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Inclusive development and multilevel transboundary water governance

The Kabul River

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Publication date

2020

Document Version

Other version

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Citation for published version (APA):

Hayat, S. (2020). *Inclusive development and multilevel transboundary water governance: The Kabul River*. [Thesis, fully internal, Universiteit van Amsterdam].

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INTRODUCTION

1.1 INTRODUCTION

This thesis aims to understand how transboundary water governance can be improved with special reference to the Kabul River between Afghanistan and Pakistan. In this chapter, the problem definition will first be discussed including the real-life problem (see 1.2) as well as the gaps in the scientific literature (see 1.3). The real-life problem takes into account the flow and administration-related issues in transboundary river basins. It explains the consequences of reduction in freshwater flow or degradation of freshwater quality in Transboundary Rivers. The literature review has provided insights into various relevant approaches such as power, institutions, multilevel governance and inclusive development as well as its implication for this thesis. The gaps in knowledge have highlighted the areas that need further research leading to the main research question and sub-questions (see 1.4) with special reference to the Kabul River. Third, the focus and limits (see 1.5) of the research are discussed. Fourth, section 1.6 presents the structure of the thesis.

1.2 REAL LIFE ISSUES

Currently about 276 transboundary river basins (Barraqué 2011a; Bakker and Duncan 2017) support the production of approximately 60% of global food (Sadeqinazhad et al. 2018), supply domestic water needs of approximately 40% (Munia et al. 2016) and accommodate more than 70% of the global population (Earle and Neal 2017). With the increase in population rate, fast urbanization and commercial agriculture practices the pressure over transboundary water resources will surge which may ultimately influence both the quality and quantity of freshwater (Cosgrove and Loucks 2015a; Munia et al. 2016). These issues may lead to different intensities of conflicts among states and societies (Kasymov 2011; Munia et al. 2016). Overall, water issues can be differentiated in terms of: (1) flow-related i.e., issues of water quality (see 1.2.1), quantity (see 1.2.2) and climate change (see 1.2.3); and (2) administration-related i.e., issues of power, jurisdiction, coordination, principles and instruments at multiple levels of governance. In the sub-sections below, I explain these challenges in detail.

1.2.1 Water Quality Issues

Water is an essential resource provided by nature which is used in our lives for drinking, cleaning, bathing and other developmental purposes (Bibi et al. 2016). Clean and safe drinking water is vital for human health worldwide. However, as a universal solvent, freshwater can also transmit infections (WHO/UNICEF 2015). According to a report (WHO/UNICEF 2015), water quality in several developing countries does not meet the WHO quality standards, and this poor water quality is responsible for 80% of diseases. Furthermore, unhygienic and poor quality of water is also responsible for more than three percent of deaths (Pawari and Gawande 2015).

The release of domestic, industrial and radioactive waste, dumping of waste directly into rivers, and leakage from water tanks are some of the most important causes of water pollution (Islam and Tanaka 2004; Halder and Islam 2015). Discarded heavy metals and industrial waste in lakes, streams and rivers

have proven to be harmful to humans and animals (Halder and Islam 2015). Harmful industrial and domestic waste are the key elements that contribute to causes severe poisoning, reproductive failure, and immune-suppression (Islam and Tanaka 2004). Transferrable diseases like typhoid and cholera as well as other diseases like diarrhoea, gastroenteritis, skin and kidney problems are mainly due to polluted water (Khan et al. 2013). Additionally plants and animals are also affected by poor water quality which can, in turn, affect human health (Haseena et al. 2017). Water pollutants can kill seaweeds, mollusks, seabirds, fish, crustaceans and other marine organisms that are the main sources of human food (Owa 2014). The excessive and increasing use of pesticides (e.g DDT) in agriculture is harmful for human health (ibid).

