective of the voices of the more vulnerable riparian—Nepal in this case—which echo a fear of losing water rights to India. India and Nepal share the waters of the Ganges River which is one of the major rivers in South Asia originating from the Hindu Kush Mountains of Nepal and Tibetan Plateau. It is the main source of freshwater for agriculture, hydropower, drinking and domestic consumption for more than 500 million people in India, Nepal, and Bangladesh (James, 2020). This river has several major tributaries, such as Sapta-Kosi, Sapta-Gandaki, Mahakali and Karnali. Nepal is situated upstream and contributes seventy percent of the waters of the Ganges River, whereas downstream India's contribution remains thirty percent, and sometimes even less due to seasonal fluctuations (Upreti and Acharya, 2017). India has high irrigation requirements which are regarded as domestic consumption, while Nepal needs water infrastructure for hydropower and better management of water resources.

The water relations on both sides are on two fronts, people-people interactions for religious/ holy purposes and the state-to-state level interactions which goes back to the 1874 when the British-India send the first letter to the Government of Nepal on three main Ponds on the international borders between the two countries (Dhungel, 2009). Since then

both countries have signed treaties for better management of water conflicts on Mahakali and the Gandak River Basins which are part of the Great Ganga Basin. Some of the major water agreements are: In 1920, Sarada Treaty, the Kosi Treaty signed in 1954, the Gandak Treaty of 1959, the Letter of Exchange of 1961 on the Mahakali River, and the Mahakali Treaty of 1996 and Tanakpur Agreement of 1991 (Gyawali, D., & Ajaya Dixit. 1999 and Pant 2012). The Mechanism of water interaction between the two countries is marked as Indo-Nepal transboundary water resources management.

However, despite the cooperation on a time-to-time basis, both countries are not content with the level of engagements. Due to power asymmetry, politicization, and lack of collaborative planning for basin development, cooperation has never been sustained for long enough to make progress. Both countries have faced serious periods of water conflict that involved stakeholders from various parts of society. The mutual exchange of blame and the lack of effective negotiation has been a strong obstacle. No major development is witnessed related to resource management between Nepal and India since the first treaty signed in 1920. India has remained the initiator and Nepal responder to the water interactions (Pant, 2012. Gyawali, 1990).

Currently, there is an insufficient level of cooperation between India and Nepal on water management in the Mahakali River. Since the signing of the treaty, now more than two decades old, there has been an impasse, and nothing substantial has been achieved. The treaty is suppressed by regional power politics and a lack of political will to cooperate. Nepal continues to blame India for violating the terms of Mahakali treaty, especially in terms of benefit-sharing, information-sharing and unilateral initiatives. Nepal is highly

concerned about the power dynamics and the path India takes to obtain its share of water. Nepal feels excluded from major discussions of the shared river and constantly witnesses the delay of compensation agreed upon within the terms of treaties.

India believes that due to the high share of investment in the river basin, both financially and technically, it has a higher hand in formulating decisions for the basin. Communication is shaped by unilateral understanding of each riparian's needs, without considering the needs of the other riparian state. This situation of asymmetric power relations has been studied both through content analysis and through interviews. Some of the approaches in this chapter are recommended for future conflict prevention and conflict resolution.

### **3.1.1 The Ganges River**

The Ganges River is considered one of the largest river systems in the world. It is also called Ganga River in India. Most of its water is the result of melting glaciers from Himalayan mountains, tributaries, and rainfalls. Nepal has about 2.27% of the entire world's water resources, with more than 6,000 rivers and tributaries. These mineral-rich waters gave rise to ancient civilizations across its path. The river is the source of livelihood for forty percent of people in India, providing irrigation, water for domestic use, and fishing. The river is also sacred among Hindus, serving as the site of several religious rituals, and it is called Mother Ganga (Lama, 2019, James, 2020). The river has a huge capacity to produce hydropower, and riparian states in particular Nepal have not fully exploited the hydropower potential of this river.. Climate change, the increasing speed of glacial melting, population growth, excessive pollution, human waste, and poor water policies all jeopardize the well-being of this river and those who depend on it. As of 2021,

it is considered the fifth most polluted river in the world. Map 7 demonstrates Ganges River originating point all the way to ending point to Bay of Bengal. Map is derived from google map.

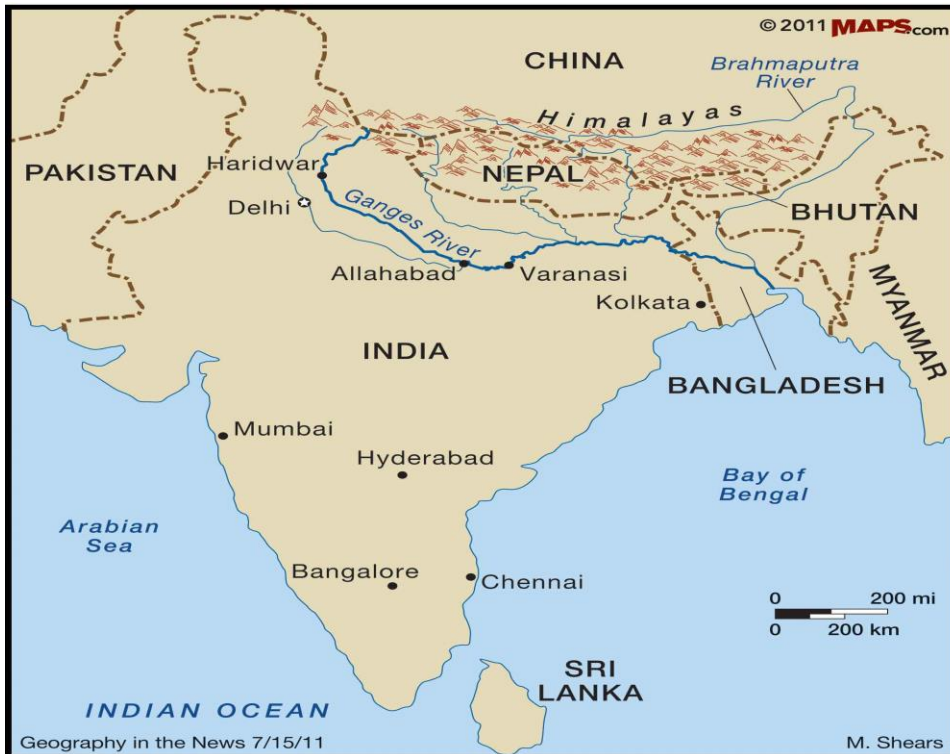


Figure 16: Map of Ganges River, derived from google map on 9/20/2021: [Map of Ganges - Bing images](#)

India and Nepal share borders and rivers, and their shared fresh waters are a source of competition. Nepal contributes forty-five percent of the water in the Ganges River basin and shares 264 tributaries and rivers with India (Lama, 2019). Many scholars and policymakers believe that water is the main cause of conflict between India and Nepal. This is one of the oldest water conflicts, especially the conflict over the Mahakali River that demarcates the border between the countries. Water conflicts were imminent even

prior to colonization. Since then, unfair, and inequitable water treaties have left Nepal feeling hostility for India. The people of Nepal believe that India was coercive and ignored the terms of bilateral treaties, including the Sarada Treaty of 1920, the Kosi Agreement of 1954, Gandak River Agreement of 1959, and the Mahakali Treaty of 1996. However, India amended both these treaties to make them fairer to Nepal during interactions.

The current water dynamics between India and Nepal are shaped by a history of non-cooperation. India, with the largest population in South Asia, remains the seventh largest country in the world. Seventeen percent of the world population lives in India, but the country has access to only four percent of the world's usable water, creating significant water scarcity (Chengappa, 2021)

A harrowing report in June warned that Delhi, along with twenty other Indian cities, could reach zero groundwater levels by 2020. That has not happened yet, but the situation remains dire. India is highly dependent on waters emerging from the Himalayas and flowing through Nepal, both surface water and groundwater. Nepal is a poor country with rich water reserves, and India has invested in this sector during history for its own irrigation, hydropower, and flood control purposes. Water relations between India and Nepal date back to 1874 during colonial times. India signed the Sarada Barrage agreement with Nepal in 1920, and India constructed the Sarada Barrage on the Mahakali River. Nepal was to get a certain portion of the increased water availability. After independence, India and Nepal signed the Kosi Agreement of 1954 and the Gandak River Agreement of 1959 (Tabassum and Idress, 2004, Gyawali, D., & Ajaya Dixit. 1999). These treaties are considered one sided as India developed the provisions, identified the roles for each

riparian and prioritized the areas as per India's development goals and agendas. For India the priorities were generating hydropower electricity and irrigation purposes, however for Nepal the National Development goals and priorities were identified after the established of democracy in 1990. In 1991 after the public debates on the treaties began, the public showed their disagreements on water treaties with India. For Nepal their territorial integrity and equal benefit-sharing become two major issues that were lacking in the water treaties. The public reaction to treaties were hand over of water resources to India without any consultation with the people of Nepal (Uprety et al., 1999). According to water expert from Nepal India role is of hydro-hegemon and continue to manipulate the situation for its favor: "India acts as a big brother and does not value Nepal's perspective on water-sharing arrangements. India continues to use its power to capture more water resources." (Water Expert, Nepal, 2020)

The Nepali side is reluctant to commit to any subsequent agreement, considering the futility of previous water treaties. Many citizens believe that Nepali politicians bend too easily, compromising their own national interests to please India. Nepali politicians lack a clear framework with clear water policies. They also tend to lack negotiation and bargaining capacity, as well as monitoring and evaluation policies to better follow up with their Indian counterparts. As per interview with a senior water official from Nepal, the issue of mistrust was highlighted:

"Nepal is suspicious and lacks trust in India, believing that India enjoys privileges that no other country does and has a high hand in Nepali politics through investment in the health, economic and education sectors. This, for many, is the real power asymmetry of which

India takes full advantage while drafting agreements on the Ganges River.” (Water official, Nepal, 2020).

Nepal is insecure in its sovereignty and does not want to lose its power over water resources. This is a less-than-ideal position to be in when negotiating water treaties, and Nepal has been afraid to cooperate because of it. Both countries' interdependency on water cooperation is inevitable. To engage in productive negotiation, both parties must acknowledge the power asymmetry, the factors affecting non-cooperation, and the way forward to create an equitable relationship. The two parties must also acknowledge the role of regional and extra-regional institutions in mediating agreements between these riparian states. India remains highly active in Nepali hydro politics due to its high dependency on the Ganges River. More than 700 million Indians directly and indirectly relies on the water from Ganges River (Padmva TV, 2020). Therefore, any unilateral action can impede water flow to downstream India.

The Nepali believe that India has treated them unfairly in all water treaties by controlling, patronizing, and manipulating Nepali bureaucracies, convincing them to follow paths set by India. However, Indians argue that Nepal is a rich country, and they want to have strong bilateral relations to limit the role of China in meddling in South Asian politics and economic architecture. India is concerned of Pakistan's and China's influence in the region after a hijacked Indian plane was landed in Kathmandu in December 1994 (Mustafa, 2015). Mirumachi argues that despite the huge financial and technical investment of Indian authorities on the Kosi and Gandak projects, both projects were perceived as unfair and highly influenced by India's hegemonic power. Water relations between riparian states,

based on power asymmetry and geopolitics, guided the institutionalization of hydro-hegemonic control of water by India. India used active stalling through its strong discursive power by persistently refusing to commit to a way benefits would be identified and shared. Furthermore, India's resource power, sanction power and hydraulic projects shaped the framework and environment for negotiation (Mirumachi, 2013). According to the water expert from Nepal the government of Nepal lack political stability which has a direct effect on the water negotiations with India.

“The other issue is the instability of the Nepali government; Nepal has transitioned through twelve governments since the fall of the monarchy regime, one which enjoyed better relations with Parliament. This instability has strongly affected institutional memory and has led to frequent shifts in senior bureaucrats and water officials. However, despite all these tense political circumstances, India and Nepal enjoy good relations.”(Nepal water expert, 2020).

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Figure 17: map of Mahakali River derived from [IAS4Sure](https://www.ias4sure.com/wikiias/prelims/mahakali-river-upsc-prelims/) google map: 10/9/2021:  
<https://www.ias4sure.com/wikiias/prelims/mahakali-river-upsc-prelims/>

### 3.1.2 The Mahakali Treaty

The Mahakali Treaty was the first cooperative agreement between India and Nepal after the fall of the Panchayat ruling system in 1990. Panchayat ruling refers to a governance model where “for centuries the government had been run by several interrelated aristocratic families. Despite the limitations of a royal ban on political parties and other impediments, political parties did exist and operated clandestinely.” (Macdonald, 1991). The Mahakali Treaty was signed on January 26th, 1966, by Indian Prime Minister Narshimha Rao and Nepali Prime Minister Sher Bahadur Deuba. The treaty was for the joint utilization and development of the Mahakali River. The Mahakali treaty consisted of three water projects that included the Sarada Barrage, the Tanakpur Barrage, and the Pancheshwar Multipurpose Project. The work of the Sarada and Tanakpur Barrages was completed in

1920 and 1922 respectively, but the Mahakali Treaty reached an impasse on Feb 12, 1996, due to the new regime's establishment and to conflicts that were never resolved (Lama, 2019). Both India and Nepal celebrate the Mahakali as one of their greatest achievements, but the situation was changed due to over-politicization of the treaty. The spirit of cooperation gradually diminished between the countries. According to many scholars, "the treaty was signed in quite a haste without considering the political relations, regional structures and environmental concerns" (Bagale, 2019).

This Mahakali treaty allowed the construction of the Sarada Barrage, which allowed Nepal to have 1,000 cusecs of water in the wet season and 150 in the dry season. For India, the share of water was 350 cusecs in the Mahakali River to supply the water flow to the river. Nepal was given the right to build the afflux bunds and poundage areas, and they were designated a certain amount of hydroelectric power. The treaty, however, did not specify the extra amount of water that India can extract, which has left the rules open to interpretation. Nepalese water experts interviewed for this study are not satisfied with the contents of the Treaty:

"This treaty is an example of unequal water relations, especially in terms of sharing benefits, and it will always remain vulnerable to manipulation by the most powerful party if not evaluated, considering the current needs and realities of Nepal." (Senior water official, and Water Expert, Nepal. 2020).

In 1953, due to flooding, India extended the Barrage one hundred meters into Nepal. This expansion was considered disrespectful to the sovereignty of Nepal, as there was no advance notification. No significant protest occurred, however, because of the act. During

the 1950s, India initiated no further projects on the Mahakali River. However, India did enter two new treaties, on the side of Bihar and Uttar Pradesh, for irrigation and flood control projects: the Kosi Agreement of April 1954, and the Gandak Agreement of December 1959. Both treaties had minimal impact on reducing political tension between the countries and ensuring a more sustainable path for cooperation. In 1971, Nepal approached the World Bank for a financial loan to be able to utilize its share of water from the Mahakali River as agreed upon under the Sarada Agreement of 1920 (Gyawali, D., & Ajaya Dixit. 1999).

During this period, Panchayat rule limited private investment in hydropower generation, and, in 1972, all electricity production and consumption plans were nationalized. International organizations played a key role in investing in unilateral and multilateral initiatives to invest in development of water sector. The World Bank, the UN, the ADB and USAID roles remained pivotal in facilitating projects for irrigation, water supplies and electricity. International organizations introduced several projects in the subsequent years which were eventually shut down due to their high cost. Despite international involvement, these projects were carried out unilaterally without the full involvement of Nepal. 1970s was an era during which Nepal remained silent and passive in regard to water issues.

India continues to conduct feasibility studies of hydroelectric projects on the border of the Mahakali in Tanakpur. Nepal raised concerns about this unilateral plan which would significantly impact the Mahakali irrigation project, which is one of the National Pride Projects of Nepal. As a result, India conceded and adjusted the plan to direct flow to Nepali irrigation efforts, and India agreed to the construction of structures to avoid bank cutting

in Nepal. In 1988, India completed most of the Tanakpur Barrage, but it required a 588-meter expansion into Nepali territory, which was denied by the Nepali government. It was considered an act of diplomatic pressure on Nepal.

Following the consolidation of democracy in Nepal in 1990, India approached with this plan for expansion of land control in the Nepali territory for the Tanakpur Barrage. After several negotiations, both countries agreed to a joint communique to accelerate development of the water sector. This decision was met with opposition in Nepal by those who saw it as selling their needed waters. Citizens took issue with the politicians' rhetoric of common rivers. In November of 1990, a provision was added, Article 126, which required that "any resource-sharing agreement be ratified by a two-third majority of Parliament if it is of a pervasive, serious and long-term nature" (Tabassum, 2004).

The government later tried to resolve this in a manner that minimized border loss for Nepal. India once again directed the situation, and Nepal wanted to resolve it without confrontation. On December 28th, 1990, the Minister of Water proposed a solution that involved honoring Indian requests, introducing further irrigation projects in the Kanchanpur district, and building a highway connection to the Mahakali Barrage. The interim government lost the elections in 2013, and the plan did not come to fruition (Shaista and Idrees, 2004).

A new government took over communication with India regarding the left afflux bund, and India seemed reluctant to grant permission without a detailed feasibility study. In a 72-member meeting in India, which included newly elected Prime Minister Koirala of Nepal, no senior water officials or experts from Nepal were present. Both parties signed an

agreement which was considered more of a memorandum of understanding between both countries, which negated any obligation to present it to Parliament. This easily allowed India to construct the expansion into Nepal, granting 150 cusecs of water to Nepal, along with 10 million units of free electricity.

These developments were the object of suspicion by the public and opposing parties. The Prime Minister responded on December 15th, 1991, declaring that all details of the agreement would be published in the official state newspaper. He reassured the people that all decisions were in line with national interests and that nothing secret or nefarious had been outlined. India accelerated its construction of the left afflux bund, and Nepal released the reports which did nothing to ease fears regarding the concession of power to India.

### ***3.1.2 a The Sarada Barrage***

According to the Sarada Barrage 1920 Agreement, Nepal is to receive 28.35 cubic meters per second of water during the wet season, and 4.25 cubic meters per second in the dry season. Nepal was granted environmental flow at ten meters per second, and, in case of non-functionality of the barrage, Nepal is to have access to the water of the Tanakpur Barrage. The Tanakpur River Agreement declares that Nepal must grant access to a left afflux bund 775 meters into Nepal. Nepal would still have sovereignty of that land, while India would construct the head regulator at the left bank of the Tanakpur Barrage and its waterways. India would provide the construction resources to the border which would then be jointly operated. India would construct a 132 kV transmission line up to the Nepal-India

border from the Tanakpur Power Station, supplying Nepal with 70 million kilowatt hours of energy.

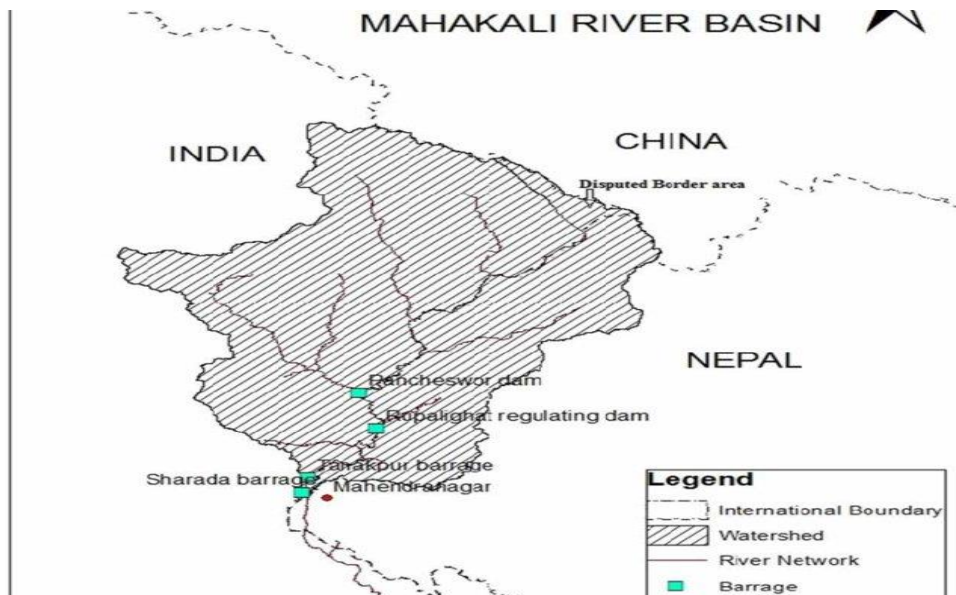


Figure 18: Map Mahakali depicting dams and barrages derived from google map on 8/22/2021: [https://www.researchgate.net/figure/Mahakali-River-basin-upstream-of-Sarada-Barrage-source-Bagale-2019\\_fig1\\_342148937](https://www.researchgate.net/figure/Mahakali-River-basin-upstream-of-Sarada-Barrage-source-Bagale-2019_fig1_342148937)

### 3.1.2.b The Pancheshwar Multipurpose Project

This project was part of the Mahakali Treaty. It included the construction of a 315-meter-high dam for two hydro-electric plants with a capacity of 5040 MW. The Pancheshwar Dam, upon completion, would provide irrigation to 1.7 hectares of land in Nepal and 2.59 lakh hectares in India, and it would meet the electricity requirements of both countries. The project was halted due to environmentalists criticizing the highly seismic nature of the dam, which is non-conducive to such a project (Thapa, 2017, Fact Sheet, 2018).