Table 1.1 shows the impacts of contaminated water on human health and the environment (see also Hunter et al. 2010). Water-borne diseases are transmitting from human to human (Halder and Islam 2015) carried by pathogens (Ashbolt 2004) that exist in specific regions or are common around the globe (Kamble 2014). Extreme weather conditions leads to heavy rainfall and floods in both underdeveloped and developed countries (McMichael, Woodruff, and Hales 2006). Contaminated water is being used in some developing countries to grow vegetables and other food items which is consumed by 10% of the global population (Corcoran 2010). Using contaminated water can lead to various chronic diseases including respiratory, cardiovascular, cancer, diarrhoea, and neurological (Ullah et al. 2014). Furthermore, Nitrogen-containing chemicals in water is one of the main reason for blue baby syndrome and cancer (Krishnan and Indu 2006). Mortality rates due to cancer is comparatively higher in rural areas than in urban areas because inhabitants of rural areas have less access to treated water (Angoua et al. 2018). Poor people face an increased risk of illness due to lack of access to improved sanitation, hygiene and supply of clean drinking water (Jabeen et al. 2011). Pregnant women are particularly vulnerable to negative impacts of contaminated water (Collier 2007).

Various factors such as dissolved oxygen, nutrients, turbidity, and water temperature contribute towards the growth of animals and plants (Kamal et al. 2007). Additionally, the chemical oxygen demand (COD) and the biological oxygen demand (BOD) specify the pollution level of a given water body (Shrestha and Kazama 2007). Each element has a specific and important role to play in the aquatic ecosystem. These ecosystems have a significant impact on the fisheries which are the main source of food for thousands of people living in coastal areas. Surface freshwater resources have a distinct role in keeping the environmental balance in the estuaries and at the mouth of the rivers (Postel and Richter 2012). Monitoring of surface water resources is essential for flood forecasting and aquatic resource management (Jacobs 2002). Contaminated water not only affect the quality of crops but also harmful for aquatic life (Khan and Ghouri 2011). The above water quality issues can affect relations between upstream and downstream countries.

Table 1.1: Risks to human health & the environment due to poor water quality

Wastewater Constituents	Parameters	Risks
Solids Dissolved inorganic substances	TSS, TDS, VSS, EC, Na, Ca, Mg, Cl, and B	Increasing soil osmotic pressure, blockage of irrigation system and increase of sludge deposits for salinity, Phytotoxicity and soil absorptivity and configuration
Other organic materials Biodegradable organic Materials Nutrients	Detergents, phenols, fat, oil, grease, pesticides, solvents, and cyanide, BOD, COD, N, P, ammonium	Poisonous effects, visual problems, bioaccumulation in the food chain, degradation in dissolved oxygen in receiving water body, decrease in fish production and increase in fish mortality, lack of oxygen, toxic effects.
Metals	Hg, Pb, Cd, Cr, Cu, Ni	Poisonous effect, bio-accumulation, can make wastewater inappropriate for irrigation, conceivable health effects
Hydrogen ion concentrations Microorganisms	Pathogenic bacteria, pH, virus and worm eggs	Possible adverse impact on plant growth due to acidity or alkalinity, cause diseases

Source: Jabeen et al. 2011; M. Khan and Ghouri 2011; Juneja and Chaudhary 2013; S. Khan et al. 2013; Owa 2014; WHO/UNICEF 2015; Pawari and Gawande 2015; Halder and Islam 2015; Bibi et al. 2016; Haseena et al. 2017

1.2.2 Impacts of Water Variability on Society & the Environment

Flow variability includes flooding as the result of higher glacial and/or snow melt rates and higher rainfall; droughts as the result of reduced contribution from glacial and/or snow melt and rainfall, low rainfall and high evaporation. Such variability can have significant consequences on social and environmental systems.

Flooding impacts include the destruction of crops, deterioration of health conditions due to waterborne diseases, loss of livestock and human lives, and damage to property (Armah et al. 2010). Additionally, communication and some economic activities can be disturbed, and people may be forcefully displaced (Corvalan et al. 2005). Floods can have long term psychological impacts on victims and their families (Doris et al. 2018). The loss of family members has a major impact on children. Forced displacements of human populations, loss of assets and disruption of social affairs and business due to floods can add to ongoing trauma (Cardoso et al. 2008). Floods in agricultural regions can damage crops and may also lead to the loss of livestock (Onifade et al. 2014). Increasing salinity in the soil, damage to the crops due to rain, and delays in harvesting are worsened by transportation problems due to flooded roads and impaired infrastructure (ibid). This may lead to reduced production in the agricultural sector and higher prices of food items due to supply shortages (Armah et al. 2010). However, on the other hand floods can have some long-term benefits for the agricultural sector in the arid and semi-arid zones as it may recharge underground aquifers.

They also enhance soil fertility due to mineral and silt deposition in the soil (Dokhani and Ramezani 2017). A much larger portion of the population is affected when floods damage the roads, railways tracks and shipping ports. These damages can have a significant impacts on the GDP of both developed and developing economies (Cardoso et al. 2008).

The social impacts of low rainfall and droughts include public well-being, health, disputes among water users, concentrated value of life and disparities in the dissemination of impacts, and disaster relief. Many of the economic and environmental impacts also have social components. For instance, population migration to areas where there are better food and water supplies puts pressure on those areas (Cosgrove and Loucks 2015b). Migration usually occurs to urban areas within the stressed area or to areas outside of drought zones. Migration can even be international to neighbouring countries (Selby et al. 2017). Migrants rarely go back to their homes even after the drought passes which results in lack of valuable human resources in rural areas. Drought migrants put enormous stress on the cities' social infrastructure, leading to an social disorder and rise in poverty level (Wilhite et al. 2007). These impacts of water variability affect relations between transboundary countries.

❖ *Environmental Impacts of Flow Variability*

Floods play a distinct role in sustaining key functions of the ecosystem and biodiversity in various natural systems (Schindler et al., 2016). They connect the river with the surrounding land, recharge the groundwater aquifers, fill the lakes and streams with freshwater and strengthen connection between the water habitats. Flooding is one of the main sources for sediment and nutrients transport into the sea and around the landscape (Onifade et al. 2014). Floods enable reproduction, migration and dispersal for many species (ibid). Natural systems such as mangroves provides adequate resistance to the effects of all kinds of floods except the largest (Liao 2012; Onifade et al. 2014). Increase in fish production, replenishing groundwater resources and preserving the recreational environment are some of the environmental benefits of flooding (Cosgrove and Loucks 2015a; Onifade et al. 2014). Floods can further degrade ecosystems (Holman et al. 2003) by transporting sediments and nutrients, increasing soil erosion, disturbing vegetation surrounding the rivers, enrichment of channel size, dams, and floodplains (Pressey and Middleton 2009).

Similarly, low rainfall and drought have various environmental impacts including damage to plant and animal species, habitats of wildlife, degradation of air and water quality, forest loss and forest fires, degraded landscape quality, biodiversity loss and soil erosion (Acevedo-Whitehouse and Duffus 2009; Wilhite et al. 2007). Some of the impacts of drought are short-term where conditions are normalised soon after the drought while some persist for long-term and may even become permanent (Meir et al. 2018). For example, due to the degradation of lakes, wetlands, and vegetation some of the wildlife can be affected where some species recover soon from the temporary deviation while some takes longer. Deteriorating landscape quality such as increased soil erosion can lead to an enduring loss of biological productivity (see Table 1.2). Increasing understanding of the social and ecological damages of climate change can exacerbate tensions between riparian states.

Table 1.2: Social-ecological impacts of climate variability and change as well as water flow variability