This project on the Mahakali River was intended to generate power, control flooding and aid in irrigation. The parties would split project costs based on the proportional benefit to each party. Nepal was given the option to sell shares of energy to India at mutually agreeable rates. Additionally, Nepal was to receive 10 cubic meters of water for irrigation of the Dodhara-Chandani area (The Treaty of Mahakali, 1996). As per International Water Expert:

“Nepal is the victim of its own idealistic perceptions. The Nepali have a vague dream of using their upstream location as a bargaining chip and selling the waters downstream to alleviate poverty. However, without considering the complex water relations, during asymmetric power relations, without any due support from a third-party intervention, it is a mere dream. There has not been a proper study on water as a resource to alleviate poverty, ensuring long-term growth or the actual costs of investing in the water sector. Therefore, the three agreements with India were shadowed by hasty moves without predicting the repercussions on long-term water relations between the states. In other contexts, such hasty projects have led to further vulnerability of weaker riparian states.” (Water expert, 2020)

“The failure of such agreements is also associated with the intense political meddling of elites into the professional water development sector. Decisions have been influenced by ego-centric views rather than technical know-how—a culture of over-reliance on consultants limiting the development of home-grown knowledge.”

The other reason for the Mahakali failure was the transition period from Monarchy to Republic when the Durbar (the central key decision-makers around the King, the council of key officials in the administration) was responsible for managing the affairs of the state.

Despite good intentions, Durbar was inefficient and politically weak, allowing foreign troops in Kalapani, Nepal. This was seen as a major concession by the people of Nepal (Mukherji.D, & Mukherji, D. 2006).



Figure 19: Map of Kalapani, derived from South Asia Journals on 9/20/2021:  
<http://southasiajournal.net/dispute-between-nepal-and-india-worsen-over-territory-of-kalapani/>

The Mahakali Treaty was considered key to resolving the Kalapani border dispute. Nepal argues that India has encroached upon 19,500 hectares of Nepali territory, whereas India argues that the issue is over territory, not just water, and so it should not be viewed in relation to the Mahakali water dispute.

Instead of assigning blame, Nepal should have responded more proactively, relying on professionals rather than political elites. A national process like this one requires a national consensus across political lines. Cooperation with India on water issues was politicized

during the election campaigns. This created further complications, allowing India to take advantage of the internal divide. The Mahakali Treaty was a prominent example of evading Parliament to ratify the agreement with inadequate oversight. This was a major setback to any future consolidation of water treaties. Political rhetoric has long gotten in the way of productive cooperation, and six years after the Mahakali treaty was signed, there was no follow-up on provisions. The same bureaucracy that closed the door to civil society did the same thing to academia, stunting new ideas and impeding technical and socio-economic provisions offered through the treaty. Complete domination of the treaty by political elites, along with the suppression of innovative ideas, ensured that India was in prime position to maneuver the terms in its favor. Growing mistrust among political leaders further crowded the space for productive capacity-building by the various water resource stakeholders.

### **3.2 FACTORS CAUSING LACK OF COOPERATION:**

The Himalayan River has the potential to provide water to both India and Nepal. India needs its water for drinking, domestic consumption and irrigation, and Nepal needs it for hydropower generation (43,000 MW) and for economic development. Over the course of history, India has been strongly affected by flooding, especially up north. In 2008, three million people suffered immensely due to flooding that nearly destroyed sixteen districts. This has ensured that India places a high priority on flood control measures.

Nepal fails to acknowledge India's concerns on this matter, and instead blames India for not fully investing in water cooperation. Each country must work to understand the needs of the other to allow productive and equitable agreements. Nepal signed the Mahakali Treaty without paying attention to the details which continue to affect them today. The

meaning of border river is a matter of dispute and differing interpretations. Nepal sees a border river as something to which each country has half the rights. Under this interpretation, India can plan and develop projects using 50% of the river. India, on the other hand, interprets a border river as one where the benefits of infrastructure projects are divided according to the amount invested by each state. These conflicting views were never reconciled in subsequent negotiations.

Another issue of conflict is the consumption of water from the Mahakali River. Nepal says that the consumptive use of water is only quantified and limited for Nepal. Yet another issue is the Kalapani, a disputed area of roughly 35 square kilometers, situated in the trisection of India, Nepal, and China, where Indian troops have been stationed since 1962. This issue has an indirect impact on the Pachewar Project, as it is located on the border river. The location of the construction is yet another point of contention, with India stating that the location is more beneficial to Nepal than it is to India.

The treaty includes a provision to review the terms after a ten-year period, and it calls for arbitration when conflict emerges, two protocols that have not been properly carried out over the last two decades (Gyawali & Dixit, 1999).

### **3.2.1 Lack of Mutual Goals over the Water basin**

Many water scholars identify a difference in priorities between both countries in terms of water resource development. India is more interested in the Pancheshwar Project, while Nepal is more interested in Karanali Project (Dhungel, 2009). “The Karnali hydropower project site is located on the Karnali River within three districts namely Surkhet, Achham,

and Dailekh. It will feature a concrete gravity dam, headrace tunnels, a fish pass, feeder tunnel, surge and pressure shafts, and silt flushing tunnels.” (NS Energy, 2021). The controversy over the Mahakali treaty started soon after it was signed and delivered for ratification to Parliament. India told Nepal that ratifying the treaty was an issue internal to Nepal. Nepal in turn established an internal committee for the monitoring of the provisions, and they went on to sign the treaty in September of 1996, without adequately investigating its finer details. According to both the scholars interviewed from Nepal, the content of the Treaty was not explicit in writing and created many confusions later:

” The provisions were not studied and discussed widely among the scholars, water officials and policy makers. The interpretation of the treaty provisions became controversial in the later stages of implementation.” (Water experts, Nepal, 2021)

Many believe that India did not have clear goals and objectives. For example, the construction of the Pancheshwar Dam was never planned but was included in the treaty to ensure the gradual unilateral construction of Sarada Barrage. This further delayed benefits from being rendered to Nepal.

“The Pancheshwar project was considered a groundbreaking project for the development of the western region of Nepal, but it came to a halt. The situation created more power asymmetry between India and Nepal, while China’s increasing regional involvement created further strain and imbalance. ” (water expert, Nepal, 2021)

The treaty made no mention of the storage capacity of flood control, so it became an afterthought in other plans. Lack of cooperation over the last twenty-six years has had a

negative impact on flood control, irrigation programs, economic growth, and hydropower development in the region.

The Asian Development Bank and the World Bank had planned several development programs on the river basin but halted them due to the lack of cooperation. Track I options have unfortunately been unsuccessful in the case of the Mahakali River over nearly thirty years, as it has still not achieved what was projected for six months after the treaty's ratification.

### **3.2.2 Scarcity and pan nationalization of Water Policies**

Scarcity of water is another major impediment in fair and equitable water relations between Indian and Nepal. Where Nepal has more than average water availability per capita, India has less than average (Sunina shresta, n/a). Both in Nepal and India the private sector is busy extracting water for its own businesses. According to the interviewed water experts from Nepal

“Water trade is taking a high toll on the availability of water for public consumption.”  
(Water experts, Nepal, 2021)

The government has so far made no effort to regulate the private sector, and this leads directly to further scarcity. Nepal is far behind in water infrastructure, which causes a high level of wasted water. These poor water policies and the neglect of infrastructure will further strain the region in the coming years (Behr, 2008; Acharya, 2015). India has long-term water strategies, with a seeming interest in gradually gaining control of more of the transboundary waters. Nepal has failed to build the technical capacity for using experts to effectively plan water development strategies. Nepal's approach has been more reactive

than proactive when compared to India (Dhungel, 2009). Both countries fail to follow institutional mechanisms for managing transboundary water issues.

“The lack of effective coordination on institutional level is a huge obstacle for any achievements in terms of Mahakali treatment which is highly associated with the tense diplomatic tension and political upheavals between the two countries on water and non-water relation issues.” (Water experts, Nepal, 2021)

### **3.2.3. Politicalization of water interactions**

India and Nepal share a border of 1,800 km in the east, south and west. Both countries are sovereign, but in terms of size, population, military and economic growth, India is far bigger than Nepal. India and Nepal signed a Treaty of Peace and Friendship in 1950, which forms the foundation of the bilateral relations on multiple levels. Nepali move to India seeking jobs; around six million Nepali work and live in India. Both countries cooperate on trade and transit, as Nepal is landlocked and depends on India for import and export. Indian firms have invested in multiple sectors in Nepal, accounting for thirty percent of foreign direct investments. These ventures are engaged in services such as insurance, banking, education, telecom, power and many more. India has also invested in the development sector of Nepal. Its contributions have been in the areas of infrastructure, water resource development, health, education, and socio-economic development. The socio-economic developments include road construction, border demarcation projects and many others. India and Nepal also cooperate on the defense and security sectors, with India having invested in modernized weaponry for the Nepali army. Additionally, India offered training and capacity-building projects, including joint operation projects during times of

crisis, and India provided direct support to Nepali officer training at Indian defense institutions.

“The role of India is also critical in regional security and economic architecture. Trying to keep smaller countries like Nepal under its radar has led to several instances of direct and indirect interference in Nepali political decisions. India has taken control of Nepal’s economic and political decisions in order to keep China’s influence at bay.” (Water official, Nepal, 2021).

India and Nepal are both Hindu majority countries. Despite sharing many of the same cultural traditions, recent political relations have been less than friendly. This kind of hostility is not new, as many Nepalis have been carrying anti-Indian sentiments for several decades. Over the course of history, the Nepali have remained silent and exercised caution to maintain economic and political ties with India. In recent years, due to China's support of Nepal in the economic sector, the Nepali have exercised more freedom to express their resentment against India.

Despite cooperation on trade issues overall, there have still been huge disagreements over trade and transit. India’s interference in the political and security environment of Nepal creates further conflict between the government and the people of Nepal. India provides backdoor support for Mahadeshi and their role in instigating violence and internal division within Nepal. Historically, India has exercised a certain level of power over Nepali politics. This interference has created an environment of mistrust and antagonism between the two countries. India has failed to hold up its end of several agreements, which has only furthered the divide.

India wanted a centralized government so that it could streamline negotiations, but ultimately Indian authorities had to interact with each federal government separately. Landlocked Nepal has always depended on India as a trade route available for the safe passage of its goods. The road was blocked in 2015 without any warning from India. This prevented several vehicles from entering Nepal, and, as a result, Nepal had no fuel for several days, which India blamed on the protestors at the border. For Nepal, this was a display of power on the part of India.

“The Nepali believe that India controls Nepal, reaching out to multilateral donors and regional organizations for developing the water resources in Nepal. India has followed the policy of buying water projects from Nepal in order to have control over the distribution of benefits in its own favor. This gatekeeping policy has also affected the water officials in Nepal, rendering them inactive and unmotivated to seek donors and partners other than India for the development of the water sector.”

The two countries have established a joint security mechanism, called the Nepal-India Bilateral Consultative Group, to protect the borders. India also has a regiment of soldiers from Nepal with the India armed forces to bolster security cooperation. This kind of measure for India is to safeguard a weaker neighbor sandwiched between two powers; it is also to limit Chinese influence in the territory, which is porous and can be easily infiltrated. India maintains that this is a mechanism for protection of both countries, while Nepal sees it as a thinly veiled attempt to maintain hegemonic control over Nepal’s politics, keeping Nepal under its encroachment policy. China continued to bring Nepal further under its influence through strategic economic regional projects, such as the One Belt One Road

Project, which far exceed any recent investment from India. China is currently among the largest foreign investors in Nepal, and India's influence is waning. In response, India has been trying to use cultural links between the countries as a means of connection. India adapts to changing political landscapes to continue its pursuit of influence within Nepal.

### **3.2.4 Lack of attention to Environmental Issues**

Nepal is reaching a point of environmental crisis, with the growing rate of industrialization, the poor management of waste products, climate change and extreme water pollution. Nepal is the second country in the world in terms of water abundance; available annual water per citizen is 9,000 cubic meters, which is the world's second highest rate. Despite this, nine million people suffer from lack of access to clean drinking water, and more than thirty percent of the population lives below the poverty line. This problem is associated with a lack of sound water policies, poor management of water resources, and excessive pollution of rivers and aquifers. The estimated daily rate of waste product discharge into rivers is 150 tons. Water contamination from poor sewage systems is a leading cause of public health problems in Nepal. Due to lack of proper water infrastructure, people drink from rivers, ponds, canals, and springs containing high levels of bacteria and viruses, causing serious waterborne diseases such as typhoid, cholera and other intestinal diseases. About 44,000 children die yearly due to waterborne diseases. The Department of Water Supply and Sewage in Nepal indicated that, despite eighty percent of the population having access to water, most of it is not considered safe to drink. The villages depend on wells for water, which continue to be polluted by arsenic in the ground. Only twenty-seven percent

of Nepali have access to sanitation, and the rest use rivers and springs for washing and bathing, causing additional pollution and contamination (Sunena Shresta, n/a, Suwal, n/a). “Lack of infrastructure, especially in the mountainous areas, also limits the population’s access to water. It is mostly female members who are fetching and transferring water for daily consumption. Nepal needs to educate and create initiatives to raise awareness about the potential hazards of waterborne disease caused by lack of sanitation.”

Nepal faced another water crisis during a hard 2015 drought that left millions of people devastated and left villages destroyed. The death toll was 7,000 with 9.5 million seeking humanitarian aid. A growing population further exacerbated the situation. The current level of water demand remains 320 million liters, and the availability is 120 liters of water. The remaining deficit is a result of a lack of pre-planned programs to meet the growing needs of the population (suwal, n/a).

Water scarcity is one of the leading challenges in India, and it is in large part due to a growing population, an increasing rate of glacial melting, and the pollution of water resources. Both countries, on several instances, have blamed each other for the massive flooding happening on the Mahakali and Kosi Rivers. The main causes of the flood were not investigated properly, and, even in the case of Mahakali River, the findings of the research committee were kept confidential, which only raised further questions among the people.



Figure 20: Ganges River Basin derived in Dec 2021 from, *The race to save the Ganges River*: <https://www.reuters.com/graphics/INDIA-RIVER/010081TW39P/index.html>

### 3.2.5 Lack of Trust

A lack of trust and a lack of institutional mechanisms for conflict prevention and resolution have impeded the implementation of the Mahakali Treaty. India failed to fulfill its part of the agreement, which was to build the Pancheshwar Dam under the Mahakali Treaty, and the delay caused further opposition to the treaty's implementation. Many people of Nepal blame India for being unjust in the exploitation of transboundary water resources throughout time. Many Nepali blame India for failing to respect its sovereignty. Negotiations will only be effective if Nepal can trust that India is acting out of more than just its own self-interest. Previous water treaties are regarded as beneficial to India with Nepal having little to show for them. Their contents are seen as reflections of extreme

power asymmetry between the countries, and they clearly fail to account for mutual interests and needs.

India and Nepal must collaborate on data collection to truly work together on water management and development. There must be a mutual understanding on the provisions of each treaty so that each side applies the measures consistently and reciprocally. India's unilateral construction of the Tanakpur Barrage on the Mahakali River, without seeking the consent of Nepal, was regarded as an act of hegemonic control over a weaker riparian state, and these are the sort of acts that must be mitigated. The treaty was to be reviewed, which has still never been materialized. Hydro-hegemony has played a key role in the delay in the implementation of the treaties. In this water basin, hydro hegemony is the result of various components of states interactions that vary in power dynamics. Though hydro hegemony can be either positive or negative, in this case India has not coerced Nepal to enter the agreements and all the treaties were based on consents. However, the public and officials have felt the pressure to comply with India's agenda. Nepalese public believe that its government had to react to what was proposed by India. Therefore, all forms of cooperation were based on hydro-hegemony than meaningful cooperation between the co-riparian states.

### **3.2.6 Power Asymmetry**

India's and Nepal's tension is the result of power asymmetry, in which India has exerted its power over Nepal through several bilateral treaties. As a result, water resources have remained underdeveloped, and both countries suffer the cost of a lack of meaningful cooperation. The treaties of the Kosi, the Gandak and the Mahakali are examples of power

imbalance in action (Upreti, 2012). India has played the role of hydro-hegemon in this water interaction; hydro hegemony happens when one state exerts its power on the other state which can lead to positive or negative outcome in the context of transboundary water interaction. In this cases India was successful in exerting pressure on Nepal due to huge asymmetrical power relations, that can be better described using the three pillars of hydro-hegemony framework outlined by Mark Zeitoun, 2006.

- Position power/Geographic power
  - Material Power (military, economic and others)
  - Exploitative power (power to manipulate the negotiation, extract
  - Discursive Power (power to set narrative or ideational power)
- **Position/geographic Power:**

In the framework of hydro-hegemony the position of riparian is considered critical in shaping power dynamics. The upstream riparian is considered to have more power over the downstream co-riparian. However, in this case Nepal as an upstream riparian has limited power as India is considered one of the key regional actors with more resources, population, and other forms of material power for which Nepal is highly depended on. Therefore, the role of geography and position is minimal in this case.

- **Material Power**

Nepal and India are incomparable in terms of their economic statuses. Nepal is an economically poor country with an annual GDP per capita of 470 USD, and around forty-two percent of people live under the poverty line. Nepal lacks the capital and the technology

to develop its water infrastructure for industrialization and economic growth. India has financed projects in Nepal over the course of history, but it has been mostly for its own irrigation and flood control purposes. Nepal is dependent on India in terms of trade and transit. India has invested in border security and services in several sectors supporting trade and investment. Nepal's dependency on India's material capacity has created a power dynamic where Nepali politicians are reluctant to openly oppose their benefactors. India has, however, also supported anti-regime elements, indirectly leading to an energy crisis and making Nepal increasingly vulnerable and dependent on external material support. The unofficial blockade of Nepal, after the consolidation of its constitution in 2015, pushed further economic strain on the Nepali government.

Due to widespread involvement of India in the economic affairs of Nepal, it is hard for the Nepali government to approach China or accept any kind of investment from the Chinese in water resource development. One example is the cancellation of a \$2.5 million hydropower project of China's, due to heavy pressure from India to refuse the purchase of energy if a dam is built through Chinese investments (Swain, 2018).

Nepal's dependence on India due to its landlocked position is inevitable; Nepal depends on India's ports and on employment opportunities for over six million Nepali. This dependency has recently been receding, but there is still a lot of work to be done for Nepal to stand on its own economically. Nepal has also signed a friendship peace treaty with China, ten years after signing a similar treaty with India. Nepal has received support in development aid from the Chinese government, most notably in 1967 with its support of infrastructure projects. Nepal began exploring its market with China during the 1970s to

diversify its relations and reduce its sole dependency on Indian markets (Ahmed Dar, 2021).

Nepal must constantly seek opportunities for better economic policies, for curbing corruption, and for becoming an active participant in regional geo-politics. Otherwise, considering current circumstances, this kind of asymmetric economic power can create an environment of dependency where the stronger riparian can influence decisions of the weaker riparian, leading to unequitable and unjust water relations. However, the economically weaker riparian can utilize other avenues to benefit from the interdependency, such as discursive or negotiation power. Nepal must devise a clear plan to hold its own in negotiations going forward.

- **Technological Power**

Nepal is estimated to have 6,000 rivers, giving it enormous potential for the generation of hydropower—as much as 42,000 to 80,000 MW. The country is currently using only 0.6% of its hydroelectric capacity, which provides electricity to forty percent of Nepal's populations (Pokharel, 2013; Water Resources of Nepal, 2019). Due to lack of capital and technology, however, the country still depends on foreign investors like India and China. This position of dependency has sandwiched Nepal between two stronger regional powers. Nepal has made incremental gains in terms of irrigation project development, to attain the technical capacity to implement large-scale water projects still seems a distant vision. Nepal lacks the capacity to construct or even to purchase and import the technology needed. Nepal also lacks roads that would enable the transport of equipment to the high-altitude areas where hydropower infrastructure would be built.

- **Negotiation power**

Nepal, compared to India, lacks the technical and economic capacity to invest in developing its water infrastructure and resources. The country must therefore increase its negotiation capacity or soft power. Political fragility, economic dependency, lack of policy, and lack of qualified representatives all contribute to a reduced negotiation capacity.

Nepal has missed many opportunities to engage in productive water negotiations. The country's passivity has cost it dearly, and that inaction stems from a lack of informed experts to advocate for national water needs. India has easily exploited water rights in the area, in large part because Nepal has lacked the assertiveness and readiness to secure benefits for itself. The country must build capacity of its officials and conduct data-driven, outcome-oriented negotiations, without assigning blame to India. Nepal is currently suffering from ten to eighteen hours of load shedding and has been able to utilize only three percent of its energy potential, despite having access to huge water reservoirs (Water Resources of Nepal, 2016).

Political shifts within Nepal have highlighted inequitable water agreements with India, and the voice of opposition has become more audible. The geopolitical climate has changed, and democratic elements have more voice in the public sphere. Increasingly, scholars, civil society and water officials openly critique policies and change the narrative. Awareness-raising and open dialogue among different political parties has allowed for more public participation in water negotiations. (Water expert Nepal, 2021)

Open media and public access to information have changed the landscape to one in which the government can no longer make decisions without the public eye on them. People's power can push policy makers to be better prepared on the agenda developed by the Indian side, see the potential loopholes and be clear on cost and benefits of pursuing a weak negotiation strategy.

- **Discursive Power:**

International politicians in Nepal have varying perspectives regarding water interaction with India. Politicians have used water to further their political agendas under the guise of nationalism. This has led to an increasingly disillusioned Nepali public who is skeptical of future treaties with India. The Mahakali communication is just the latest in a series of treaties that results in benefits weighted in India's favor. The over-politicization of the Mahakali Treaty is an example of politicians with misplaced priorities.

India defends its position as a downstream riparian state that may benefit from international rivers, supported by law. India asserts that the Mahakali's waters are necessary to India's development and maintenance, and that Nepal should allow them to take the share that India deems necessary. The Nepali believe that they have already been extremely generous in the Kosi and Gandak agreements by providing India more benefits than Nepal. Water relations between countries have remained controversial, and that continues to stall progress in the development of water resources and water management in the region.

In this case India has used the following two strategies to control and exert pressure on

### **3.2.7 Nepal *Negative leadership/domination Strategy,***

Hydro-hegemon can use power to either positively or negatively influence the outcome of water interactions. Positive domination can prevent conflict, allocate resources, and ensure the effective and efficient manner to develop water resources. However negative domination can pressurize riparian to comply with the provision of the treaty that is less beneficial to weaker riparian (Jägerskog and Zeitoun, 2009). In this case India has first acted and then negotiated with the Nepalese side. India has contained the information/ data and captured the resources or benefits derived from waters before signing the treaties with Nepal. India has unilaterally drafted the contents of the treaties and managed water resources, conducted feasibility studies, and did construction on the water shared basin without inclusion of Nepal (Gyawali, 1999).

India can retain far more control by dealing bilaterally with individual nations, rather than attempting multilateral channels where power asymmetries are less pronounced across multiple nations.

“India is aware that making any kind of multilateral deal would significantly reduce its control, autonomy, and legitimacy over water resource allocation. Therefore, it refrains from any kind of regional or extra-regional organization or multilateral arrangement.” (International water expert, 2021).

2) **Containment Strategy:** India has used containment strategy and influenced politically Nepal side to sign the four treaties since 1920 and has not guaranteed the equal benefit-sharing for Nepal. (Jägerskog, et al., 2009). Little preparation time was given to Nepal in terms of signing the Tanakpur Treaty, where senior water officials including the Minister

of water resources was not present in the 72-member delegation. And the agreement was not included in the Prime Minister's agenda in advance (Gyawali and Dixit, 1999). The Mahakali Treaty also was signed in haste and lack information about the benefits for India. Lack of open diplomacy contained information and lack of time for Nepal are considered some of the major tactics used to dominate the water treaties. India utilization of power to control the interactions between both countries is vivid in signing of each treaty and it is marked as negative hydro hegemony by many scholars, water officials and public in Nepal.

### **3.3. STRATEGIES TO MITIGATE POWER ASYMMETRY:**

Considering the current power imbalance, it is hard to believe that a more cooperative solution is possible between the two co-riparian states. However, Nepal can utilize some strategies to ensure to optimize its benefits from the shared water resources. It is not possible for Nepal as an upstream riparian to completely shun its water flow and it is not in favor of both riparian water and non-water issues. These waters pass through huge populations with diverse interests and conflicts, both within and across country lines. Conflict and cooperation in the region have fluctuated throughout history and continue to do so. The Mahakali treaty is currently operational, but there are disagreements over its main provisions. These conflicts could be resolved by focusing on equitable water rights, including fair benefit sharing through the adoption of a needs-based approach rather than one that is based on position and power. Nepal can rely upon soft power sources to elevate its position in any current and future water interactions. As both countries share religious, cultural, and historical backgrounds cooperation is possible on equal terms but for that Nepal has to first learn from its past approaches. Nepal can embolden its role by increasing

the effectiveness of its institutions, investing on research and data generation, Nepal should also understand its dependency on development of water resources and should expedite well-informed cooperation than delaying the negotiation and implementation of water treaties. Any impasse created by Nepal can further delay the benefits accrued for Nepal. Nepal serves as an excellent site for development of water dams and renting its water sites can play a key role in fighting poverty and India is highly desperate to build these dams to control flooding to its territories. These dams can also generate huge amount of electricity which India can be a huge recipient (Gayawali, 1999). Nepal can use India's dependency on Nepal as a major source of power in conducting any kind of negotiations. India also faces major water shortage especially due to growing economy and urbanization. India is desperate to meet its electricity needs and water supply and Nepal can provide such opportunities. India relying on 70% of water of Ganges which flows from Nepal can be exploited for the benefits of Nepal if the water officials and leaders can learn from the past interaction. Nepal can also invest in regional institutions to align with other weaker riparian states to enhance its power dynamics in water interactions. India should also understand that positive leadership will further encourage Nepal to learn more towards cooperation than creating delays the impasse. Cooperation is more valuable to both parties than domination and unilateral resource capture strategies which can only bear short-term benefits but negatively affect long-term development of benefits derived from waters. Therefore, non-cooperation can be a source of raising power by Nepal side. However, the effects of this on other bilateral security and economic fronts need to be considered.

Enhancing Institutional Capacity, building regional allies

The capacity of Nepal's national institutions is key to determine the fairer playing ground during the negotiations. Nepal needs to invest on its human resources to conduct better quantitative and qualitative research on its TBW and improve the level of expertise among its water officials. Water experts in Nepal should also pay high attention to the details of the treatments and its vivid and unvivid provisions and legal obligations to better understand the loopholes. The better data and information available the stronger the judgments and negotiations can.

Nepal can also involve other riparian and build coalitions to safeguard its and other weaker riparian's such a Bangladesh's position in the regional institutions. Regional organizations such as South Asian Association for regional water cooperation is key in facilitating dialogue and cooperation among the states (Pant, 2012).

Several committees have been set up in Nepal for addressing transboundary water issues, but they are ineffective. All technical issues remain highly politicized, which requires the parties to seek high level political consent. This only further limits cooperation between India and Nepal and further consolidate power asymmetry between the co-riparian. Nepal can organize civil society across the region to initiate dialogue on fair and equitable water resources development. This will help the young generation of leaders to attend to water interactions from shared resources perspective than resource capture mindset.

No institutional framework was available in the coordination of bilateral water discussions on the Gandak and the Kosi. For better coordination of the Mahakali treaty, states created an India-Nepal Joint Committee on Water Resources (JCWR) in 2000, which helped to ease inequity in the four years following its signing. It was meant to create several

committees on the proper coordination of provisions, but in the end, nothing really has been achieved. Nepal has issued multiple complaints regarding its share of the benefits.

#### Increasing avenue for Information Exchange

The actual use versus the imagined use of water should be assessed correctly. Climate change is making a difficult problem even worse. Drought and flood seasons have been changing, and data must now be updated constantly to remain relevant. Nepal is lagging in data generation due to a lack of financial and technical support.

The discourse on good versus bad dams can provide community ownership and justify the sustainability of dams in the longer run, by introducing alternate technologies, including locally owned approaches. According to the Nepal water official a distinction of good vs bad dam is critical in making any decision regarding the construction of dams.

“The distinction between good and bad dams must be made before any treaty is signed, and we must not dismiss all dams, as they bring multiple benefits in some places.”( water official Nepal, 2021).

India and Nepal have unequal access to information. Where India has conducted several feasibility studies, Nepal has lagged behind in data collection and research studies. India, on several occasions, has shared studies with Nepal to assist in the country’s progress, but Nepal has been slow in replying and coordinating efforts around transboundary waters. One of the major reasons for Nepal’s reluctance to act based on the data is a general mistrust that India is providing accurate information. There have also been occasions when India refused or failed to share requested information with Nepal. This dynamic has been a major hindrance in the implementation of treaties.

In the case of the Mahakali Treaty, the static nature of this document has led to ineffectiveness as the political landscape has changed and grown. The asymmetrical relationship between India and Nepal has kept the latter from pursuing any meaningful reform. According to the Nepal water expert Data is the main instrument of control in terms of transboundary water conflict.

“India is not sharing the data, and, in many instances, these data are considered a matter of high national security. Data is being withheld as an exercise of power over the use of the river basins. It is not a technical issue but a political issue.” Water expert Nepal, 2021)

Nepal needs to invest in generating reliable data to have a better and firm position in the negotiations around water treaties. Nepal can also take the help of international organizations to build its capacity in developing and collecting reliable data on its water resources. This can be another approach to counter the soft power of India.

### **3.3.1 De-politicization and De-securitization of TBW diplomacy:**

India deals with hydro-diplomacy cautiously in the Ganges Basin. Besides Nepal, India also shares waters with Bangladesh as a downstream riparian state. Any approach that endangers bilateral relations with Bangladesh can also trigger a similar reaction from Nepal. Despite all the proactive measures to mitigate power asymmetry and enhance cooperation the path to overcoming political obstacles and inequitable water benefits remains long.

Considering the current geopolitical realities in the region, the increasing role of China, and the continuous promotion of democratic institutions, civil society has started to

flourish and now enjoys a more vibrant role. The current environment is conducive to re-negotiating the Mahakali Treaty or starting over on a new treaty.

River basins become highly politicized when power-asymmetry is high. Securitization tends to shift international water affairs away from the Water Ministry and toward security agencies, which further complicated the dynamics. Research and data become highly political, which limits the role of academics.

When studying transboundary water relations, the context of the entire relationship over time is crucial to understanding current circumstances and power dynamics. The media and civil society have allowed Nepal to diversify its perspective on water cooperation. Not only on formal platforms, but also through informal communication among stakeholders, community leaders and influential. This lends itself to creating the environment of trust and cooperation that the region has been seeking for so long. Water cooperation can be better planned if attention is given to the bigger picture of long-term and shared goals, rather than focusing solely on the physical process of sharing water.

### **3.3.2 Bolstering Track II Diplomacy**

The state of Nepal must be more inclusive of water science, including the voices of both formal and informal economies in generating solutions. The states must invest in hydrology and meteorology to better predict the parameters of the monsoon season. Treaties must be evaluated regularly to ensure that they account for the changing circumstances in this complex geopolitical region. Transparent data generation and sharing is a key indicator of a harmonious interstate relationship. It is time for both states to finally address the

dysfunctional aspects of the Mahakali Treaty and begin to remedy the suboptimal provisions with relevant data generated over the last twenty-six years.

Civil society must use modern means of communication to voice views and gain and contribute to the understanding of this complex issue. The hydrocracy, the shareholders, the dam builders—the influence of these financially-motivated parties must be kept in check, so that a more direct path to water development programs can be realized—one based on a genuine intent to act in the best interest of each nation involved.

Academics, through Track II diplomacy, and civil society, through Track II channels, are allowing new ideas to circulate—ones that involve long-term, comprehensive solutions rather than short-term, project-based remedies. Discourse has been productive, expanding the historically narrow approach to transboundary water cooperation.

### **3.3.3 Harmonizing National Politics**

Regional cooperation is key in fair and equitable transboundary water management. Power asymmetry can be balanced by harmonizing national water policies. Currently, each country follows its own policies, which creates further divide. These policies must reflect the current quality standards, discharge standards and pollution control mechanisms. The regional water index must be more pragmatic considering current socio-economic conditions in each country, and all parties must exercise political commitment to the implementation of plans. Furthermore, climate change must be addressed in the Ganges River, and climate proofing will be a crucial step in any development project on the river basin. Multilateralism, although challenged, is nonetheless emerging in the region and

offers the hope of more room for novel ideas and an increase potential for long-term, sustainable, and harmonious joint water development projects in this complex region.

#### **3.3.4 Changing the rhetoric to cooperation vs statement:**

The negative rhetoric by the Nepal side is considered distractive and bear no results in mitigating power asymmetry and enhancing cooperation. Instead of blame game, Nepal should look inward towards its own homework to invest seriously in engaging constructively in water interactions. Politicians who promote public to engage in negative rhetoric against India create further divide and hatred and push back the entire willingness for cooperation. Therefore, the discursive power around water interaction should be formed on the narrative of interdependence, benefit-sharing and integrated water management plans.

TBW cooperation is a sensitive matter for Nepal since the bitter experiences of the past treaties. India on the other hand is suffering due to delay in the water treaties between both the countries. To garner trust India should come forward as a positive hydro-hegemon due to its high power and put forward equitable and fair treaties using international customary laws as the basis to ensure the joint development of water resources in the Ganges River basin. On the other hand, Nepal should understand and work upon its water priorities and be more active to work in a cooperative manner with India.

#### **CONCLUSION:**

The Mahakali treaty is regarded as a great step toward water cooperation, especially in contrast to prior treaties signed between India and Nepal. This one highlighted the need for the boundary river to ensure optimal benefits for both riparian states, in proportion to the

cost incurred by each party. This was a unique step that was missing in other treaties. Despite its good points, the treaty created misunderstanding and complications in several areas. It ended up leading to mistrust, disagreements over geographic planning, environmental issues, and secret political agendas.

Nepal and India have wasted so much time in the development of benefit-sharing from the Mahakali River, all because they lack mutually agreed upon goals and visions. The development of hydropower dams, flood control and irrigation have equal importance to both countries. This is an ideal time for both countries to come together and cooperate on maximizing the benefits to both parties using long-term, sustainable development of the basin that fosters economic growth. Nepal must remove itself from the position of being figuratively wedged between India and China in terms of geopolitical influence, applying a technical and methodical approach to negotiations. India's friendlier treatment of Nepal as a weaker riparian can be more beneficial for both India and Nepal. Both countries can make greater achievements by applying a win-win approach for both nations. Water cooperation over the Mahakali River could help repair relations following the economic block of Nepal by India in 2015, boosting the efficiency of cooperation on other political and socio-economic issues.

India and Nepal must take some key steps to break the impasse on treaty implementation: They must agree upon the cost allocation at a policy level without considering the location of the Lower Sarada system's existence within the treaty. They must implement the Chandani-Dodhara irrigation system immediately. Nepal's right to withdraw water should be protected. India's right to unhindered downstream flow should be preserved.

India is rich in land and scarce in water. Many people in the region have become used to four months of drought and four months of flooding. Generations of people used traditional methods for irrigation which were later replaced with British model of water development, which many argue has been counterproductive to the development of effective water management.

Water officials and policy makers have failed to view water issues holistically. Concentrating only on melting glaciers does nothing to improve the utilization of other available water sources, and all too often, politicians have had an incredibly narrow focus on small aspects of the larger transboundary water dilemma.

## **CHAPTER FOUR: UZBEKISTAN AND TAJIKISTAN WATER RELATIONS: ROGUN HYDROPOWER DAM**

### **4,1 INTRODUCTION:**

The case of Rogun Dam occurred during the conflict between Uzbekistan and Tajikistan. Both countries' bilateral relations have remained sour for years over the construction of this dam. For Tajikistan, Rogun will be one the main sources of hydropower production which supports their economic growth and paves the way for poverty alleviation in the area. Rogun Dam is one of the priority developmental programs that properly utilizes water resources as a way of energy security and water security as it can store excess flow of water during the wet years. Energy security has been a major concern for all countries in the course of history but especially in recent years because of rapid population growth, economic development, and climate change. Energy security is the major driver of economic, social, and political stability. It is of paramount importance for every country to ensure proper utilization of its own water resources and begin working toward improving and securing energy. Energy security also minimizes the negative unintended consequence of any country's developmental strategy and avoids potential spillover of conflict and tensions with the riparian states. Tajikistan specifically remained at the mercy of Uzbekistan for a long period before being finally able to pursue to carry on its work on Rogun dam due to asymmetric power relations. Despite being cognizant of the regional water framework, Uzbekistan perceived any development to be harmful for its water resources.

Rogun dam is situated on the Vakhsh River. Recently, Rogun Dam is one of the most concerning cases of water conflict because of the unbalanced water endowment of Central Asia. According to the Global Water Security report the Amu Darya basin faces “inadequate water agreements, degradation of water quality and disruption of flows and power water management” (Global water Security, 2012). Water has been a source of conflict between people, tribes, cities and countries and it has also been a driver for peace which brought divergent factors together to resolve a common challenge. The water dispute between the Amu Darya riparian states can also turn into an opportunity for increasing regional cooperation. This would result in sharing to ensure everyone’s needs are properly addressed.



Figure 21: Map of Amu Darya River Basin (Map illustration by Ana Henke, New Mexico State University, USA). Red star – the Rogun Reservoir

#### 4.2 ROGUN HYDROPOWER PLANT BACKGROUND:

The construction of Rogun dam was conceptualized in the 1950s and 1960s by the Soviet Union. The Soviet Union planners proposed to build three large scale dams including Nurek, Sangtuda and Rogun on Vakhsh River. These three projects' primary purpose was to expand irrigable lands in Tajikistan to the downstream riparian states Uzbekistan and Turkmenistan. The projects would also provide electricity for industries in Tajikistan through a mutually beneficial mechanism. (Eli, 2013). The project's early construction steps were taken in 1976.

The government of Tajikistan is constructing Rogun hydropower facilities on the upper reaches of one of the main tributaries to the Amu Darya, the Vakhsh River in the Pamir Mountain ranges. The government started resuming works initiated by the Russians in the 1980s and the key infrastructure for example tunnelling were already completed, Tajikistan

started working on the project in 2014. Rogun hydropower facilities are located nearly 70 kilometers upstream of the Nurek hydroelectric power station which has been operational since 1980. The dam is approximately 110 kilometers away from Dushanbe, the capital city of Tajikistan. In the interview with the Tajik water expert, he mentioned:

“The economic benefit of Rogun dam is enormous for Tajikistan, it will double the energy. Supply and Tajikistan have already begun cooperation with Afghanistan and Pakistan to export electricity. This project will help the Tajik government to provide its population with opportunities for alleviation of poverty.” (Tajik water expert, 2020)

The estimated “3.9 billion hydropower megaproject is expected to be the biggest hydropower station in Central Asia with 335-meter height core rock-fill dam with a crest elevation of 1.3 kilometers above the sea level and will have the world’s tallest embankment dam structure overpassing 305-meter height Jinping-I dam on the Yalong River in Sichuan in China.” (NS Energy, 2021). According to the plan of the government of Tajikistan, Rogun hydropower station is to be completely operational in 2028 and the 3.6 GW hydropower station will generate approximately 13,300 MW of clean reliable electricity per year. Rogun dam creates a 110 square kilometer reservoir surface and has a storage volume of nearly 13.3 cubic kilometers. Rogun will be 220 meters long, 69 meters high and 21 meters wide.

By completion, the Rogun power plant is expected to cost 3.9 billion and have an operational life of 115 years. Tajikistan struggles to finance the project, however the

country raised almost 185 million dollars by creating public shares of the project and also put up around 500 million in 10-year bonds with a yield of 7.124 percent. As of now, the dam's construction has reached about 75 meters heights with one turbine out of six currently in operation. For the dam to reach 335 meters heights and all 6 turbines installed, it has a long way to go toward completion. The Rogun dam generates 3600-megawatt electricity with 600 MW through each turbine. The Rogun dam output will not only address electricity deficit in Tajikistan especially during the winter, but also it enables Tajikistan to export electricity to South Asia via the Central Asia-South Asia Power project (CASA-1000) to Afghanistan and Pakistan. According to analysts, the 13.3 cubic kilometer reservoir that Rogun Dam creates will irrigate approximately 300,000 ha of arid land. In Tajikistan (Power Technology, 2021).