	Flood	Drought	Low rainfall
Social Impact	<ul style="list-style-type: none"> - Affects agriculture, fisheries, industries, energy, water quality, infrastructure, navigation & trade - Water supply more than demand - Affects human lives, health and wellbeing, damage to property - Affects biodiversity; - Catalyses cooperation & conflict at multiple levels, increases migration 	<ul style="list-style-type: none"> - Affects agriculture, fisheries, industries, energy (e.g. hydropower), water quality, navigation & trade - Water demand more than supply - Affects human lives, livelihoods, health & development - Affects wildlife, habitats, plant species; - Catalyses conflicts between water users 	<ul style="list-style-type: none"> - Reduces water levels in reservoirs and affects irrigation - Affects rainfed agriculture - Affects livelihoods and health - Affects plants, wildlife and ecosystems - Catalyses conflicts between water users
Ecological impact	<p>Positive Impacts</p> <ul style="list-style-type: none"> - Positive impacts on aquatic biodiversity; Sustaining biodiversity and key ecosystem functions, transporting sediment and nutrients - Linking the river with the surrounding land and connectivity between aquatic habitats - Recharging groundwater systems & filling wetlands <p>Negative Impacts</p> <ul style="list-style-type: none"> - Removes vegetation, erosion & transfer of sediment & nutrients, disperses weeds, degrades freshwater habitats, hill-slopes, rivers & floodplains and wetlands - Increases channel size, dams, levee bank & catchment - Changes in freshwater flow - Releases pollutants 	<ul style="list-style-type: none"> - Threatens freshwater & marine ecosystem, air quality, water quality - Forest & range fires - Degradation of soil and landscape quality - Loss of biodiversity and biological productivity 	<ul style="list-style-type: none"> - Increases water temperatures - Increased wildfire risk - Stresses aquatic life

Sources: Wolf, Yoffe, and Giordano 2003; Agardy et al. 2005; MEA 2005; WRI 2005; Thornton 2006; UNESCO 2006; UNDP 2006; Luzi 2007; Warner 2008; Sanchez and Roberts 2014; UN-WWAP 2015

1.2.3 Climate Change Related Challenges

Global climate change is leading to higher temperatures causing more evaporation, glacier melt, changes in the flow of rivers, changes in rainfall patterns and sea level rise. Climate change can have positive as well as negative impacts (Bates, Kundzewicz and Wu 2008). However, in the long-term positive impacts might be outnumbered by the negative impacts which can lead to the destabilization of entire climatic system. Even for those who argue in terms of winners and losers, the harmful impacts of climate change on the global freshwater system far exceed the benefits globally (Bates, Kundzewicz, and Wu 2008). The 4th Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) have highlighted both the positive as well as negative impacts of human-induced climate change (Bates et al. 2008). This was also summarised in the recent 5th Assessment Report of the IPCC (Team et al. 2014). According to different estimates of the IPCC, approximately 20% of the world's population will be subject to increased flooding by 2080 while people living in severely stressed river basins could rise from 1.4 - 1.6 billion people in 1995 to 4.3 - 6.9 billion by 2050 (Larigauderie and Mooney 2010). Different climate change models for the 21st century forecast a rise in rainfall in high altitude regions and some parts of the tropics while low precipitation may occur in mid-latitude and sub-tropical regions (Bates, Kundzewicz, and Wu 2008). In addition, these models also predict a change in seasonality of precipitation in many regions i.e. more rainfall in winter and low rainfall in summer which may increase the risk of drought and flood (Jiménez-Cisneros et al. 2014).

1.3 THEORETICAL GAPS IN TRANSBOUNDARY WATER GOVERNANCE LITERATURE

Surface and ground water (or their catchment areas) that crosses international borders are referred to as transboundary waters (Elhance 1999: 3) while their management and regulation is referred to as transboundary water governance (Orme et al. 2015). The dependence on transboundary waters by the upstream and downstream states make their governance inherently political and contested (Duratovic 2016; Zeitoun 2015; Zeitoun and Warner 2006). Although transboundary water is often seen as a source of conflict, existing studies argue that it can be a basis of cooperation among countries (see Biswas 2011; Wouters 2013; Bhaduri et al. 2011; Morris and de Loë 2016; Jager 2016; Neal et al. 2016; Guo et al. 2016; Paula Hanasz 2017), which will serve as a source for larger socio-economic development and will hence benefit all the parties (Catafago 2005). There is a documented evidence of Senegal River Basin, where the participating countries have not only seen increase in cooperation, leading to overcoming the existing agricultural challenges but have also achieved growth in socio-economic development (Kipping 2009; Vick 2006).