Figure 22: Map of Rogun Dam, Derived from google map: 8/20/2021 [Rogun dam map image –](#)

#### **4.2.1 Conflict and Cooperation events:**

The progress on Rogun Dam slowed and periodically halted following the independence of Tajikistan. Work progress on Rogun dam stalled also because of financial constraints and setbacks, natural disasters (such as floods), legal restraints and unimplemented agreements, and even the social unrest and civil war in Tajikistan. Apart from financial barriers and political instability, the main conflict period/event was in 2009 when transmission interconnection was stopped, and electricity trade stopped. And in the subsequent events Tajikistan's downstream neighbor Uzbekistan has had serious concerns about the Soviet Union water policy and the legacy that the region inherited after the collapse of the Soviet Union (Eli, 2013).

The Nurek dam, from inception and design stage to completion and being operationalized, was built in almost 11 years. This dam regulates water flow to Uzbekistan mainly for irrigation purposes and producing 3000-megawatt electricity for Tajikistan. Water energy exchange between the downstream and upstream riparian party proved to be unfeasible in the free market after the collapse of the Soviet Union. Downstream riparian's provided gas and fuel for Tajikistan in exchange for water for irrigation due to constant price fluctuation of energy (Murodbek, 2009).

Each riparian state has their own interpretations about Rogun's implications on their economy, energy sustainability, and their countries' development agenda. Approaching such a critical issue with a unilateral approach makes them advocate their positions from

their own perspective. From analysts' perspectives, dealing with the case of Rogun dam with such a self-centric approach and ignoring other party's needs, it gives "the impression of being a prisoner's dilemma case from a regional cooperation point." ( Eshchaanov, Stultjes, Mona and Eshchanov, 2011). Therefore, some studies of the Rogun Dam conflict case, raise an important question whether "the Rogun dam is a path to energy independence or security threat." One of the issues of conflict was the height of the dam. Regarding the dam's height, some studies presented that Russian plan proposed to build a shorter dam, yet the president of Tajikistan requested it to reach the height of 335 meter. (Reference). Tajikistan's position is considered rational as some studies indicate that large dams operate and sustain better, are economically more feasible and create less environmental negative consequences compared to other means of energy production facilities powered by fossil energy (Bartle, 2002).

However, some scholars also believe that mega hydropower projects create social, environmental, and political disadvantages. For instance, large dams can cause floods and unwanted change to the ecosystem as well as forcing indigenous residents to resettle from their adopted homes. Many of these results, even in transboundary water conflict (Marc, 2010). Studies use Egypt as a case study wherein Egypt built the large Aswan dam which had negative implications on the region's ecosystem. This especially affected the downstream riparian fishery and agriculture (Alam, Mirza and Maughan, 2009). Constructing a large dam will better serve if both the upstream and downstream riparian

states work together collaboratively and avoid any possible unintended and undesirable negative impact.

Bahtiyor, Mona, Sanaatbek and Ruzmboy in their studies of Rogun Dam – Path to Energy Independence or Security Threat point out a very interesting concept entailing “conventional security theory encompasses the ways of identifying and responding effectively and properly to any external or internal threat or aggression with the means of military force. It used to serve as a basis for any national security doctrine before the end of the Cold War. Today, threats may be not only military as traditionally described, but may include a variety of other forms. The unconventional security threats such as environmental, economic, social and political threats, gained more importance after the end of the Cold War period, expanding the scope of the security-based studies.” (2011). From the perspective of Uzbekistan, Rogun poses environmental and economic threats to itself. Also, Uzbekistan President Shavket Mirziyoyev is unlike his predecessor who conducted campaigns against Rogun dam at international level. Mirziyoyev has stepped up to cease contentions and enhance ties with Tajikistan.

“The reasons were not only water per se, but several other political, social and economic issues intertwined with the construction of the dam, depoliticization of the issues, breaking from the baggage of past bilateral relations established under the USSR regime, could play as a catalyst to lower the level of tension.”

The conflict between the upstream Tajikistan and downstream Uzbekistan has several dimensions including social, economic, and environmental aspects. According to the Central Eurasia Standard Studies, the two countries might move toward peace because of Rogun hydropower plant ( Stephen, 2013). The two countries have different opinions about the impact of the Rogun dam. The upstream Tajikistan is concerned with addressing its electricity deficit and exporting the surplus for generating income and boosting its economy. Whilst Uzbekistan argues that construction of Rogun dam severely impacts its agriculture-based economy. (Stephen, 2013).

#### **4.2.2 Environmental concerns:**

Uzbekistan also has technical environmental concerns, especially about the increasing seismic activity in the areas where Nurek and Rogun are situated. Both Nurek and Rogun are situated on Vakhsh River on the same cascade 70 kilometers away from each other. Nurek has a reservoir volume of 10.5 cubic kilometers with increasing seismic activity in the reservoir (Simpson, 1981. Any potential damage to the dam can lead to a catastrophe for Tajikistan, Uzbekistan, and Turkmenistan (Uzbek Expert, 2011). Furthermore, studies on climate change, including the United Nations Water View on Climate Change, indicates that “increasing temperature and less predicted weather conditions are projected to affect availability and distribution of rainfall, snowmelt, river flows and groundwater, and further deteriorate water quality. Low-income communities who are already the most vulnerable to any threats to water supply are likely to be worst affected. More floods and severe droughts are predicted. Change in water availability will also impact health and food

security and have already proven to trigger refugee dynamics and political instability in the global level.” (UN Water and Climate report 2021).

The UN water 2021 report highlights that “over a fifth of the world’s basins have recently experienced either rapid increase in their surface water area indicative of flooding, a growth in reservoirs and newly inundated land; or rapid declines in surface water area indicating drying up of lakes, reservoirs, wetlands, floodplains and seasonal water bodies.” (UN Water and Sanitation Report, 2021). Fresh water scarcity is a major concern; water is becoming more important in water-stressed Central Asia. A USAID Special Report on global water security denotes that water-stressed areas will increase significantly throughout the world including North Africa, the Middle East, and Asia (ICA, 2018). Considering the crisis of the Aral Sea, Central Asia is one of those water-stressed regions. The report further indicates that water stresses amplify tensions and increase challenges such as poverty, social tensions, environmental degradation, ineffectual leadership, and weak political institutions. The report also highlights another important fact: 60 percent of the 276 river basin watersheds that are shared by at least two countries lack any type of agreement governing shared water resources. Perhaps the Amu Darya River basin riparian should revisit the governing agreements of the basin.

#### **4.3 PARTIES WATER INTERACTION: POWER ASYMMETRY**

Uzbekistan is a landlocked country; it has approximate population of 30,842,796 as of July 2021 with 51 percent of the population living in urban settlements. The government

retained Soviet-style economic policies since the country's independence in 1991. Despite efforts by the government to diversify crops, Uzbekistan's agriculture is still largely cotton centered. Uzbekistan is the world's fifth-largest cotton exporter and seventh-largest producer (The World Factbook, 2021). Numerous studies demonstrate that irrigation systems in Uzbekistan are old and outdated which leads to waste of water resources. Having limited fresh water and a cotton-centered agriculture and industry in need of water, any potential shortage of water makes Uzbekistan severely vulnerable and will have a significant negative impact on the overall economy.

Tajikistan is a poor, mountainous, and landlocked country. The economy dominantly relies on extractive industries, agriculture, and citizen's remittance from working abroad. The country has an approximate population of 8,990,874 as of July 2021 with 27.7 percent living in urban areas. Less than 7 percent of land in the country is arable and cotton is the predominant crop. Tajikistan imports approximately 70 percent of its food (The World Factbook, 2021). Despite having considerable fresh water and a few hydroelectric facilities, Tajikistan still suffers from power scarcity especially during the winter.

Therefore, the needs of the two countries for water resource development is high, whereas retaining the current momentum of agriculture growth in Uzbekistan is critical. Similarly, it is important for Tajikistan to not only address its energy deficit but turn the country into an energy exporter especially to South Asia. The two countries' conflicting development goal makes the Rogun Dam issues intensify further, especially when the parties evade

dialogues and meaningful engagement together. Thus, the Rogun hydropower plant has the potential to ignite a full-fledged conflict between the two states.

After the collapse of the Soviet Union, and with independence of each of the Central Asian countries, economic priorities of each state were different from what was defined and coordinated under the Soviet Union. Each of the Central Asian countries had their own priorities, and development goals to which were sometimes aligned, overlapped, or conflicted with one another. Tajikistan, geographically situated upstream of the Amu Darya, is endowed with abundant hydroelectric potential. Tajikistan is placed amongst the world's top 10 countries with the highest hydropower potential. (Mehta, Ehernwirth, Trink, Zorner and Greenough, 2021).

Even though Tajikistan has a considerable amount of fresh water and potential to be a strong hydroelectric producer, the country suffered from frequent enervating power deficits. Two of the major incidents occurred in winter 2008-09 and 2011-12 which caused significant loss of life and livestock because of energy deficit in energy poor Tajikistan. (Bo, Orolbaev, Steklov, 2008).

Tajikistan is low on natural gas or oil reserves, so to help the power industry, the country remains highly dependent on Uzbekistan (Stephen, 2012). According to a study by Alexander Botting, about 70 percent of the population in Tajikistan experiences electricity blackouts in winter. (Botting, 2013). Severe, long, and freezing winters in Tajikistan affects water flow and water availability for electricity production. Meanwhile, unreliable electricity supply badly affects business development in Tajikistan. According to a World

Bank survey on the business and economic environment in 2008, about 80 percent of firms expressed concerns about unreliable power supply.

In Tajikistan, residential buildings are the largest consumers of electricity. Residential houses in Central Asia are often without proper building codes and 60-80 percent of buildings are built from clay and soil. Without proper construction code, all these factors make residential areas high-energy consuming. (Mehta, Ehernwirth, Trink, Zorner and Greenough, 2021). Some studies also criticize that electricity infrastructure in Tajikistan is outdated and old, which causes mismanagement of electricity.

Therefore, some commentators argue that the electricity deficit in Tajikistan is more because of lack of management and weak electricity infrastructure. Revisiting building's construction per modern standards, improving electricity facilities and infrastructure will significantly improve electricity supply to citizens. (Tajik Water expert, 2020).

From Tajikistan's perspective, construction of the Rogun dam will not only address Tajikistan's energy deficit and will contribute towards country's economy known as the poorest amongst the Central Asian countries. In the past, as part of the USSR policy, trading electricity between areas occurred in the Commonwealth of Independent States, but it does not happen anymore. Uzbekistan has been a key trade partner to Tajikistan for natural gas, yet prices steadily increased, and Tajikistan could not afford it (Stephen, 2013).

The upstream Tajikistan and Kyrgyzstan incur glacial melt from the Pamir mountains as well as the seasonal precipitation. These enrich both countries with a considerable amount of freshwater; however, downstream Kazakhstan, Turkmenistan, and Uzbekistan are dependent to the flow of fresh water. Until now, it is not realized that downstream areas' lack of standard infrastructure and facilities plus poor management were a key element that contributed to electricity deficit in upstream Tajikistan.

The downstream country argues that construction of the Rogun Dam negatively impacts freshwater availability for them, ultimately negatively affecting their primary exports. The Soviet Union experts in 1970 predicted that it would take 17 years to fill Rogun reservoir; contemporary studies contemplate 12 years (Thrilling, 2009). Such a timeframe and filling schedule scares Uzbekistan as it can reduce the water flow to Uzbekistan which can leave negative effects on irrigation capacity of Uzbekistan. However, it is important to note that Vakhsh River only tributes 25 percent of the total water of the Amu Darya River Basin. Therefore, Rogun has consequences, but it is not all the Amu Darya which flows to the downstream riparian states. (CES, 2013). Uzbekistan invested on crop diversification, yet the country is encouraged by the international community to further invest on crop diversification and avoid water-intensive crops. Retaining current agriculture policies and water usage, upon completion of the Rogun Dam, seasonal flow level could cost 609 million dollars to Uzbekistan's GDP. In other words, it is equivalent to about 2.2 percent of the total GDP. (Jalilov, 2011).

Former president of Uzbekistan Mr. Kerimov was also concerned about the location of the Rogun Dam. The Rogun is situated between the Lonakhsh and Gulizidan faults, an

earthquake-prone area. He believed this makes Rogun vulnerable to earthquakes and such a scenario leads to a catastrophe. Though the World Bank reports such risks are manageable. (CES, 2013). The public in Uzbekistan also showed their concerns about Rogun Dam construction by organizing marches and online debate via social media on January 5th, 2010. (Sodiqov, 2012).

#### **4.3.1 Political situation:**

Uzbekistan has used its geographic position to demonstrate its power on several issues such as raising import duties, requiring visas from Tajik citizens for entry to Uzbekistan, cutting the train routes and mining the border areas and many other to trigger and bully Tajikistan before 2016. during the years In the CIS Summit of 2004, Rahmon, the President of Tajikistan, warned the Uzbek Government by grabbing his collar and stating, “Samarkand and Bukhara will be ours one day” (Kucera, 2013).

“The conflict over Rogun dam could lead to an armed conflict, especially during the president Islam Karimov, who publicly announced that his country can go to war if the Rogun dam project continue to develop.”

Apart from the economic dimensions of the Rogun dam, the political factor has also contributed to the complexity of conflict in Central Asia. As part of the greater water policy of the former Soviet Union, dams on the upstream were designed to store water and manage irrigation properly in different seasons. This integrated water management system worked under the USSR leadership where each state received required energy support through an integrated management system, which provided electricity with affordable prices to Tajikistan or through providing fossil energy such as gas or coal to produce energy. Such

a political arrangement and integrated management was not feasible post disintegration and collapse of the USSR. Even though the Central Asian countries created the Interstate Commission for Water Coordination (ICWC) to continue Soviet water sharing practices, the agreement did not address the energy needs of the upstream states. To address this challenge, Uzbekistan and Kazakhstan agreed to pay for irrigation and electricity so that upstream Tajikistan and Kyrgyzstan could utilize the revenue for energy especially during the winter. This agreement sustained only until 2002 as Kyrgyzstan demanded higher electricity prices because of rising prices of oil and gas (Stephen, 2013).

Construction of the Rogun dam resumed in 2008. After expressing serious economic and environmental concerns by Uzbekistan, the World Bank decided to help, upon the request of the government of Tajikistan. Together, they assisted two different feasibility studies including the Techno-Economic Assessment Study (TEAS) and Environmental and Social Impact Assessment (ESIA) of the Rogun Dam. The World Bank was completely aware of the water-related tensions. The Bank launched the Central Asia Energy-Water Development Program (CAEWDP) stating that “energy-water linkage is inextricable from perceptions of national security, regional stability and economic growth”. These two studies were conducted by international experts and funded by the World Bank (The World Bank, 2014). The government of Uzbekistan agreed to halt operations until the World Bank conducts the assessments.

“The lack of scientific knowledge allows the politicians to further trigger the narrative of war and depoliticization can only happen in the present with credible data accepted by both parties. Uzbekistan is suffering for its own water policies, it still relies on an outdated irrigation system for its water intensive crop, which is hard to sustain in the face of the current climate change. Instead of blaming Tajikistan it shall adopt technologies that can further support the new environmental realities.”

Despite an initial green signal by Uzbekistan for the World Bank to undertake the assessment, Uzbekistan expressed its concerns about the result of the assessment and stated it believes that the assessment has not been conducted in accordance with internationally accepted standards. (Central Eurasia Standard, 2013).

Some scholars believe that this geopolitical conflict is beyond upstream Tajikistan and downstream Uzbekistan, and it is part of wider international strains between the Central Asian countries due to the overuse and mismanagement of water in the region, a key factor that which has been further intensified because of global climate change (Climate Diplomacy, 2021). Experts believe that project financing, natural disaster and political instability still derail the project progress. Rogun Dam continues to be an important matter of legacy for the president of Tajikistan Mr. Rahman, and he is determined to get the job done.

#### **4.3.2 Over nationalization and politicization of the Rogun Dam**

President Rahmon of Tajikistan turned construction of the Rogun dam to a matter of national pride and patriotism. Conversely, in Uzbekistan, especially during the deceased

president Islam Karimov, he, at the national and international levels, opposed the project and used every platform to object and voice that the Rogun Dam would jeopardize Uzbekistan's economy. It is believed that Uzbekistan is among the ten states with the lowest freshwater availability on the planet, which amplifies the fear of famine and mass migration. As part of Uzbekistan's serious objections to construction of the Rogun Dam, Uzbekistan gave neighboring Tajikistan a hard time using energy and halting shipment of gas to Tajikistan (Bologov, 2016).

“The extreme politicization of the Rogun dam has led to intense conflict between the countries. The first step is to stop using water as a political weapon to manipulate the people.”

It was mentioned that Turkmenistan as the other downstream riparian state may experience implications like Uzbekistan from the Rogun Dam's construction, however, it chose to remain less vocal and has relied on Uzbekistan to raise concern about the Rogun Dam (CES, 2013). There is limited literature about outside areas vested interests in the Rogun Dam, even though Russia may increase its military presence in Tajikistan due to the U.S military withdrawal from Afghanistan. The United States supports development in Central Asia, yet it has not engaged much in the Rogun discussion. Neither China, the US or Russia has publicly declared their position on Rogun.

After the death of President Islam Karimov, the new political landscape has opened avenues of cooperation on many bilateral and multilateral issues, Tajikistan has supported the new government in all the international forums, especially in terms of their position on

Afghanistan's peace and stability. Countries have agreed to jointly conduct operations to counter terrorism, extremism, and other organized crimes in the region. In terms of economic cooperation, the level of trade has been increased by signing 92 agreements in 2018 and another 306 documents in 2020, resulting in trade turnover of 500 million dollars. Both countries have celebrated several events to demonstrate harmony and goodwill towards each other, especially the celebration of cultural week in Tashkent which highlighted the cultural heritage of Tajikistan. Thus, the future prospective for regional cooperation is positive and both countries serve as the contacts for regional development and stability.

#### **4.4 POTENTIAL NEXT STEPS:**

Primarily, the political aspect of this conflict should be addressed. The government in both countries presented Rogun Dam as a matter of their legacy. For Tajikistan Rogun Dam is not only about the hydropower generation but also seeking some freedom from Uzbekistan. Therefore, both countries need to produce some solution to depoliticize the Rogun interaction. Both countries can achieve a mutually beneficial solution and address the unresolved conflict through dialogue. Both countries need to revisit the governing agreement and work toward building trust and overcome the crippling lack of trust between the two nations.

The other issue is the quantity and reliability of hydrological data, drainage capacity and snow accumulation in the mountains. Not only that but using improved forecasting methods and adopting downstream and upstream dam operation. The level of sedimentation also needs to be understood to better predict the future storage capacity.

“The result of the environmental feasibility study conducted by the World Bank was regarded as non-credible by Uzbekistan, but the overall benefit was the involvement of the international water management organizations and the need for working framework and the importance of generation of scientific knowledge.”

“The changes in the policies since the demise of Islam Karimov, had led to the positive development in the bilateral relations. For the first time the foreign minister of Uzbekistan in an official statement mentioned that, go ahead with the construction of the dam, but be watchful of some of the conditions we agreed upon. This was a green signal that conflict has been reduced to a larger degree.” (Tajik Water Expert, 2020)

Both countries have sufficient resources to generate electricity for hydropower purposes. However, the plan was lagging due to the disagreements over the construction of dams, especially Rogun Dam. In recent years both countries have agreed to improve legal mechanisms for the integrated and effective use of transboundary water management. Environmentalists remain optimistic on the development of bilateral relations in terms of water cooperation. Tajikistan in 2021 has agreed to export electricity to Uzbekistan during the peak summer period after meeting its domestic needs. Uzbekistan and Tajikistan also agreed to develop joint hydroelectric power stations.

Countries have also agreed to develop a joint stock company to prepare a feasibility study for the construction of hydroelectric plants on Rogun Dam. These recent developments are key in resolving the water management issues on both sides of the border. Though both countries have officially announced that a new chapter in their relations has started, and they do not carry any grievances from the past, the scholars believe that it is yet too early

to conclude that conflicts will never emerge once the Rogun dam is completed, and it starts affecting the water flow to the downstream Uzbekistan. The first policy change should be to fix the outdated water management system by adopting innovative technologies and introducing sustainable environmentally safe reforms. Uzbekistan has been lagging in adopting the climate change realities. It needs to align itself with the new realities to prevent future damage caused by climate change.

## **CHAPTER FIVE: FINDINGS AND CONCLUSION**

### **5.1 INTRODUCTION:**

This chapter will draw the conclusions from the four mentioned case studies on how power interplay can shape the interactions between the weaker and stronger riparian states. The reasons for lack of cooperation and persistent conflict in managing water related issues will be discussed. Water cooperation is becoming a greater challenge in many parts of the world as water demand has already increased due to aggregative growth of population, climate change because of unhealthy and unsustainable human approaches, and harmful interventions drastically impacting many water basins in a negative manner. Furthermore, weaker riparian states are losing their water rights due to power asymmetry which will be discussed in detail in the following sections. The findings of the above-mentioned cases will be compared to the situation of Afghanistan and lessons learned will be recommended for the case of Afghanistan if applicable.

### **5.2 POWER ASYMMETRY LEADS TO NEGATIVE HYDRO HEGEMONY.**

Throughout this study in different sections, we emphasized water scarcity and poor water management, and lack of capacity as a potential future cause of conflict. Growing water shortfalls have already created social unrest at different local, national, and international levels. In many places for instance in Khuzestan province in Iran in July 2021 protest over clean drinking water for daily consumption exploded against government (HRW, 2021). Los Angeles (AP) (2021) reported that “A major Southern California water agency has declared a water supply alert for the first time in seven years and is asking residents to

voluntarily conserve.” Moreover, Washington (AP) reported that “U.S officials on Monday declared the first-ever water shortage from a river that serves 40 million people in the west, triggering cuts to some Arizona farmers next year amid a gripping drought”. According to the United Nations, based on studies, approximately 5 billion people experience a water deficit by 2050 (UN Water News, 2021).

In a study of power asymmetry in conflict resolution, Jing Yu, Kilgour, Hipel and Zhao (2014) articulate that water resource conflicts are complex and might be shaped because of water quality, quantity, navigation, or perhaps economic motives. Moreover, they argue that other factors such as historical tensions, perception of need, political leverage and existence of greater conflict might contribute to escalation of water conflict. Ecological threats and climate change are added as part of the contemporary causes in most water related conflicts throughout the world. In Rogun hydropower plants case study, one can notice how different perception of needs, historical tensions, economic motives, and factors such as political tensions between the riparian states both Tajikistan and Uzbekistan contributed to intensification of water conflict.

Tajikistan persists expanding hydropower capacity to address the country’s shortage of power, meanwhile transforms Tajikistan from a power-imported state to a major exporter of power. From Tajikistan’s points of view, creation of hydropower plants on Tajikistan’s freshwater resources not only address country’s power deficit but also contribute to country’s economy via generating income, improve irrigation, control flood. From Tajikistan’s perspective, enhancing hydropower facilities increase energy security,

enhance regional cooperation via increasing dependency in one another's strengths which reduce probabilities of conceivable future conflicts.

While on the other side, the downstream riparian's Uzbekistan has a different perception of needs and interest. Uzbekistan perceives increasing hydropower facilities in Tajikistan as a major hazard and an intimidation to its economy, agriculture, and ecology. Moreover, Uzbekistan has serious safety and security concerns about seismic effects of dam construction and the threats that it poses to Uzbekistan. Shortage of water in Uzbekistan because of reducing flow of water from Tajikistan, means increasing drought, and displacement of local farmers that leads to country's political instability. Tajikistan counter argues that Uzbekistan requires to diversity its agriculture products by focusing on less water-intensive crops, improve irrigation system to address major water concerns. On the other hand, Uzbekistan narrative discourse is that Tajikistan's electricity's infrastructure requires maintenance and improvement which will address major electricity deficit of Tajikistan. As it is obvious, perception differences are quite clear in the case of Rogun dam. While expert analysis and an inclusive study of Rogun dam facilities' impact will address many concerns of both sides of the conflict.

Uzbekistan threatened Tajikistan in 2009 to raid military forces if Tajikistan continues constructing Rogun dam. Both countries were at the edge of initiating water wars several times. Clearly Amu Darya Basin to which Rogun dam is situated in it, has the potential to create conflict between the two countries and perhaps gradually drag more countries in the region into water conflict. Meanwhile the basin has great potential and offer opportunities

to enhance cooperation not only between Tajikistan and Uzbekistan but also other countries that share the basin via increasing regional cooperation.

The problem which currently exist between Tajikistan and Uzbekistan can be the scenario for Afghanistan and downstream riparian Uzbekistan and Turkmenistan in the Amu Darya basin in future if Afghanistan decides to implement any broad development plan. We learned that Afghanistan as an upstream riparian share's agenda with Tajikistan and support establishment of Rogun Dam facilities. Afghanistan as a late developer perhaps promote its developmental plan on the Amu Darya Basin especially when the country is suffering from electricity shortage, the economy is poor, and the country is over dependent on its neighbors for electrification.

The case of Aral Sea also further designates the importance of climate change and proper water resource management otherwise, water scarcity is supposed to brew more conflicts in the region. While analyzing transboundary water conflict, considering different aspects of the conflict such as riparian upstream or downstream (where the riparian situated), power analysis such as economic power, military or political and or resources availability to exploit the other riparian such as infrastructure, and technology will enable involved parties to understand the context and move toward conflict containment or resolving (Zeitoun and Jeroen, 2006). Water scholars see power as a substantial factor which impacts the result of negotiation, it affects the behavior and attitude of those representing in negotiation. Jinu Yu, Kilgour, Hipel and Zhao (2014) concludes that power can either help riparian to cooperate or contain a violent conflict over transboundary water. Meanwhile, it has the potential to escalate conflict. Undertaking an in-depth power analysis is crucially

important to understand the problem thoroughly to offer contextualized and feasible solutions.

In case of Rogun dam, both riparian Tajikistan and Uzbekistan exercised power in different ways to influence the result in their favor. For instance, President Islam Karimov of Uzbekistan clearly threatened its upstream neighbor to exercise coercive force if Tajikistan continues building Rogun dam. Major stakeholders' attention was turned to central Asia and the case of Rogun dam again when President Karimov unleashed the discourse of moving into a full-fledged war over transboundary water. He utilized every platform to raise his disagreement about construction of Rogun hydropower plants. Both countries went to the edge of waging conflict by deploying military forces to their borders.

In terms of military, political and economic power, indeed Uzbekistan is a bigger country in size, population and is a greater economy in the region. Uzbekistan has been a traditional cotton supplier to Russia, and post-independence according to many experts, Uzbekistan tried to follow its own political and economic development path. Uzbekistan has expanded its relationship with countries in the region and abroad especially with the U.S and the west. It helped the U.S-led counter-terrorism campaign in Afghanistan in 2001-2006 by allowing the U.S forces to use military bases in Uzbekistan as well as rights to over-fly its sky for military plan to transport conventional military equipment to Afghanistan to support the counter-terror war.

On the other hand, Tajikistan is a poorer economy, smaller in size and shares a long border with Afghanistan. Tajikistan host thousands of Russian military forces in its territory which support Tajikistan in border control with Afghanistan to avoid possible terrorist movement

and conduct counter smuggling operations. Tajikistan's president is well-determined to build the Rogun hydropower facilities, as he believes it transforms Tajikistan's economy and energy security. In fact, he made Rogun Dam hydropower facility's construction as a matter of national pride and his great legacy for Tajikistan.

### **5.2.1 Different forms of asymmetrical power in the studied cases:**

Power is defined as one's capability to leverage others (Emerson, 1962). Besides social science experts introduce five different types of power which include coercive, reward, legitimate, referent and expert (French and Raven, 1959).

In fact, there are diverse ways that powerful riparian state often exert pressure on weaker riparian state to demonstrate leadership, and influence outcomes in their favor in water interaction. Positive direct power, negative direct power and indirect power are the three major types of power exertions. Examples of direct positive includes trade incentives, granting military protection, diplomatic recognition in a contrary power exertion can be in negative form too for instance, military intervention, economic sanctions, and political isolations (Zeitoun and Jeroen. 2006).

In case of Rogun hydropower facilities, even though Tajikistan has been threatened by its downstream riparian to utilize coercive power, yet Tajikistan continues relying on expert power by inviting the World Bank to finance independent feasibility study of Rogun dam and its consequences for its neighboring riparian states. The successor of President Karimov in Uzbekistan, president Shavkat Mirziyoyev adopted a different path to his predecessors. He stated that he backs Rogun Dam hydroelectric project in Tajikistan while he was visiting Dushanbe, the capital city of Tajikistan on March 09, 2017.

Observer believes that the new president further believes in cooperation and turning challenges into opportunities other than confrontation. The new leadership believes hydropower dams in Tajikistan have obvious advantage for the Uzbekistan if the two countries have constructive dialogues over their mutual interest. Meanwhile, observer believes that the reason behind Uzbekistan's motive to drop opposition against Rogun is to weaken some Politian's who have strong ties with the former president including the Minister of Foreign Affairs. (Barghouti, 2006).

Uzbekistan and Kazakhstan agreed to support hydropower projects in Tajikistan and Kyrgyzstan while all four countries should reach to a new agreement which highlights when water needs to be stored or released. (Valveva, 2014) They also agreed that water infrastructure for irrigation in border areas will be renewed to avoid any potential conflict amongst the locals in the area. Commentators conclude that mistrust between Tajikistan and Uzbekistan is deep-seated yet cooperation over hydropower projects indicates that increasing cooperation amongst riparian states over transboundary water is feasible yet time demanding (Alina, 2018.). It is also important to note how dominant countries in basins utilize power.

Moving from Uzbekistan and Tajikistan power dynamics defining the eater relations to Afghanistan and Pakistan water interactions and the role of power asymmetry. The intensification of conflict between the two countries came to a point where the government of Afghanistan stopped all negotiations on Kamal khan dam with Pakistan.

Despite the fact that Afghanistan and Pakistan have not publicly threatened each other over transboundary water disputes yet, many reports from media in Pakistan sees Afghanistan's

river as India's next weapon against Pakistan (Hessami, 2018) which continue to spread the narrative of violent conflict and has no basis and evidence.

Meanwhile, both Iran and Pakistan believe Afghanistan postpones negotiations over transboundary water to continue implementing its water development plan before reaching to any agreement. However, from the standpoints of Afghanistan, the country does not initiate dialogue about cross-border water since it lacks institutional, and agency capacity as well as it does not maintain necessary data repository to back water negotiation. Afghanistan appalls that initiating water dialogue in the absence of aforesaid substantial factors, neither serves in the best interest of the country nor ends up to a sustainable solution for riparian states.

On the other hand, Afghanistan also argues neighboring riparian states developed their infrastructure during last four decades when Afghanistan was at war without notifying Afghanistan therefore, Afghanistan as a late developer should be able to develop its infrastructure, make sure it is geared up and is at the same level with neighboring riparian states in terms of water infrastructure development. Only then the country will be able to initiate dialogue and come to a cross-border water agreement. Developing water facilities especially dams and reservoirs will give promising opportunities to Afghanistan both economically and politically meanwhile enables Afghanistan to appear in water negotiate with riparian states from a position of strength backed with hard and soft power.

It is important to note that Afghanistan compared to its neighboring riparian states is weak politically and economically. Pakistan is a nuclear power, almost 5 times bigger in terms of population and a peace force provider to the United Nations, a country that host more

than 3 million of Afghan refugees, it has strong ties with warring factions in Afghanistan and the largest exporter of goods and foods to Afghanistan. Meanwhile, Iran is a regional power, host more than 2 million Afghan refugees, and has strong relationship with powerful local leaders across the Country in Afghanistan. Iran is a large exporter of food and other products to Afghanistan. Afghanistan far lacks behind from the riparian states in terms of hard and soft power. Therefore, such a level of dependency further intensifies the fear to interact with stronger riparian states. From the perception of Iran, Afghanistan uses cross-border water as a tool to pressurize Iran while Afghanistan believes that Iran uses Afghan refugee and forcefully deport them to Afghanistan to pressurize Afghanistan for water related issues. Such an environment of deep-seated mistrust, lack of confidence, and baseless indictments increases tensions between the two friendly states.

Afghanistan and Pakistan require to engage together constructively as two Kabul River hegemons. (Zeitoun and Jagerskog, 2009). in their study of power asymmetry articulates that equitability in transboundary water is an important factor. “The player in the transboundary water needs to be leveled which means weaker state’s capacity needs to be strengthened, while also the playing field needs to be properly levelled. In other words, there should be further emphasis on international water law. Afghan bureaucrats working on water related matters need to have an in-depth understanding of international water law to be able to negotiate about Afghanistan transboundary waters.

This increases the effectiveness of conversation and will create a common language between people involved in transboundary water river. Other effective strategies to counter power asymmetries may include benefit sharing schemes in addition to capacity building”

(Zeitoun and Jagerskog. 2011). Institutions as well as agencies in Afghanistan have been widely impacted by violent conflict, the country fell behind in every development aspect both the hard and soft powers are negatively impacted. This important fact needs to be realized by riparian states and to have effective negotiation to regulate water uses, Afghanistan needs institutional as well as agency development.

As we showcased in pervious chapters, Afghanistan with the generous support of its allies and international communities carried its water development plans. The country faced an influx of experts both national and international and several assessments have taken place to inform and feed water strategies. Afghanistan experienced a good chunk of institutional and agency development during last two decades. The achievements and gains were considerable, in fact a ray of hope for a promising future and greater opportunities to initiate water dialogue with riparian states that led to regional cooperation.

In a power asymmetric context in any water conflict, there is two different scenarios feasible to take place which include powerful hegemons in the basin develop arrangements that is equitable and sustainable or perhaps in contrary develop an arrangement that is conflicting and imbalanced. (Zeitoun and Mirumachi, 2008). Considering what we mentioned about power asymmetry in the Amu Darya Basin between Afghanistan and other riparian states, it is not easy for Afghanistan to overcome its fear of negotiation. It is not said to undermine the importance of talks over water but to underline the basis and rational that Afghanistan makes to delay water dialogues. Power asymmetry is exactly what makes Afghanistan conservative of proceeding to further in-depth negotiation with riparian

states in all five river basins. Afghanistan fears has roots in its weakness of multiple shades of power both the soft and hard power.

To confront power asymmetry, it is also recommended to utilize approaches such as interest matching or benefit sharing between the weaker and stronger riparian state (Sadoff and Grey, 2005). As earlier states, Iran and Afghanistan has no territorial disputes or contested border, yet the two countries have long history of water discourse on Helmand and Hari River basins. It was explained before that Iran is the only neighboring riparian to which Afghanistan has water agreement with and is enforced since 1970s. Iran as a strong riparian state has developed several hydropower, reservoir, and irrigation dams during last few years.

From the perspective of Afghanistan, the neighboring downstream Iran has created several establishments without notifying Afghanistan moreover, Iran overused water resources without putting enough thoughts about its sustainability and environmental impact. Diversion of water from its traditional route and poor-quality channels and irrigation systems wasted water. Yet Afghanistan agreed to ensure increasing flow of water to Iran in lieu of gaining access to Chabahar port in Iran. Access to Iran's ports was a long-term development objective of Afghanistan to reduce its dependency on Pakistan's port of Karachi.

### **5.2.2 Lack of appetite for Negotiations while power asymmetry:**

Initiating negotiation of transboundary water issues is psychologically, and skill wise a daunting situation for the weaker riparian states. Weaker parties tend to delay the process if it feels like they are losing rather than gaining because of the talks. This sense of

reluctance breeds an environment of mistrust and suspicion. The state's senior water officials and politicians are usually at the driving seat of conducting negotiation. This team represents several aspects of water issues, including, socio-economic, engineering, environmental and political and security concerns. Whereas, in some countries the water issues are only managed by the engineers, such as Central Asian States. (Osh/Brussels, 2002).

In Afghanistan initially, but the composition of negotiation teams is changing due to the urgent issues of climate concerns and political challenges. Initializing the negotiations is usually a hard task, especially in the face of multi-party and multifaceted matters and requires skillful facilitation and communication skills. State agencies have the credibility, resources and mandate that allow them to better manage the negotiation process compared to the non-government agencies. The result of state-carried negotiations usually tends to be more sustainable and well documented in the national archives and can have implementation liability. States can also organize mechanisms instituted in the water institutions to monitor the implementation of agreed upon rules and conducts in transboundary water interaction. These follow-up mechanisms can both be internal and external with the other riparian states.

States, if transparent and accountable in the water governance sector, can also install trust among the riparian regarding the integrity of the entire pre-and post-negotiation process. The parties can have agreed norms on how, where and when the process shall begin, what rules shall be abiding and how the process shall be followed. Though the substance of the negotiations is of high importance but without a smooth and transparent process, the parties

can just fail due to lack of collaboration on the organization side of it. They can convene but without any substantial gains in terms of content and actionable items. Agreed upon written rules are critical in maintaining the fairness and integrity of the process. Furthermore, the impartial mediator can ensure that all parties stick to defined rules and codes of conduct.

In case of Afghanistan and its riparian states, the negotiation never started due to fear of losing without having the data and skillful water bureaucrats and politicians. The country struggling with brain drain, lack of institutions was emerging just out of ashes of war, negotiation on Harrirud and Helmand River were proposed by Iranian but have been constantly delayed by the political leaders and bureaucrats resulting in further tension between the states. The same path was followed by Pakistan on Kabul River basin, where Pakistan drafted the initial water treaty, which was rejected based on same argument mentioned in case of Iran.

Lack of preparedness, sufficient resources, and weak institutions with capacity to monitor and evaluate the content of the treaties impeded any development amongst the riparian in the 20 years of relatively stable time in the recent history of Afghanistan. For Ganges River basin, Indian due to its high level of influence in the political and bureaucratic circles have always manipulated the situation in its favor therefore, despite the public hue and cry about the results of most of the water treaties content and negotiation process, little could be achieved in terms of shaping the content meeting the needs of all parties.

The process of negotiation in both cases were not owned by Afghanistan and Nepal, Afghanistan always feared from Iran and Pakistan that they will be lured into some kind of

situation which will be hard to reverse in the aftermath of the negotiation, therefore, avoiding any avenue for engaging in any kind of negotiation process. Whereas the same situation has been prevalent in case of Nepal and India. Nepalese's believe that most of the negotiations was completely designed and run by the Indian side, the presence of Nepalese politicians and bureaucrats were regarded as symbolic than meaning representation. On the surface it appeared Nepal attended those negotiations on equal footings but in actual terms the ownership was entirely in the Indian side, from drafting the content to designing the process, India was on the driving seat. Therefore, treaty such as Mahankali is still a controversial issue among the different parties in Nepal.

Even the political parties have varying views regarding the entire negotiation process, which happened in a hasty and the contents were concealed from the public eye for a long period creating further mistrust. Whereas, in case of Uzbekistan and Tajikistan the bilateral interaction on Transboundary water remains of highly political and sensitive in nature. Therefore, no negotiation process was. unproductive and inefficient . The efforts of the regional and extra-regional organizations were never welcomes as any discussion on Rogun was of national security issues for Uzbekistan and the rigid policies of the President Karimov blocked all windows to initiate any form of discussion around the Rogun Dam with Tajikistan. It has been also observed that in politically sensitive cases especially in Nepal, there has been internal lack of consensus on conducting negotiations in a manner proposed by the stronger riparian state.

### **5.3 COUNTERING POWER ASYMMETRICAL RELATIONS:**

In the asymmetrical water relations, the weaker riparian can build upon the sources of soft power to either influence or transform the relation with stronger riparian or build its capacity to speak to the power and challenge the status quo set up by the stronger riparian states. For the cases studied for this research, it is not feasible to counter the stronger riparian in terms of hard power in the early future. The material power, including military economic and technological power of hydro-hegemony have huge disparity with the weaker riparian states. Transboundary water asymmetrical relations can be countered through distinct approaches described by Zietoun and Jagerskog, 2009. Those tactics could either fall under 1) Influence and/or 2) challenge strategies. It entirely depends on the level of awareness by the weaker riparian state about its own capacity, the capacity of stronger riparian and which strategy is applicable under each situation. The role of the national actors and the international actors and institutions remain key in confronting power asymmetry.

### **5.3.1 Power to Influence:**

The weaker riparian can influence the stronger riparian in creation of same interests from the cooperation and or transform the relations for the long-term sustained interactions over TBW. Weaker riparian can highlight the inequitable or unfair situation that has an effect on all the parties. Hydro hegemon can see the cooperation if it benefits both sides, therefore, the weaker riparian should be more proactive in identifying potential beneficial projects for both parties and continue to negotiate and encourage the strong riparian to buy into those efforts. If the stronger riparian has a clear vision that weaker riparian will support its efforts, the possibility to demonstrate positive leadership will enhance. Under the influence strategy, the weaker riparian adopts approaches that are less confrontational and more

inclined towards persuasion of the stronger riparian state. The potential for cooperation enhances when stronger riparian sees that weaker riparian is helping to mitigate the level of risks for stronger riparian (WWF-DFID, 2010: 38).

***5.3.1 a. Depoliticization and De-securitization of water interaction:***

One of the major issues with securitization is putting the matter as of high security priority and limiting the decisions to a set of politicians who can have the tendency to decide because of the impulse based on urgency emanating from revenge or undefined threat.