Freshwater resources are finite and subject to political and national boundaries and jurisdictional issues (Griffiths and Lambert 2013). Therefore, its distribution, ownership and uses are also highly contested (Kehl 2017) and sometimes become a source of conflict which are driven by factors of both temporary and permanent water scarcity (UN Water 2007), differences in international goals (Cosgrove and Loucks 2015a), complex social and historical contexts (Levy and Sidel 2011;

Mollinga 2003), misinterpretation of data (Damkjaer and Taylor 2017; Döll et al. 2016), asymmetric power relations between riparian states (Warner and Zawahri 2012; Zeitoun and Warner 2006), lack of cooperation among States and disputes over particular projects (Hanasz 2017; Levy and Sidel 2011). Moreover, the uncertain impacts of climate change make transboundary water governance more complicated and may enhance competition among water scarce states and societies (Cosgrove and Loucks 2015a; Mgquba and Majozi 2018). The scarcity, depletion, reduced supply, increased demand, as well as unequal distribution of freshwater resources may affect the very existence of states and may translate into aggressive tendencies, power and dominance by many countries (Brochmann and Gleditsch 2012; Damkjaer and Taylor 2017). Transboundary water governance is a continuing political process which involves a multitude of actors, institutions and drivers (Luzi 2007; Paula Hanasz 2017) which is connected to multiple levels of governance (Gupta and Pahl-Wostl 2013a; Warner and Zeitoun 2008). Therefore, the occurrences of conflict and cooperation at one level may significantly affect the situations for conflict and cooperation at another level (Warner and Zeitoun 2008). The politics of scaling also influences the choice of deciding how and at what level water should be governed (Gupta and Pahl-Wostl 2013a).

Transboundary water governance literature rarely takes these multilevel complex linkages into account and mainly focuses on power relations at the transboundary level among sovereign states. Taking into account the importance of multilevel water governance institutions can potentially influence power politics not only at the formal level of interstate cooperation, but also among actors at multiple level of governance. For win-win outcomes, institutional frameworks can potentially reduce the influence of power politics over freshwater-related policies and decisions. Since 805 AD more than 3,000 agreements (concerning navigational, boundary delineation, or fisheries related matters) have been recorded (in Atlas of international freshwater agreements) in contrast to few conflictual events (Wolf 2002). These agreements clearly indicate that transboundary river basins are sources of cooperation rather than conflict. However, conflict still exists in some transboundary river basins despite governance institutions. This shows that institutions in these basins are struggling to address current and potential challenges. This may be due to imbalanced power relationships among states and societies which influence the performance of governance institutions in different river basins but may also be triggered when societies pass ecological tipping points.

According to Hydro Hegemony (HH) scholarship, conflict exists alongside cooperation but with different intensities, and the role of power shapes and influences water governance institutions with pre-determined outcomes (Zeitoun and Warner 2006). Institutional performance varies from region to region, country to country and from one geographic level to another (Leeds 2009; Rodríguez-Pose 2013). Neo-institutionalists believe that power patterns also vary from issue to issue and that there is always an opportunity to create equitable and efficient transboundary water governance institutions (Jacobs 2012; Warner et al. 2017; Hassenforder and Barone 2018). Once effective institutions are created, they can potentially shape and curb power (Brady et al. 2016). Transboundary water challenges in the Global South are rapidly increasing due to rapid economic growth externalising the impacts on the environment and relatively poor water institutions and governance practices and with worldwide changes in social, political, environmental and economic systems (Friend and Thinphanga 2018; Saleth and

Dinar 2000). The scholarly literature suggests that an analytical transboundary water governance framework is necessary to address the challenges of water quality degradation and quantity reduction as well as water politicisation and securitisation.

Nevertheless, there are four key gaps in scholarly literature regarding the administration of transboundary river basins. First, transboundary water governance (TWG) literature rarely combines the role of institutions in dealing with HH at multiple geographic levels. Second, TWG literature scarcely links international relations (IR) scholarship with multilevel governance scholarship promoted by European Union scholars; I argue that an understanding of basin politics requires examining both flow and administration related issues at multiple levels of governance. This is because inequitable water distribution and biased decisions made at one geographic level may influence the social and environmental outcomes at another geographic level. Third, TWG literature insufficiently highlights the role of water outside the basin (e.g. rainwater, snow and green-water), the ecosystem services of water, and non-water related issues and actors in transboundary water research and policies. There are various non-water related actors, factors and driving forces that influence water-related policies and decision-making. Their role requires analysis in sustainable and effective freshwater resources governance, especially in the context of the Anthropocene – where the ‘great acceleration’ in demand for resources will have to make us reconsider how we use the shrinking ecospace that we have (Gupta 2016a). Fourth, TWG literature scarcely focuses on including the inclusive development approach of international development studies which prioritises inequality and focuses on socio-relational and ecological aspects. This thesis addresses these gaps through a conceptual framework linking the HH scholarship of the transboundary freshwater governance literature with institutional approaches and with theories on multilevel governance. In doing so it addresses issues of power, jurisdiction, coordination, principles and instruments and promotes inclusive and sustainable development.