Water discourse is highly saturated with the securitized terms, and it is almost unclear why water issues are mostly securitized in different water conflict zones. One of the major reasons is the amalgamation of different narratives that shapes the water securitization discourse. The media has an active role in spicing the water interactions between the dominant and weaker riparian states. Environmentalists have securitized the water management issues as the safety of the environment can prevent future violent conflict among the people facing serious water scarcity. Though research has not shown the major factors behind securitization of waters in depth, one of the factors is that the intensifying the narrative along water conflict has the tendency to be included in the national security priorities of the country. The rhetoric and behavior of the state towards its neighbors is another factor identified. The securitized and highly politicized narrative tend to put the weaker riparian state at more risk of losing its water rights, hydro-hegemon tend to build and support this narrative as it has the power to use force directly and indirectly to deter or coerce the weaker riparian state.

This discourse and narrative generation in some cases are strategic tactics for states to showcase their power and raise the issue to further murky the water interaction, forcing the weaker riparian to succumb to negotiations and agreeing upon terms and condition identified by the dominant party. For example, Iran raises the narrative of blaming Afghanistan for environmental degradation, which in actual is the result of Iran ambitious water policies. States tend to associate several water and non-water issues to seek further support for water from their constituencies to elevate water issues to the level of national security.

Provoking emotions and creating fear also falls under the same pattern of establishing the securitized narrative. Iran has been using the narrative of water conflict with the religious sentiments further raising the temperament high among the desperate crowd to blame its neighbors. Diverging the population interest from states on inward policies and placing the blame on the other party has also been a tactic for states in more control of generating securitized narrative.

Iran has also used Afghan refugees and their survival as a strategic tactical approach to push the issues to the national security level. In case of Uzbekistan, the deceased President used the sentiments of people over the historical land conflict with Tajikistan to raise the water conflict to the level of national security, both countries went to the level of physical encounter in a formal setting, threatening the weaker riparian to not only reject the notion of using its water rights but also claiming the historical grievances over the land (Samraghand and Bukhara).

In case of India and Nepal, the Kalapani area, literally was captured by the Indian army as it was a strategic location bearing security importance for India. This was considered a violation of terms of Mahakali and is still a conflicting issue between the countries.

Securitization of waters can be embedded into the structural frameworks and policies, placing them in National Security Threat documents, Foreign Policy Priority Frameworks and other key strategic documents setting them as high priority. In addition, certain institutions will be assigned to safeguard these structures in the long term. E.g., Iran had assigned its top-notch diplomat to pursue the nuclear power deal, responsible for conducting water negotiations with the neighbors. States also include water treaties in the main security agreements to securitize the issues, states also exclude academia, civil society, and free media to engage in water interactions, leading to isolated decision, that can serve the interest of politicians, especially in terms of mobilization of resource to pursue conflict or cooperation. In Uzbekistan, and Iran the states excluded civil society to have more control over water discourse. In case of Afghanistan, lack of capacity to design participatory process led to the exclusion of civil society, furthermore, civil society organization were also less sensitized to take active role in transboundary water interaction, though some exchange programs happened between Afghanistan and Pakistan on finding cooperation avenues on Kabul River.

Politicizing recruitment and appointing public servants in most developing countries such Afghanistan and Nepal based on political affiliation and loyalty led to creating a bulk of people who exploited every development opportunity, manipulated public institutions to fulfil personal and ethnic, religious, and linguistic agendas and promoted short-term

thinking where these corrupt bureaucrats changed government to a personal business, to make money through bribery and other corrupt practices. Politicizing bureaucrats' appointments undermined the value of transparency and accountability, corrupt bureaucrats have barely been accountable to people and further cherished self-interest to public interest. Bureaucrats neither developed an appropriate and productive relationship with structure and institutions nor performed up to an acceptable level of standards. Influx and outflux of expensive advisors, lack of efforts to develop systems, introducing less conflict sensitive strategies and policies, and absence of knowledge repository led to an unsustainable water development in Afghanistan.

Finally, the use of narrative as a tool to securitize water interactions is not productive for water cooperation. The use of language has been used to provoke and mobilize constituencies to gain political consensus. Politicians tend to use water as a weapon to gain votes and seek public sympathy. The use of metaphors and symbols can further trigger the sentiments of the public. Politicians adopt this approach to showcase their level of care for the protection of public goods and interests. In many cases these narratives are solidified or supported by the occurrence of environmental disasters such as drought, flood and other natural calamities affecting water quantity and quality. In case of Afghanistan and Iran the hard-hit drought during the nineties caused significant harm to the environment surrounding the Harrirud and Helmand River basins, Communities in both sides deserted their villages for the sake of water, the ecosystem on the lakes were affected leaving the flamingos to migrate and fisheries to complete vanish. This climate calamity is usually

forgotten when it comes to water interaction by placing the blame only on construction of an already designed dam projects (Salama Dam).

Furthermore, securitization of water issues can happen in more closed system of governance, in democracies the tendency for inclusion of diverse voices from multiple stakeholders can de-securitize the water interaction and provide more avenues for meaningful collaboration and cooperation on emerging water issues. Securitization of natural resources has been marked as both positive and negative among the various stakeholders. For some securitization leads to sloppy and hasty decision making without considering water as a holistic issue, for others, especially environmentalist natural resource securitization can further highlight the need for urgent action that can prevent environmental disasters and degradation.

However, both the proponents and opponents of the securitization of natural resources have not been successful in influencing the policymakers to further consolidate those recommendations into policy decision making. Scholars, therefore, have been focusing on de-securitization of water to foster win-win approaches, providing more opportunities for water cooperation than water division. De-securitization requires all riparian partners to engage in constructive decision-making for the overall benefit of the water basin, share data, conduct joint operations, and take a more long-term approach towards development of water resources.

De-securitization also allows for more technical support from the international partners. Institutions such as the World Bank, European Union, Asian Development Bank and many other think-tanks and water institutes can provide more financial, technical, and managerial

support to riparian states. However, the process of de-securitization requires political will from the political elite and a strong mobilization by non-state institutions and actors, including academia and vibrant and committed civil society movements. As this is the realm of political elite and they resist expanding the number of stakeholders to have more control over the decision-making process over the resources. Finally, further research is required to explore the pros and cons of securitization and de-securitization of transboundary water and its implication on the sustainable management of this natural resource.

#### ***5.3.1.b Naming and Shaming:***

The other tactic that weaker riparian can use is naming and shaming the practices by the hydro-hegemon in the river basin, these practices can include any unilateral action that leads to mistrust, events of unilateral resource capture, acts of damaging the water ecosystem and any other acts of degradation of environment. This tactic can work particularly when shared resources are in danger. Naming and shaming can also yield effect if used in the strategic manner without creating so much harsh or intense narrative that breeds mistrust and animosity. This approach highlights the uncomfortable facts with the basin hegemon. In case of transboundary water relations between Afghanistan and Iran, Afghanistan can highlight the Iranian policies, events of non-cooperation and unilateral processes that has entailed cooperation and damaged water resources in the Helmand and Harrirud river basins. Similarly, Nepal can name and shame some the acts of Indian authorities which resulted in the degradation of the environment in the Ganges River basins.

### ***5.3.1.c Discursive power, setting new narratives by weaker riparian party:***

Weaker riparian states, despite lagging in terms of economic and military power or geographic power, can utilize the power of negotiations to influence the course of interaction between the riparian states. The use of power in negotiation is a complex topic, as it can not only shape the path to negotiation, but also affect the outcome, and the use of power by the weaker riparian to not comply with the rules and outcomes the stronger riparian has set and avoid or delay taking any decision. There, power plays an integral role in pre-negotiation, during the negotiations and the environment which follows the formal treaties formulated. These interactions are usually complex and dynamic and change with the changing circumstances in both weaker and stronger riparian cases. Therefore, we can argue that power play is a not a static concept but keeps fluctuating with the changing needs and interests and stakeholders as the riparian begin to explore the option of negotiation to prevent or resolve conflicts.

Power in negotiations can also be visited through the lens of individuals involved in the process. The different kinds of personal styles shape the form of negotiation to distributive or integrative. In cases studies for this research, it is observed that the negotiations on waters were mainly pursued in the distributive manners, due to the personality styles of the political leaders involved in the negotiation and post-negotiation phases. In Afghanistan, negotiations were constantly delayed due to lack of availability and preparedness of data by the parties. Therefore, President Karzai followed the path of silent diplomacy, where any negotiation on waters was strictly prohibited during the first 10 years of the intervention and President Ashraf Ghani was claiming to have open doors to negotiation

with riparian, however, he seriously disrupted several processes due to his lack of understanding of the challenges both technically and politically in sharing benefits with the riparian states.

***5.3.1 d Instilling trust among weaker and stronger riparian parties:***

One of the Negative dominance and exertion of any sort of power whether soft or hard by any powerful hydro-hegemon riparian state will not only solve the problem but will intensify tensions and increase lack of confidence. Water deficiency is an important catalyst for conflict. Afghanistan and its riparian states are experiencing different degrees to water deficiency, continuation of drought and water shortage will affect food security, food prices, quality, and availability, it increases displacement because of famine and ultimately increase regional instability. As Zeitoun and Mark (2006) concludes “water resources systems have many attributes including ecology and effects on nature, society, and the economy therefore, water conflicts are complex strategic decision problems – multigoal, multi stakeholder, multistate, and multilevel lost critical problems in asymmetric transboundary water relations is the fixed notion of hydro-hegemon about their water rights. Stronger riparian states believe that they cannot expand the pie through benefit-sharing and other cooperative mechanisms, but the allocation of water shall reflect their version of water quality and quantity. This rigid position creates a non-equal playing ground and ego-centric environment where political elites create all kinds of data to support their negative domination over the weaker riparian- which further impedes goodwill and intensity conflict dragging it for longer period. However, looking into water as a flexible

resource can generate options for building trust and focusing on win-win solutions to meet the needs of all riparian states including their internal stakeholders.

The stronger riparian can trust weaker riparian if it helps the hydro-hegemon to mitigate risks and work with the hydro-hegemon in a cooperative manner to develop the water resources. Influencing hydro-hegemon

Trust is one of the critical elements of pushing the riparian states to cooperate. In any basin the imposed cooperation without having the precondition of mutual trust has resulted in lack of any sustainable tangible action on river basins. Negotiation and mediation can only be successful if the riparian states install trust in the very early stages by developing strong confidence building measures (CBM). Parties who trust each other can reveal information beneficial or damaging to river basins. In the absence of trust, cooperation may look promising on the surface but will lack long-term commitment. Therefore, it is vital that parties are not enforced to cooperate but are invited to build it by introducing some key confidence building measure, the recent literature agrees that trust can indeed be built, through a sequential process that blends elements of “encapsulated self-interest” (Hardin 2001). Ward believes that all those approaches which come from within are more successful than the imposed approaches (Ward, 2006).

Subsequently, Maley believes that there are several mechanisms that nurture trust, one of the possible values for long run at the mass level is re-socialization, using education to break down stereotypical ways of thinking. This case is very prevalent between Afghanistan and its stronger riparian states. Lack of the overall knowledge of basin, the climate factor and the potential future socio-economic composition across the basis are not

thoroughly studies. And the general perception is that Afghanistan has sufficient water resources which can be used in any manner conducive to the regional power politics.

Therefore, political elites should detach from the baggage of past sour relations and invest on building the institutions that generate knowledge regardless of political intervention as different institutions create varying behavioral incentives, with some promoting more cooperative form of behavior than others (2006). Trust results when institutions make it far less likely that the stronger riparian party benefit at the cost of weaker riparian state. Trust can therefore be constructed and institutionalized, which will greatly reduce the chances of explosive violence due to fears of victimhood (Weingast, 1998). Institutions can instill new values around water cooperation, they can introduce accountability and transparency measures which can boost equitable and fair distribution of water resources and reduce power asymmetry. Institutions can also introduce modern technology which can generate shared data without intervention of stronger riparian influence biases.

Even though transboundary water management falls under the mandate of the states, and in many water basins, the water corporation falls under national security priority programs. Only trust building at the state level cannot provide a comprehensive solution. The more efficient way of improving relations involved the role of non-state actors among Track II. The civil society groups, the media, the academics, the community councils and the youth and volunteers who have a high stake in resolving the water issues as they are the direct beneficiaries of the cooperation among states. These groups have more in-dept knowledge of the river basins and have better understanding of shared values. They can direct the

parties to shed off their power games and focus on the values of water as a shared resource required proper methods for utilization and protection of the environment.

This role needs to be further explored for building sustainable relations between riparian states in conflict. Civil society can also enhance trust by motivating parties to detach from the emotional baggage of past bitter narrative that led to erosion of trust between riparian states. Breaking from the narrative of the past requires instilling a new narrative. It has been observed during the research that the new generation of water scholars perceive water from the lens of environmental studies than security studies. The narrative which the new generation is more attuned to revolves around Fairness and Equity, the principles taken from the international water Law. The new batch of diplomats and water experts can further advocate around this narrative to encourage the parties stuck in unilateral resource capture to break from the narrative of past and adopt the new narrative beneficial to all.

The role of shared cultural values and needs are also pivotal to be highlighted during the trust building processes. Afghanistan and its regional riparian states have similar cultural values, food, language, and historical achievements. Same is in case of Nepal and India, sharing the same religion, food and other rituals, the Uzbekistan and Tajikistan have several cultural similarities. These values serve as connectors in the asymmetrical water relations environment. Shared needs of communities should be reflected properly to create more understanding of actual water needs. Listening to both riparian sides and allowing each party to explain the grievances in an actual term can create more understanding and bolster the environment of cooperation. A clear account of the actual rights of people Vs the rights of environment also create new perspective about the rigid notion of water rights. The more

riparian states are aware of each other's programs and activities on the shared river basin the better future planning on the river basin will have. The unilateral mindset will only create further mistrust and prevent any future environmental degradation which ultimately all riparian states will suffer. The mutual benefits and mutual harms can create more interdependency and boost trust among the riparian states.

However, trust building requires patience, constructive communication, and skilled mediators. In certain cases, the trust deficit is the result of personality style of the state actors dismayed in the aftermath of change of power. For example, in case of Uzbekistan the deceased president had a rigid notion over the construction of Rogun Dam. The new Presidents had better ideas of cooperation with Tajikistan, opening its door for negotiations and practical solutions to the enhance bilateral relations between the two states. Similarly, President Karzai approach in Afghanistan in the post-conflict era was the adoption of silent diplomacy with water as a highly sensitive topic which was mostly not discussed due to fear of losing the water rights. Whereas President Ghani had more open approach to discuss water with neighbors, however, without considering the actual issues on the ground but using it more as a political tool to build his constituencies. In case of Nepal the several shifting of governments and the prime minister's personality type also shaped the level of trust between India and Nepal. Therefore, the role of personality types should be highly considered while designing any kind of trust-building process with the riparian states.

One of the other factors in impeding trust among riparian states is the role of bureaucracy. Countries with less efficient bureaucratic systems tend to have excuses for every situation. In such an environment the riparian state with more vigilant machinery gets exhausted by

pushing the weaker riparian state to undertake certain required actions. This tends to automatically create an environment of mistrust. Especially, in some of the cases the weaker riparian does not have sufficient government capacity to interact with the stronger riparian effectively and clearly and with the international organizations leading to environment of blame game and finally exhausting the stronger riparian to trust the intention of the weaker riparian states. Parties also lack trust when they delay the reports for better accountability and transparency for international organizations. Being responsive and efficient can serve as a major catalyst to bolster trust at all levels.

Finally, clear communication and dialogue with the riparian in both written and verbal can ensure long-term sustainable relations and can be one of the tactics to reduce power asymmetry. Consolidated and consistent messages from a riparian tend to create a better environment for cooperation. Fragmented messages laden with emotional sentiments lacking rational, scientific, and technical backing further create conflicts among the riparian states. This has been highly noticed in the case of Uzbekistan-Tajikistan, where the communication of transboundary waters was laden with emotional power struggles for historical border grievances. The same is with President Ashraf Ghani, who clearly mentioned, that Afghanistan will never let its waters flow freely, we shall trade in oil instead. And the Rouhani Statement, that neighbors are responsible for water crisis in Iran without mentioning anything about the inward water policies. These all-emotional communication on water issues are more signs of threatening each other further eroding trust and cooperation. Weaker riparian states can use such statements in their favor by shaming and naming the stronger riparian state.

Lack of trust among riparian can also be due to corruption within the weaker riparian governmental systems. Corruption also limits the institutions' capacity to ensure the efficient and effective planning, implementation, and monitoring of the transboundary water projects. Corrupt officials usually delay or block the processes causing further mistrust among the riparian states. In case on Nepal, Afghanistan, and Tajikistan the coordination is lacking even amongst the interagency mechanism within the states, further delaying the decision-making processes. The roles and responsibilities of sectors are usually unclear, leading to cooperation and constant competition over funding.

Encouraging parties for participatory research and Joint data gathering:

Third party can encourage both weaker and stronger riparian parties for joint Information generation and data gathering through participatory research methods. Management over the transboundary waters requires a wholistic approach that reflects the facts in an impartial manner. Since data is the source of power having the right amount of data on hand the weaker riparian can be more confident in pursuing the stronger riparian based on facts than mere emotions One of the challenging issues for most of the water mediators is how the data is collected, analyzed and results have been generated. Any kind of cooperation is bound to face setbacks if data is insufficient, unacceptable for all concerned parties, and is equally available to all. The role of regional and international organizations becomes more important when they encourage and provide structures for both weaker and stronger riparian state to collectively gather and analyze the data.

The joint data gathering is not familiar among the riparian states especially in Central and South Asia, as it involved multiple level of coordination among stakeholders, which many

riparian states have no previous experience with. Especially the stronger riparian states have always adopted unilateral approaches for development of water resources and inclusion of weaker riparian has never been a normal trend or priority. Therefore, modelling or scenario building demonstrating joint data generation can convince the parties to jointly conduct research. Third party can also reduce power asymmetry by introducing approaches which can bolster trust among the participants one such method is to conduct Participatory Action Research. This approach will guide the riparian states to ensure the participation and active voice of all stakeholders currently working on promotion of regional peace and cooperation on transboundary waters. Participatory action research has the tendency of changing mindset while conducting research as the riparian states are usually fragmented across national interest, this process will undoubtedly provide a framework to break some of their preconceived notions and create empathy towards each other.

“The participatory research process enables co-researchers to step back cognitively from familiar routines, forms of interaction, and power relationships to fundamentally question and rethink established interpretations of situations and strategies (Bergold and Thosam, 2012).

World Bank, Asian Development Bank, the USAID, and other international entities can provide a platform for joint data collection between Pakistan and Afghanistan on Kabul and Kunar River, the presence of the third party can ensure that the stronger and weaker riparian actions are watched out and they all play by same rules.

The different riparian can also be motivated to generate shared knowledge and reflect them in appropriate report formats. This way all participants will collaboratively generate the knowledge from their own insights. The role of third party in monitoring such a process of joint data generation is key, they can involve processes that involve positive future scenarios and motivate riparian to move beyond win-lose to win-win approaches.

Joint data gathering was first mentioned in the Helsinki Rules 1966, whereas the practice of data-sharing and data exchanged exists way before in other water contexts. Data sharing has been part of the international conventions on waters 1997 and 1992 water convention. Data sharing has been part of many water treaties signed in the Europe and the Unites States, that can be attributed to the governance system based on liberal democratic values. The data gathering version is also more prominent in bilateral agreements than the multilateral one because of the mere fact that there are more bilateral than multilateral agreements on the shared water basins (Gerlak, Lautze and Giordano, 2011).

Data sharing has been identified as a major tool to prevent environmental degradation, adopt to climate change realities, mitigate, and prevent conflict on water resource development and enabling better environment for managing shared water resources. The precedents for data-sharing exist in several contexts that benefited all the riparian at risks. However, despite the inclusion of data-sharing in the main treaties, there are not many precedents of effective joint data gathering and data-sharing. The lack of data exchange is a global problem despite legal and operational mechanisms in place (Akhtar, 2010). however, in some contexts the frequency is higher than the other contexts, especially in Central and South Asia. The countries also rely on indirect mode of information sharing

than direct in the form of prior notification and formal mechanisms. The formal and direct exchange of data is gaining more momentum as the new trend (Conca, at all, 2006). However, despite this growing trend there is still a high level of reluctance to include data-sharing and joint data gathering in the formal water treaties.

In all the cases studies for this research, lack of joint processes is a major cause of power asymmetry among the riparian in conflict. In case of Afghanistan and Iran, Iran a stronger riparian continues to conceal the data from Afghanistan. And Afghanistan lacks major data to agree upon entering any kind of negotiations. Also, with other riparian states lack joint data-gathering impedes cooperation. None of the riparian have agreed upon the technical cooperation on shared water rivers and the role of international organizations have been limited to implement country-based approaches without inclusion of all stakeholders due to intense geopolitics and varying level of needs and capacity of each country.

Track II level focus group discussions, jointly reviewing the environmental contents including the state level mechanism and their effectiveness, and role of institutions, key accounts of demonstrations reflected in newspapers during elections- using water as a tool for political campaigns, including audiovisuals that reflect the main events on cooperation and conflicts can reduce power asymmetrical relations.

Nepal and India also faced a situation of lack of data sharing and conducting joint assessment. The data shared by India was not wholistic in nature which was subsequently not accepted by Nepal on several instances. And in case of Uzbekistan literally no mechanism of data sharing existed due to high level of mistrust and persistent conflict at several levels on both water and non-water related issues. It is also vital in these basins to

jointly revisit the previous data gathered jointly as the process can unravel some of the wrong water policies, the cost of unilateral development schemes and the potential for prevention of future similar conflict scenarios. One of the major reasons for not sharing the data in these basins are the form of government, in Uzbekistan, Iran and during the monarchy in Nepal the closed system of government restricts any information sharing, as all water data is considered classified and a matter of high national interest.

In such contexts the role of international organization is invisible. Therefore, democratic systems with open institutions, especially the open media and civil society can allow for better shared knowledge generation, information and data exchange, and joint monitoring and evaluation of the water resource development programs. Data exchange and data sharing shall be placed at the heart of any bilateral and multilateral agreements in the mentioned context to allow for future cooperation and preventions of environmental disasters, and mitigation power asymmetrical relations in the water basin.

### **5.3.2 Power to Challenge the stronger riparian:**

This approach is more robust in liberating the weaker riparian to comply with the rules established by the stronger riparian state (Zeitoun and Jägerskog, 2009). The purpose of this strategy is to enable the weaker riparian state to speak to the power by either enhancing the role of the weaker riparian actors or levelling the playing ground for both weaker and stronger riparian state. The role of the third party is key to enable the player by building the negotiation capacity, technical water management capacity, enhancing the capacity to generate narratives, and have skills to find loopholes in the treaties and be able to put forward provisions in the treaty that ultimately reduces power asymmetry and ensure

equitable and fair management of water resources. This approach also entails leveling the playground on equal terms for both the weaker and stronger riparian states. This includes activities to increase the legitimacy and authority of the weaker riparian party. For example, the role of the third party is detrimental to set rules for both weaker and stronger riparian to look beyond the zero-sum gain but focus more on win-win approaches for all co-riparian parties. The similar is to use international water laws and mark countries unilateral actions accordingly and raise awareness around benefit-sharing, data-sharing and long-term gains. Additionally, build the capacity of the weaker riparian state through training, exposures to other basin arrangements, and access to the same level of information equally with the stronger riparian state. Capacity building can also aid building trust among the weaker and stronger water riparian in shaping legislative and regulatory environments conducive for water cooperation by hydro- hegemon.

The role of third party is not entirely limited to water arrangement but also bolstering the overall peace and security of the region by promoting regional peace and security agenda. Countries in the regional frameworks can better learn and replicate from other non-water cooperation arrangements.

The role of regional organizations, international organizations to challenge stronger riparian parties:

Wolf advocates for the institutional mechanisms that focus upon cooperation on TBW regime. He argues that TBW in nature creates an environment of interdependence, which requires parties to establish TBW mechanisms that can be beneficial even among the states having hostile political relations (1999). This way of thinking proposes to view

water cooperation as a technical or functional matter than a political issue as it makes the cooperation separate from other tense issues. Water cooperation can also push conflicting states to cooperate on other fronts, there are certainly precedents where water have resulted in securing mutual trust, good neighboring relationship, and responsive institution among riparian states especially amongst European states.

The key role of transboundary water organizations is to provide a platform for coordination through which countries can build resilience and provide capacity to manage all aspects of the water interaction on socio-economic terms, political issues, and technical aspects of transboundary issues. The states vest the institutions with a mandate, and then the institution implements that mandate. Therefore, institutions are the key drivers of transboundary water governance by providing the resources, mandate, and structure to implement the water agreements. These institutions provide the platform for the interest of all the riparian parties in conflict. These institutions should be open to the public to allow the voices to be incorporated in the major planning and decision-making processes.

For instance, the Danube or Mekong Commission which have established stakeholder consultation platform for public participation. (Schulz, 2012).The public should also have strong mechanism of seeking accountability and transparency from the organizations. The public should also have access to data and be able to participate in the information sessions pertaining to the development of the basins. The institution mandate shall focus on regular exchange of data. Institutions if wholistic in nature provide overall support for maintaining the ecosystem of the river basin than providing individual riparian support only to water related issues.

The institutions can foster mechanisms to ensure regular dialogue and communication options between the riparian in conflict. These institutions can formulate structures that respond to all stages of project implementation cycle on the shared river basins. Some of the institutions are the result of conflict between the riparian states such as National Ganges River Basin Authorities (NGRBA), Indus Basin Organization, and Jordan River National Advisory Committee, while others have emerged as the part of established treaties or ministerial agreement as foundational agreement that establish the institution.

Institutions can play an effective role in conflict mitigation by developing negotiation and mediation skills and adopting collaborative behavior and moving beyond reductionist expertise. The values of collaboration and cooperation should be adopted by the institutions. These institutions shall be based on the main functions than the priority of managers. In other words, the system, organization's mission, vision, and values as well as priorities should be institutionalized. Leadership change should not cause an institution. In doing so, the efficiency and effectiveness of the organizations/institutions will enhance and the overall environment for cooperation on development of water resources will increase. The mandate should be aligned towards benefit sharing versus allocating flows. The regional water institutions shall also separate the political and technical matters to better ensure effectiveness on water management. These organizations should promote the culture of learning and be flexible in adapting to the new climate realities. It becomes highly challenging the development and implementation of the new programs due to strict bureaucracies existing for years in the organizations. Therefore, adaptive management should be integrated since the inception of such institutions. The laws and policies should

be responsive to the emerging needs of the riparian states. Furthermore, these institutions should practice ownership over the process for water governance, monitoring and evaluation and refrain from political sidings with each partner.

There is only one commission currently active between Afghanistan and Iran- Helmand commission. The overall effectiveness of the cooperation under this commission needs to be revisited, both countries should ensure that data is shared on equal terms. The basin development should incorporate long-term sustainable plans to consider the benefits for both riparian states. Similarly, the world Bank has invested in some initiatives between Pakistan and Afghanistan on Kunar River, a hydropower project intended to be developed on the Kabul River. But the political mistrust and bureaucratic delayed process caused fatigue and the World Bank decided to work on other projects which have more political buy in from the concerned governments. Afghanistan must ensure that World Bank and similar organizations expertise and resources are utilized effectively. With Taliban in power, the future modality of Helmand commission remains a highly controversial matter, especially the management of the technical and political matters pertaining between the states. With Pakistan and Central Asia Afghanistan no institutions function to ensure the proper implementation, monitoring and collaboration on the Kabul and Amu Darya.

In case of Uzbekistan and Tajikistan the Interstate Coordination Water Commission (ICWC) established in 1992, governed by the governments of four Central Asian countries including Uzbekistan, Tajikistan, Kazakhstan, and Kyrgyzstan. The mandate of it was only focused on water division than approaching water conflict in an integrated water management basin level approach.

Other platforms were initiated by the United Nations for the protection of Amu Darya and Syra Darya where both Tajikistan and Uzbekistan remained on the members, such as the un-backed Special Program for the Economies of Central Asia (SPECICA). But due to high politics, these institutions failed to achieve its mandate which is tackling existing challenges to sustainable development, transboundary water management, border management and improving connectivity. (Relief Web, 2002).

In addition, Afghanistan was not using its share of waters from the Amu Darya due to years of protracted conflict. After 2001, the government of Afghanistan started developing its irrigation system, the impact of more water utilization by Afghanistan was soon more visible and downstream riparian started feeling it. Afghanistan's increasing water utilization extra pressurized on the Amu Darya riparian states for collaboration though meaningful collaboration seems impossible in the absence of an acceptable institutional mechanism. Increasing use of water by Afghanistan in the absence of water cooperation and coordination because of lack of mechanism, tools and institution will further intensity conflict and is precited to even march higher challenges.

The Non-governmental Organizations (NGOs) also lack the required credentials to ensure the proper mobilization of people and provide quality research and cooperation processes. NGOs play a key role in development in most of the open societies with holding wide scope of work and having access to large amount of funding. Therefore, NGOs are a key player and this paper intended to explore their function in transboundary waters. These NGOs bear the responsibility to provide consolidate quality data based on which timely decisions can be made.

Transboundary water management requires facilitation between different stakeholders including both state and non-state actors often with conflicting interests, requires outstanding facilitation skills, institutions and the governance mechanism that is inclusive in nature to make sure interests of different parties are well addressed.

For all the river basins studies under this research a multifaceted, multilayered institution mechanism is required that can respond to social, economic, environmental, and political aspects of water use for all the riparian states. Unfortunately, both in case of Uzbekistan and Tajikistan, the water interactions are more visited through engineering lens without paying attention to a comprehensive approach. The role of non-state actors such as NGOs and academics are key to be able to work with the water institutes. The more widening the participation the more learning and adaptation to the change can happen. Making these structures more inclusive by giving authority to water officials and providing them visas to travel between states can further boost trust and ensure long-term efficiency.

Transboundary water management is also affected by different policies adopted by riparian states on socioeconomic development, water-use objective, and political environment. The role of international organizations is key in providing technical support to the riparian in conflict. Usually, the countries are obsessed with the development of dams which either can ensure long-term economic growth and development or can be counterproductive. This case is observed in Iran, where state has subsidized the agriculture and dams have been constructed without conducting proper feasibility and climate adaptation aspects leading to further environmental disaster and have caused extreme water scarcity leading to demonstrations. (Climate Diplomacy, 2021). In this case related water and environmental

expert institutions can play a significant role in providing expert input for sustainable development projects that prevent long-term environmental issues.

However, due to lack of trust countries somehow are reluctant to hand over the decision making to these water and environmental related expert institutions. Mostly, these water and environmental related institutions are blamed for not considering the power asymmetrical issues and role of hegemon who can easily influence the organizations through lobbying and advocating by being savvy in international laws and strategic communication skills which the weaker riparian lacks. Therefore, third parties such as the World Bank, the United Nations and Bilateral donors can play critical to train parties on win-win approaches, model the cases of cooperation from around the world and prepare the parties to seek benefit-sharing than water division out of transboundary water interaction. Institutionalized cooperation for regional integration is also deemed necessary to uplift states' power in facing stronger powers.

Regionalization is deemed necessary for countries smaller in size and dependent on other states in power. Regional cooperation can help these states to be self-reliant, be part of collective bargaining for consistent, economic, and social policies and environmental sustainability (Frankel, 2007, pp.84). It is observed that specialized and functional regional organizations can further the cause of TBW management. In a politicized region TBW mechanism usually requires comprehensive regional approaches that tackle both the political, legal, and technical aspects of cooperation. Regional and extra-regional institutions shall also be aligned with national concerns and incentives. Regional states shall be the main driver of such a regional program than be the mere implementers. The

role and functions of the regional organization require some baseline to measure the success of targets achieved (Soderbaum and Granit, 2013, pp.111).

The other problem with the institution's effectiveness can be due to differences in capacity, level of material and technological growth.

### ***5.3.2 a Power in negotiation***

Power is also relative and fluctuates depending on the stakeholders, therefore weaker riparian can have relational power without consideration of material, military, and geographic power as a standard. By adopting well-thought strategies, weaker riparian states can influence the direction in which the negotiation follows. Weaker riparian can strategically agree upon Best Alternative to a Negotiated Agreement (BATNA) and Worst Alternative to a Negotiated Agreement (WATNA) without heavily relying on nationalism to safeguard their rights. The political clout created for the support of their positions can serve the weaker states in the short-term but in long-run the more agreed upon benefits and cost can enhance their power in negotiations. The identification of best alternative by considering all socio-economic and political and environmental costs and benefits can equip the water bureaucrats to seek more sustainable sources of power than achieve tactical gains through either compromise, denial, or punishment.

In case of Nepal power in negotiations are exercised by India in all aspects of negotiation. The influence on Nepal is so paramount that it is hard to distinguish between imposed or accepted power imbalance between the states. The politicians and water bureaucrats all seek some kind of favoritism from India playing the role of big brother. Therefore, the notion of states playing as sovereign entities becomes highly murky in the present of the

great level of influence that is hard to title as manipulative during the several stages of the negotiations. Nepal has been very hasty in concluding the Mahakali treaty which is due to the factors of power ingrained in all aspect of state-state interactions on both water and non-water related issues.

The cost of non-cooperation is key to be evaluated prior to delude into any kind of perception. The other major factor is time in deciding both the course of the negotiation and raising its own power imbalance. Delaying the negotiations can help the weaker riparian to buy more time to build some of its resources, including enhancing its negotiation skills, gathering more reliable data, and building the capacity of institutions to ensure the proper follow up of the agreed also allows the weaker riparian to ensure its rights in the face of a stronger riparian. Once of the reasons, Afghanistan has never showed readiness for negotiations because it was renting more time to be able to enter the negotiations with more preparedness both in terms of access to reliable hydrological and meteorological data and skillful negotiators.

The other important matter to distinguish between the positions vs the interest and needs of the parties involved in the negotiations. The stronger riparian due to power asymmetry tend to use the historical rights as a mean to manipulate the weaker riparian, however, without understanding the development gains and the lagging period of the weaker riparian due to economic or political reasons. This use of term is justified to seek the extra benefits out of shared basins by ignoring the actual needs. The stronger riparian position remains rigid and unshakable which can be challenged by pushing the stronger riparian to underlying interests and needs.

In terms of Afghanistan and Iran, Iran uses its historical rights as a power without resorting to its actual legitimate needs by keeping into consideration the actual needs of Afghanistan stricken by acute poverty and years of conflict and social unrest. The similar is with Pakistan which focuses on Afghanistan only seeking international aid for development of its waters without seeking any help from neighbors due to geopolitical reasons. The needs of a later developer should be considered by the stronger riparian in its actual terms, dismayed by this fact, can provide the environment of mistrust and push parties to delay negotiation further causing damage to the shared river basins. Therefore, understanding the overt and covert interests and trying to negotiate around those can determine the outcome. Therefore, outcomes of water negotiation can be measured based on their effect on each riparian ability to meet its needs. Therefore, in most of the negotiations the evaluation is important to understand which needs and interests of stakeholders are met under what circumstance and how this interest will be safeguarded.

Package approach or issue-linkage is another way to influence the negotiation path and its outcome by linking water issues to other economic and political issues. This approach has been used in case of Afghanistan and Nepal. Where waters cooperation has been part of a larger document on bilateral relations between Afghanistan and Iran. Iran has linked the issue of refugees, narcotics and other bilateral security and economic issues. This way benefits can be extracted from the entire package and water issues can be compromised without handling them separately. Indirectly stronger riparian can explore benefits by not focusing only on water per se, but beyond water.

Iran has used water as part of bilateral cooperation mechanism that indirectly replicates that cooperation on economic and security fronts are only possible if water is part of this entire cooperation framework. This ultimately and indirectly reduced the negotiation power of Afghanistan; the cooperation memorandum of understanding prepared by Iran were not signed between the government of Afghanistan led by President Ashraf Ghani but was highly criticized by water officials as it was marked as a tactical tool to gain the benefits by mixing several issues together.

The use of international water law conventions can also provide the balancing ground for the weaker riparian to enter negotiation. The principles of “equitable and reasonable utilization” can be used by the weaker riparian states to enhance and harness the fair playing ground and exercise better negotiating power. Currently, most of the countries especially central and South Asian countries are not signatories to international water Law and water conventions of 1992 and 1997.

The third party can also play an active role in setting the principles, agenda, and follow-up mechanism. Furthermore, countries aligning their national laws with the international law can benefit from approaching the water negotiations from more equitable footings. The weaker riparian should invest in understanding the concepts of international water law and make it more available and acceptable among the various stakeholders within their countries. Being a signatory to international water law can allow the weaker riparian to claim fair treatment when negotiation kicks off. Furthermore, negotiations can be beneficial for all the riparian actors if common threats of non-cooperation can be evaluated in terms of security, economic and societal and political stability.

In case of Afghanistan, the new Water Law and the Transboundary Water policies are designed in 2015 considering the International Water Law and Conventions. These documents have the potential to guide the new generation of Afghan water bureaucrats and politicians to view water more as a shared resource than a resource originating from Afghanistan. The perspective on shared water between Iran and Afghanistan is perceived through a narrow lens of national interest dismaying the rights of late developer in absolute terms. With Uzbekistan new government the state is more open to include the needs of Tajikistan into account.

This openness and aligned with the international conventions are yet to be tested as the time moves on. However, the rhetoric's remains highly promising from Uzbekistan to understand the needs and interests of Tajikistan for the development of the Rogun dam. In terms of Nepal and India's' asymmetric water relations, the academics, civil society, and media has actively advocated for the fair relations based on the international norms of equity and fairness, however, these efforts have not been reached to the policy level yet. Bureaucrats and politicians continue to seek favoritism from the dominant riparian state, India by sweeping the water issues under the carpet. If negotiation had to happened over the Mahankali, the approach of the Nepalese government should be diversified, which require stable economic power for Nepal to be able to be an active player in water negotiations than a mere recipient of the agreed decisions.

In the absence of common threats and common interests in most river basins the stronger riparian tends to gain the inequitable and larger portion of water both in terms of volumetrics allocation and benefits derived from water resources. The concept off mutual

benefits and wide basin rights approach can only be acceptable if the customary laws are in align with it, otherwise, the unilateral resource capture mindset can only focus on distributive negotiation leading to further water divide where dominant riparian state has always been the absolute winner.

### ***5.3.2 Mediators challenging power asymmetry:***

Third-party interventions are critical when states are reluctant to initiate the formal negotiation process. The mediator, if trusted by all sides, ensures that the integrity of the entire process is intact, and the party's needs and interests are met on fair and equitable accounts. Mediators can also make the parties trust the process and results generated subsequently. The mediator can also provide precedent from other case studies that have similar ramifications to build the confidence of the parties to trust the process. He/she can also provide a better picture of the cost and benefits of cooperation by revealing all aspects of negotiation contents. Mediator can also ensure that parties have clear rules on communication both oral and written.

Participant's capacity can be enhanced if mediators are well-versed in focusing on the right kind of approaches that proves beneficial to both. Parties can also rely on mediators for making sense of joint data gathered and information generated, mediators can ensure an interactive dialogue and provide feedback to consolidate the information.

Mediators can also guide the parties to lower the sentiments and emotional aspects of the interaction. They can bring parties to a better focus on benefit-sharing than water division, by creating shared values of protection of water resources for the long-term benefit of societies and nature. Mediators can bring parties to agree upon some of the most complex

issues, as water issues are multilayered involving various stakeholders with different value systems. Mediators can also help the parties to set up realistic expectations and deadlines for the attainable tasks. They can also limit the role of spoilers by being affirmative and keeping the dialogues on track. She can create an environment to push the parties to define creative solutions.

However, in many cases the role of language is critical, in the regions where all parties do not communicate in the same language and English is used to conduct negotiation and mediation session, it is hard to gain the trust of the native speakers; the quality of translation can also affect the flow of information. Mediators fail if they are not well prepared about the conflict dynamics, the fine line between political and technical aspects, and the readiness of the parties to implement the provision of negotiated agreements.

#### **5.4 LESSONS FOR AFGHANISTAN TO MITIGATE POWER ASYMMETRY:**

Afghanistan remained as one of the least developed countries with 0.511 Human Development Index value placing the country in one of the lowest human development categories 169 out of 189 UN recognized countries and territories (Human Development Profile Report, 2019). Afghanistan is going through a catastrophic era of its contemporary history, an aid-dependent economy which collapsed shortly by the time the U.S and its allies withdrew from the country and Taliban took over control of the country on August 20, 2021. Unemployment is mounting with 23.9 percent in 2017, in addition latest reports from Afghanistan including The Guardian published on Sep 09, 2021, presages a chaotic situation to which 97 percent of Afghans (out of almost 38 million population) probably descend below poverty line by 2022 per a United Nation's report published ahead of the

UN meeting convened by the UN secretary general (2021). Transboundary water development remains on the key agenda of the government of Afghanistan to curb poverty and ensure long-term development and growth.

As of 2015, Afghanistan had a total capacity of 520 MW power out of which 254 MW 49 percent from hydropower facilities, 200 MW or 39 percent thermal-generated from fossils and 65 MW or 12 percent electricity from generators. 75 percent of Afghans live in rural areas while less than 9 percent of the rural population has access to electricity. Since most of the total population lives in rural areas and are engaged in agriculture, rural economy forms almost 67 percent of the total GDP, water utilization for irrigation is significantly important for Afghanistan's rural economy. According to the Asian Development Bank sector assessment, Afghanistan needs an estimated 2500 MW. Afghanistan imports 80 percent of power which is supplied to citizen across the country. The country suffers from energy deficit while studies indicates that Afghanistan is capable to produce an approximately 23,000 MW of hydropower, and 289,000 MW (69,000 wind potential) of renewable energy including wind and solar potentials.