1.4 MAIN RESEARCH QUESTION AND SUB-QUESTIONS

The four key research gaps that are discussed above lead to the formulation of one overarching question and four sub-questions.

1.4.1 Main Research Question

How can regional hydro-politics and institutions be transformed at multiple levels of governance through inclusive development objectives and incorporate the relationships with non-water sectors in addressing issues of water quality, quantity and climate change?

1.4.2 Sub-research Questions

The following sub-questions which are linked to the above knowledge gaps will be further explored with special reference to the Kabul River that flows through Afghanistan and Pakistan. These research questions are briefly elaborated below.

a. How do power politics and institutions influence water governance in transboundary river basins at multiple geographic levels?

This question positions the foundation of this thesis. Through the literature review on the evolution of multilevel transboundary water governance, it explores the intrinsic relationship between power politics and multilevel freshwater governance institutions in transboundary river basins. The literature discusses that sharing transboundary water resources are new issues in international relations, and if harmony is to be established within imbalanced power relations, efforts have to be made to resolve historical and existing conflict and promote genuine cooperation over water at multiple geographic levels. In addition, geography, exploitation potential and the structural power of states in their relations inter se occupies significance in international politics where the geo-strategic position of one country becomes important for the other.

b. How can the concept of biodiversity and ESS be incorporated in a framework to analyse the effectiveness of institutions, and the role of power, in governing transboundary water resources?

This question helps analyse how the concepts of biodiversity and ecosystem services can be taken into account to assess relevant institutions and the role of power in order to understand transboundary water governance and enhance cooperation. It explains that the inclusion of social and ecological aspects within the existing institutional frameworks can inform the transboundary water cooperation narrative for human wellbeing. Additionally, it also assesses the consequences of ecosystem change as there is a dynamic interaction between ecosystems and human wellbeing including the drivers of these changes for better governance, understanding (unequal) distribution of benefits from ESS across different population groups, and managing risks and opportunities and quantifying the ESS for better communication with policymakers.

c. Which principles & instruments address the causes/drivers of freshwater problems in transboundary river basins at multiple geographic levels?

This question is responded by using the results from the previous question regarding the evolution of transboundary water governance institutions to examine the patterns of principle and instruments inclusion and their role in achieving inclusive and sustainable development. This question allows the analysis of the different leading features of each governance framework. By analysing the content of numerous policies, laws and acts, I show which principles and instruments are included and excluded within a particular framework, how these principles and instruments address the challenges of freshwater systems, and how they relate to the goals of inclusive and sustainable development.

d. How does legal pluralism affect transboundary water cooperation?

This question highlights the impacts of plural legal systems in a transboundary river basin. It confers that different actors can create diverse rules which can have conflicting inferences, and costs for the same populations and the resources upon which they rely. This concept is fundamentally employed

to understand the dynamics of pluralism by examining: (a) the disintegration of the legal system; and (b) the concurrence of multiple rules in a single jurisdiction.

1.5 FOCUS AND LIMITS

1.5.1 International Development Studies Focus

The focus of this thesis moves from a broad framework of International Development Studies (IDS), angled through a lens of sustainable development, explored through inclusive development and then finally focuses on an institutional analysis within this established context. Emerging and evolving as a field of study seeking to bring desirable change to society with a traditional focus on economic growth (Valters 2014), IDS addresses the multi-scalar and institutional contexts in which poverty as well as improved human well-being occur. Sustainable development approaches have enriched traditional IDS and have arguably become the dominant development discourse in the arena of international politics (Jacobs 2002). Recognising three important ‘pillars’ – social, ecological and economic, sustainable development aims to provide solutions to global ecological and development problems (Hopwood et al. 2005; Roberts 2007) for current and future generations in both the developing and developed countries (Lewis and Wiser 2005; Montaldo 2013).

The focus on inclusive development draws on sustainable development and sharpens it further with an emphasis on social inclusiveness (i.e., to enhance the well-being of people, communities and states) (Gough and McGregor 2007); ecological inclusiveness (e.g., to know that natural resources are finite and ecosystems need to be maintained); and political geography (for example, to protect socio-ecological goals and address power politics) (Mosse 2010) that can lead to the demonstration of relational inclusiveness (Bos and Gupta 2016; Rauniyar and Kanbur 2010). It refers to, but is not limited to, development and social wellbeing coupled with equal opportunities (Gupta et al. 2015; Vella 2014), and argues for transparency and accountability and cooperation between a variety of participants including government, private sector, and civil society. Importantly, it focuses less on growth and more on shared wellbeing (Bos and Gupta 2016; Gupta et al. 2015). Finally, it recognises that the well-being of all people, particularly the poor, is closely related to the protection and conservation of ecosystem services (MEA 2005; Hayat and Gupta 2016). By analysing the various layers and aspects of the institutional setting in which transboundary water governance takes place, this thesis aims to show what is possible in terms of generating change toward improved inclusive development.

1.6 LIMITS OF THE THESIS

There are some limitations to this thesis. As a scholar of International Development Studies, I have pursued a multi-disciplinary approach which is in line with the spirit of the field. However, multi-disciplinarity can also have its challenges. For instance, there is an important International Relations component to shaping this dissertation, but my own background and expertise is limited. I have tried to draw on and appropriately use the most important approaches and concepts from IR for this

thesis, but I recognise that it may be limited in analytical depth. Likewise, it is in the nature of a multi-scalar analysis that broad strokes are drawn in order to make links between scales and levels visible. However, this requires another trade-off in terms of the depth that can be reached in describing and analysing the specifics of the case study. The attempt to analyse ecosystem services was limited by the limited knowledge in the field and access to needed resources. In terms of the real-world, continuing conflicts and tensions in the case study area created a range of limits to the eventual claims and conclusions that this thesis makes. Specifically, with the withdrawal of US and NATO forces from Afghanistan, the (so-called) Taliban, ISIS, or other extremists and terrorists' groups have the potential to become active in such a way that could lead to a new proxy war over shared water resources between the two countries. This new proxy war can potentially deteriorate the already tense relationships between the governments and peoples of both countries. The movement of people across the border, bilateral trade, and visa policies and have been interrupted already. The Government of Pakistan had decided to send back the three million registered as well as all other unregistered Afghan refugees (since the 1979 Soviet–Afghan War and US invasion of Afghanistan in 2001) by December 2018. As this has been taking place during the time of writing, I have not only had limited access to relevant data, but there is uncertainty in the region which may impact the predictive quality of this thesis.

1.7 STRUCTURE OF THE THESIS

Following this introduction, Chapter 2 furnishes the research methodology and the theoretical framework. In Chapter 3, I elaborate key realist and institutional approaches of transboundary water governance to establish the theoretical foundation of this thesis. Chapter 4 explores how addressing transboundary water issues can give us a better understanding of the causes of water challenges in the context of updated knowledge about the role of the ecosystem services of water. Chapter 5 examines the five key global institutions related to water and how they relate to inclusive development. Chapter 6 links the theoretical analysis of transboundary water issues with the empirical data on the Kabul River Basin (KRB). Chapters 7 and 8 describe and analyse multilevel freshwater governance in Afghanistan and Pakistan, respectively. Chapter 9 combines the transboundary, national, provincial, and local levels of the KRB case and compares each level with the key elements of the UN Watercourses Convention on equitable and efficient water sharing. Finally, Chapter 10 concludes the thesis by answering the research question and reflecting on the implications of the findings.