Fragile agriculture infrastructure including irrigation system, lack of electricity and water reservoir, negatively impacted Afghan economy, as well those of our neighboring countries that suffer from seasonal flood and persistent droughts. Afghanistan improved reservoir and hydroelectric plants will benefit neighboring countries as well. Obviously, utilizing from all energy potentials requires immense number of resources both financial and technical, in addition expanding hydropower facilities are a time-consuming process yet it tremendously contributes to energy security and boost country's economy which ultimately

contribute to country's political stability. Economic and political stability in Afghanistan contributes to regional stability and energy security in the region. Afghanistan through its nationwide distributed resources has promising opportunity, to begin with, to produce clean energy, addresses energy deficit and ensures energy security, in addition, improve irrigation and agriculture to safeguard food security, and to conclude further manage variability of water flow and share data for increasing water cooperation with other countries.

Afghanistan as a late developer has every right to catch up its neighboring riparian states considering their development concerns. Meanwhile, Afghanistan needs to make sure it makes best use of its resources considering complying with international water laws, benefit-sharing principles and pursue this overarching objective via having constructive technical dialogue with neighboring riparian states. Afghanistan's neighbors require to understand the fact that the country fell behind due to political instability and turmoil and to keep falling behind in development, will ultimately negatively impact neighboring states. Continuing economic and political destabilization in Afghanistan will lead people to flee to neighboring countries in search of better life, push farmers to cultivate opium and provide the opportunity for international criminal groups to operate using Afghan soil for international terrorism. Afghanistan political and security environment has a direct impact on defining its position and role with the other co-riparian in the region. Due to protracted conflict, year of destruction and violence and lack of attention to development and growth, it remains one of the weaker riparian in shaping power dynamics: the political and security

context is described in detail in the following parts that have significant impact of development of transboundary water interactions with the riparian states.

#### **5.4.1 Political stability and presence in the international forum:**

From a historical perspective, Afghanistan's history is filled with violent and protracted conflicts both internal conflict which often rooted in ethnic and tribal tensions. Sometimes conflicts also had external causes which often was because of geopolitics of regional and global powers. Especially after the cold war period 1987-1994 and dwindling international attention the environment became ripe for civil war and subsequently capturing of Afghanistan by Taliban in the year 1994 associated with the international terrorist organizations. Rises of the Taliban in their stronghold Kandahar province in the Southern Afghanistan with the support of Pakistan during chaos was very much welcomed by ordinary citizens. Emergence and expansion of Taliban in Afghanistan as a conservative and fundamentalist group changed the outlook for Afghanistan, a complete new dark chapter for socio-economic development of the country with internationally imposed sanctions. Taliban could quickly ensure minimum security by disarming and demobilizing Mujahadeen in Kandahar and reinforced rule of law through implementing Sharia Law. They offered quick access to justice for victims of warlords by amputation, execution in public.

As Taliban grew, they started implementing an extremely strict interpretation of Sharia law which was more of the Pashtun Wali code of conduct. They curtailed women's education, forced them to fully veil and not to go out of home without a man legal accompany. Sharia law was enforced such as public execution, amputation of body parts such as hand, eyes

etc. A fully conservative fanatic group now governed Afghanistan and with their dark-  
aged policy took Afghanistan back to the stone age at the price of minimum security and  
Taliban's version of access to justice which indeed was completely in violation of all  
internationally accepted human rights principles.

As a radical, conservative group, Taliban did not believe in science, technology, modern  
education, and regional frameworks for development. Taliban made no efforts for  
development of the country, especially water sector. While conquering the northern  
provinces in Afghanistan, soon after entering to Mazar-e-Sharif province, Taliban breached  
into Iranian Consulate and killed 8 Iranian diplomats which elevated tensions between the  
two countries to a degree of a large conflict. Taliban also ceased flowing Helmand River  
flows into Iran which was not only in contrary to the water agreement between Iran and  
Afghanistan but also to any international water law and the natural law of water flowing to  
Iran. Taliban regime had more neutral standpoint toward Amu Darya Basin as it locates in  
areas of non-Pashtun ethnic groups, therefore they do not concern about its development.  
Taliban did not want to create trouble with Pakistan by focusing on Kabul Darya Basin.

As a radical and inexperienced young ruler, Taliban had neither knowledge of international  
politics, diplomacy, governance nor the capacity to run a nation. They had no respect for  
human rights and suppressed people more than at any time in the past. Overwhelm citizens  
with stringent ethnic and tribal code of conduct, cause a huge bulk of Afghan bureaucrats  
and intellectual to flee the country in search of a better and secure life to other countries in  
the region or aboard. This included many engineers, water officials and diplomats with  
more knowledge of countries' water resources. This was the time when neighbors of

Afghanistan could not maintain a smooth transboundary water interaction with Taliban. International community-imposed sanctions on Taliban government based on their strong ties with the international terrorists who carried out broader agenda of Jihad and fight against the western societies. Taliban hosted Bin Laden, and the terrorist training camps. Bin Laden was accused of bombing of two American embassies in Kenya and Tanzania in 1998. Taliban rejected to extradite Bin Laden which led the United States to conduct missile attacks against Bin Laden camps in Afghanistan. Taliban continued hosting Bin Laden until the 9/11 tragic incident happened, Taliban still ignored to transfer Bin Laden for trial to the United States. Taliban's ignorance costed them to lose control of Afghanistan which the U.S and UK launched attack on Oct 07, 2001, and removed the Taliban from power by Dec 07 of the same year. In the following period of international intervention, peacebuilding regional cooperation on TBW interaction increased the account of which is given the following part.

Even though in this study I emphasize de-politicizing issues related to transboundary water and deal with it further from a technical perspective, however it is hard to practice it on the ground in developing countries. As Thomas Vincent in his study of transboundary water in Afghanistan articulates, it is hard to separate cross-border water resource development from international politics (Thomas, 2014). Afghanistan has contested border and territorial issues with some of its neighboring countries which impacts water dialogues as well. Although international water conventions urge governments not to use water as a leverage tool in international politics, yet President Ghani quite often spoke about Afghanistan's water resources publicly.

On different occasions, Afghanistan neighboring countries including Iran accused Afghanistan to use water as a tool for political leverage. Afghanistan with the support of India built the Afghan-India Friendship or Salma Dam on the Hari River Basin which is shared between Iran, Turkmenistan, and Afghanistan. India supported Afghanistan technically and financially to build the dam. Both Iran and Turkmenistan had serious concerns about Salma. While Afghan authorities including Eng. Ali Ahmad Osmani, former Afghan Minister of Energy and Water argued that construction of Salma on Hari River will only affect 30 percent of the Hari River water.

There have been numerous suspicious violent attacks by the Taliban on security and technical personnel of Salma dam in the past, Iran was accused to sponsor those insecurity incidents. Iran also has similar concerns about construction of Kamal Khan Dam on the lower Helmand River basin in Nimroz province. Iran believes that construction of Kamal Khan Dam is a violation of the 1973 agreement as it removes water from the historically accepted river system upstream and it negatively impact Iran's water share and water flow (Dehgan, Moloney, Mirzaee, 2014).

#### **5.4.2 Promoting regional connectivity:**

Afghanistan and Pakistan have strong trade relations which has sometimes been under shadowed due to political tensions. Afghanistan has been exporting perishable and non-perishable commodities to Pakistan on regular in the event of massive natural catastrophes such as flood. The same is true for Pakistan as it remains the largest supplier to its landlocked neighbor Afghanistan. Pakistan as a stronger riparian can explore the role for positive leadership in managing water resources as Pakistan is suffering itself due to

extreme poverty and millions of people in both countries are facing dire need for food, water, and energy. Influencing the stronger riparian to work on non-water issues and enhance collaboration can be a tactic for Afghanistan to balance asymmetric water relations.

Afghanistan can also mitigate asymmetrical power relations with Pakistan through finding alternative trade corridors. Currently Afghanistan is highly dependent on Pakistan for its import of basic commodities. Regional Projects like TAPI (Tajikistan, Afghanistan Pakistan, and India) gas pipeline marked an intriguing opportunity for collaboration amongst the region, which could also serve as an example to cooperation on water issues and can bring the players on the equal playing ground, is however at stalemate due to Pakistan military shaping the course of cooperation with India. Weaker riparian in this case can build stronger alliances and advocate robustly to pursue the project.

#### **5.4.3 Diversification of trade and dependence on Pakistan**

Chahbahar is an important project between Iran and Afghanistan and can serve as a mean of diversification of trade for Afghanistan and less reliance on Pakistan. Similar projects that ensure Afghanistan connected regionally and globally and is less dependent of its stronger neighbors can serve as levelling the playing ground for the stronger and weaker riparian. However, the prospects for such projects remain slim considering the geo-political situation and global attention on development in Afghanistan.

#### **5.4.4. learning from other later developer weaker riparian states:**

Afghanistan as a later developer should learn from the countries lagging in developing their water resources. Prolonged conflict in Afghanistan and political instability changes never

allowed the country to establish and strengthen strong and responsive water-related institutions either train qualified government bureaucrats. Political stability causes trained human capacity and elites to leave the country in search of better life, brain drain in Afghanistan was never a stopping game. Consecutive political changes have created an environment of mistrust and short-term thinking toward development plans. Strategic thinking toward development lacks in the presence of continued war and displacement. Institutional memories are constantly lost, and the government never could rely on internal financial resources to develop its freshwater resources.

As a weaker riparian state, Afghanistan power relies on developing its soft power resources. Afghanistan needs to train human capital, develop policies, invest on infrastructure, collect, and analyze data and overcome the fear of having dialogue with neighboring riparian states. The role of third party is critical to lay an equal playing ground, ensure that interactions between riparian in conflicts is not focused on zero-sum gains but goes beyond and introduce new incentives for cooperation than competition. A third party can also attract technical and financial resources for the joint ventures on shared water resources and can play a vital role to boost the credibility of the riparian states in the international platform. However, the third party must be respected by all riparian states, it should not be imposed with the hegemonic institutions but should emerge due to necessity in an organic manner. In case of Afghanistan the third-party role can be better facilitated by the international organizations than a country. Since involvement of the countries can cause the issues of impartiality and trust.

Therefore, the learning for Afghanistan is to first evaluate the weaknesses of its policies, capacity of its negotiations teams, and resources available to mitigate the power asymmetry and understanding the role and influence of mediators in conflicts resolutions. Afghanistan should also learn that water issues and political issues are intertwined in the context of Afghanistan, how to separate them and push the neighboring states also to negotiate waters issues independently. Afghanistan should also learn not to take into grant the opportunity provided by the international stakeholders. Afghanistan should obtain the trust of the international organizations which has not been a major strategic agenda for the Afghan governments in recent times. Afghan governments has remained highly critical of the international organizations and have invested little in encouraging the donors to allocate more resources into water sector development. The donors' funding should be utilized to enhance the capacity of water negotiation teams. Afghanistan should also retain its non-corrupt water experts and refrain from any kind of corruption in recruiting and retaining water diplomats and water experts.

Afghanistan had a very slow progress in all aspects of development including water resource development compared to its neighboring riparian states. The last two decades had their own challenges with widespread corruption at the top of the list and insecurity and donor dependency to follow. Yet, democratic processes and institutions were a platform for people to exercise their rights, choose leaders and keep them accountable. It was a nascent democracy and would have matured along the course of time. With the support of international community, Afghanistan had a great pool of human resources especially in water and energy sector. Keeping the same pace, there was a hope that

Afghanistan will soon open and further engage with neighboring riparian states for information sharing, water management and benefit sharing. Afghanistan was very much in the favor of enhancing regional cooperation. Afghanistan already secured membership of numerous international organizations such as the World Trade, an observant and non-voting member of Shanghai, initiated programs such as Heart of Asia.

Afghanistan had an elected government that respected international conventions and laws that it remains signatory with, it respected neighboring riparian states and planned to turn Afghanistan into a regional cooperation hub. Such an Afghanistan will ultimately positively impact neighboring states too. Political stability in Afghanistan contribute to political stability of the region. Now, Afghanistan is back to the dark age, it is ruled by a radical group around the ethnic and linguistic line. A group that has no governance, communication, and state building skills, relying only on religious belief in no internationally accepted values. Taliban has no vision for the country and the development perspective is dark again.

#### **5.4.5 Building negotiation skills:**

Water related conflicts are usually resolved through negotiation.”. Therefore, coordinate approach, data sharing, and constructive communication between the riparian states can lead to greater cooperation over transboundary water, decrease negative environmental and ecological impact, increase energy security and regional stability. Afghanistan and other riparian states’ actions and solution for water basins should lead equitability and increasing benefit sharing so everyone feels in and meet its development goal.

For Afghanistan to gain credibility in the international platform and during any negotiations with the neighboring states it is vital to ensure that its public services is free of corruption of all sorts. Afghanistan best resource is to train and retain water experts and diplomats who can generate strong narrative based on the real needs of Afghanistan and continue to push for negotiations focused on needs than positions. Bureaucrats in every government machinery plays a significant role to make government successful, deliver pledges, commitments and achieve public trust. Bureaucrats implement development plans and keep the institutional memory for building on moment of excellence. Employing bureaucrats and public servants in accordance with merits ensures government success. It contributes to increasing downward and upward accountability. Leadership in most countries barely pays attention to this significant development factor, this is a major reason why countries lack capacity in transboundary water negotiation experts like other development areas.

Indeed, other elements as such responsive and inclusive institutions play a substantial role in creation of an accountable leviathan in the country yet individuals play a key role in forming those responsive and inclusive institutions. As explained earlier, during contemporary history, States who experience different leadership, to which few appointed key government officials based-on their merits and not political affiliation, loyalty and or influence in their community. Appointing bureaucrats has largely been politicized, even appointment of lower-level bureaucrats.

Afghanistan should invest heavily on its water institutions; Kabul University Department for Water Studies should be supported by the government and the international community.

The emerging water scholars should be exposed to the other water basin institutions of the region and beyond region to learn and introduce new approaches to develop water resources. Academia can help the new generation to better understand the complexities of water interactions and its interplay with politics, technology, and financial resources. In comparison with the regional riparian states Afghanistan has fewer human resources which needs immediate attention by the government and the international stakeholders.

Afghanistan must also understand that as a weaker riparian it relies on the financial and technical support of the international organizations. Therefore, time, human and financial resources of such international organizations tap into such resources effectively and efficiently without politicizing and securitizing water interactions. In case of interaction with Pakistan several of such opportunities were missed by Afghanistan due to the tense bilateral political and security issues. Water interactions should be highly technical in nature as waiting for smoother bilateral political and security environment may take years. should be considered Afghanistan expert must understand that global attention is not guaranteed under all circumstances and using the window of opportunity is vital to develop its water resources. Donor countries and international organizations should be invited and guided throughout the process in a manner to ensure that they are contributing towards change rather than involving them in blame games and regional politics.

In case of conflict with Pakistan, Afghanistan should also involve the communities across the Kabul and Kunar River to shape the discourse, the community perspective can add further values to the inputs from policy makers, communities affecting from the water basin

can add nuanced knowledge that can move the parties from unilateral resource capture to more integrated water management model.

Afghanistan should also convince its neighbor Pakistan, that it will continue to remain impartial and remain friendly towards all its neighbors. Indulging in any kind of politics by favoring one country over the other can only create more animosity and prolong the conflicts.

In interaction with Iran, Afghanistan has no other option then to continue taking firm negotiation stance and bring all the available and reliable data to the negotiation table. Afghanistan has lost a great deal of its water resources during the years of conflict. Iran should understand the development needs of Afghanistan and refrain from any ambitious project on the Helmand and Harrirud River. The stronger the data to support Afghanistan position in water interactions the better it can leverage the process in favor of both countries. Both countries should work on developing sustainable water infrastructure on the Helmand and Harrirud than a unilateral approach. The role of third parties is critical in this case. Especially, the United Nations can play a pivotal role in laying the equal ground for negotiation over the water basins. Afghanistan should also utilize the naming and shaming tactic to pressure Iran to look inward to its destructive water policies.

#### **5.4.6 Building efficient diplomacy and bureaucracy:**

To ensure that riparian states best utilize its water resources, to be able to constructively be engaged with riparian states and to ensure energy security, and promote regional cooperation and salability, Afghanistan need to develop and invest on its systems, form inclusive institutions, depoliticize bureaucrats' appointment, and train local cadres to

present conflict sensitive and contextualized water development strategies and plans. Afghanistan politicians should understand that without doing the homework and investing on its own potential first, it will be hard to either influence or challenge the course of actions by the stronger riparian states. Self-serving policies, rampant corruption in recruiting civil servants, ethnocentrism leads to further internal divide in the country and limit the authentic role of Afghanistan in water diplomacy. Afghanistan government should prioritize water laws, policies and institutional arrangement to a level which can compete in terms of soft power with the riparian states. Investing in water experts, academic courses and initiating a country wide dialogue and discourse on TBW can make the water agenda stay on the top of regional agendas. The louder the voices of formal and informal entities are the better chances for influencing and challenging the stronger riparian are.

#### **5.4.7 Avoid package deals with stronger riparian states:**

Afghanistan highly dependent on its neighbors provide more opportunities to stronger riparian states for exertion of power when water interactions become part of package deal with other economic and political cooperations. Iran has constantly tried to package water issues with bilateral trade relations, refugee settlements and cooperation on transnational crimes. Packaging cooperation on water and non-water issues tends to murky the environment to focus water issues independently and know the power asymmetry the chances to lose benefit on TBW becomes more attainable by stronger riparian state. President Ghani signed Bilateral Cooperation MOU with Iran which included provision for cooperation on water and non-water matters, was highly criticized by water experts in the country for losing chances to negotiate on equal terms on water issues with Iran.

Afghanistan tends to receive benefits on other matters and must compromise on water related matters.

#### **5.4.7 Aligning with weaker riparian parties in the regional context:**

Afghanistan inclusion in the Central Asian Water Cooperation Frameworks will be a solution to further enhance its power in dealing with the Central Asian Countries. Afghanistan can benefit from shared developmental projects, data-sharing, and exchange of human resources in these interactions if it sided with the weaker riparian such a Tajikistan. Aligning with weaker riparian states tends to enhance the pie in the regional contexts. Afghanistan should continue to advocate for its inclusion in the regional and international platforms. This matter should be included in all agendas of the diplomats and water experts in all interactions with the Central Asian States.

To conclude, the region needs cooperation in every aspect including socio-economic and political cooperation to enhance stability in the region and ensure energy security considering the chaotic consequence of climate change. Afghanistan rich freshwater resources and water basin has the potential to escalate violent conflict between the riparian states and the region. Meanwhile it also offers the opportunity for regional cooperation and working together to counter the challenges the region is experiencing ranging from security challenges, socio-economic to famine and drought, displacement, and climate change.

Riparian states need to create an enabling environment, improve legal framework, further interact to understand each other's opinions and development objectives. All countries in the region need to work toward innovative approaches to address their development needs and work to address institutional and agency capacity deficits, ensure that players and

playgrounds are leveled, and they speak the same language. These approaches must be guided by the principle of benefit-sharing mutual trust, equity is sharing the resources generated from watersheds and sustainability. Afghanistan should focus on good governance, fighting corruption, and ensuring merit-based recruitment in its civil services. Neighboring states must refrain from pressurizing Afghanistan to comply with any enforced cooperation.

**STRENGTHS AND LIMITATIONS OF THE STUDY:**

The findings of this study are the result of zoom meetings with the water experts, government officials, diplomats, and scholars from Universities. Therefore, the voices of multiple stakeholders presenting various layers of conflict and cooperation events affected by power asymmetry is reflected. The contents analysis part has further delved into the literature available covering various aspects of water interactions between the stronger and weaker riparian states. The approaches that aid the weaker riparian states to counter negative power asymmetry and bolster cooperation. This study can give direction to dig further into the mentioned approach for countering power asymmetry among the weaker riparian states. Currently, the literature around strategies and tactics to counter asymmetrical power relations is limited in water interactions field and since the weaker riparian do not generate higher volume of contents and narrative, it seems hard to extract information that can aid to amplify the voices of the weaker riparian states in countering negative hydro-hegemony.

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## **BIOGRAPHY**

Farishta Sakhi received her Bachelor of Arts in Commerce from Baluchistan University, Pakistan in 2002 then went on to Eastern Mennonite University to receive her Master of Arts in Conflict Transformation. After receiving her Doctor of Philosophy in Conflict Analysis and Resolution from George Mason University in 2023, she will continue to work in academia.