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The Kabul River

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7

ANALYSIS OF WATER GOVERNANCE IN AFGHANISTAN

7.1 INTRODUCTION

This chapter describes and analyses multilevel freshwater governance in Afghanistan and aims to answer the following questions: (1) How are the various characteristics including ESS and drivers of freshwater problems taken into account at multiple geographic levels in Afghanistan? (2) How have freshwater governance frameworks evolved at multiple geographic levels in Afghanistan? (3) Which governance instruments address the drivers of freshwater problems at multiple geographic levels in Afghanistan? (4) How does legal pluralism occur at multiple geographic levels in Afghanistan? (5) How do power and institutions influence freshwater governance frameworks at multiple geographic levels in Afghanistan?

This chapter uses the methodology in Chapter 2 to answer these questions, and continues as follows. First, this chapter describes the political organisation of water sharing within Afghanistan (7.2), various ESS (7.3), and drivers of freshwater problems (7.4) at multiple geographic levels in Afghanistan. Second, it discusses the evolution of freshwater governance (7.5) in Afghanistan. Third, it discusses goals, principles and instruments (7.6). Fourth, it conducts an analysis based on legal pluralism (7.7), and explores the relationship between governance instruments and drivers and their contribution in achieving inclusive and sustainable development (7.8). At the end, this chapter draws inferences (see 7.9) about the interplay of power and institutions in influencing freshwater sharing within Afghanistan.

7.2 THE CONTEXT OF WATER GOVERNANCE IN AFGHANISTAN

The current population of Afghanistan is more than 31 million which is expected to reach approximately 56 million by 2050 (Yıldız 2015). This 80% increase in population will put severe stress on already stressed water resources. Some studies (see Aich et al. 2017; Yıldız 2015) reveal that the precipitation patterns will change with global climatic changes and variability. The impacts of changing climate and weather variability will also affect snowfall in higher elevations affecting water flows in rivers. Being one of the world's poorest countries and with an economy largely based on subsistence agriculture (Yıldız 2015), Afghanistan will not be able to cope with such challenges. Farmers in the country are greatly relying on fresh surface and groundwater resources for irrigation and watering their livestock due to the highly arid climate (Campbell 2015). Glacial and snow melt are the primary sources for feeding seasonal streams, rivers, and aquifers. These sources of freshwater provide drinking water mainly to cities (Mack 2010; Zaryab et al. 2017). Due to the regular water supply to cities people in rural villages were once encouraged during the drought period from 1999 to 2005 to move to the larger cities and abandon their land (Campbell 2015; Yıldız 2015). These abandoned areas which were hit by severe droughts can still be found throughout the country (Campbell 2015).

Afghanistan has historical conflicts with its neighbours over the flow of water due to its land-locked status (Ahmadzai and McKinna 2018; Gadgil 2012; Salahuddin 2010). Due to its geographic location, the mountain snow runoff passes through Afghanistan into its neighbouring countries, Iran,

Pakistan, and other Central Asian States. In the past, Afghanistan had built various water reservoirs to store its surplus water but most of those reservoirs were damaged during the four-decades long conflict (Zaryab et al. 2017). Today hardly 30-35% of the freshwater stays in Afghanistan due to lack of water infrastructure (Gadgil 2012). These damaged reservoirs and other water infrastructure are challenging to repair and reconstruct in short time due to continuous militancy and unrest (Pervaz and Khan 2014; Ramachandran 2018). The estimated cost of repairing or re-constructing such nationwide projects is approximately USD 11 billion. Investors and donors hesitate to invest such a huge amount of money in projects where workers and project-related infrastructure are vulnerable to the attacks of militants and terrorists (Salahuddin 2010).

It is quite challenging to have reliable and regular supplies of clean and safe freshwater as well as freshwater-related data due to the longstanding conflict since the 1980s (Campbell 2015; Yıldız 2015). Besides damage to infrastructure including water monitoring devices, the unrest in Afghanistan has severely affected the abilities of water scientists and the institutional knowledge of Afghans (Yıldız 2015). In comparison to other neighbouring countries of South Asia, the water-related expertise of Afghanistan is inadequate (King and Sturtewagen 2010; Qureshi 2002; The World Bank 2018). Various Afghan scholars particularly trained water scientists are not much aware of global technological developments and are disconnected from the international scientific community (Campbell 2015; Mack 2010). The United States of America attacked Afghanistan in October 2001 (Campbell 2015) and by as early as 2002 the US and NATO forces in partnership with concerned Afghan water experts started reconstructing water-related infrastructure and important civic institutions (Perry 2015; Qureshi 2002). This has resulted in steadily building scientific knowledge, the institutional capacity of the NGOs and Afghan water and other related ministries, as well as understanding of the water-related needs of the country (Yıldız 2015).

7.3 ECOSYSTEM SERVICES OF FRESHWATER IN AFGHANISTAN

The natural resources of Afghanistan such as water, forests and minerals are a key source for the country's peaceful and prosperous future (Ahmadzai and McKinna 2018). A large percentage of the country's population (around 70-80%) directly relies on artisanal excavation, animal husbandry, and agriculture for their livelihoods (Sharifi et al. 2016). Afghanistan must harness these assets for job and revenue generation in order to improve its place on the Human Development Index and to supply basic services to its citizens. The rural Afghan population uses freshwater ecosystems for their livelihoods. The deterioration of these natural ecosystems due to variability in freshwater flow or degradation in quality may negatively affect people (Saba 2001). Following are the four types of ESS provided by freshwater in Afghanistan (see Table 7.1).

7.3.1 Freshwater Resources in Afghanistan

Afghanistan has a series of snow covered mountains including Baba, Wakhan, and Hindu Kush which makes it rich in terms of freshwater resources despite the fact that it is located in an arid zone (Shroder and Ahmadzai 2016; Yıldız 2015). Among the three mountain ranges Hindu Kush is

located at an elevation of 2000 meters and hosts approximately 80% of Afghanistan's freshwater resources. The Hindu Kush mountains function as natural storage for Afghanistan which deliver permanent water flow to major rivers by snow melt round the year (Qureshi 2002).

Afghanistan is surrounded by large rivers, for instance the Amu Darya Basin is situated in the North while in the East it is bounded by the Indus River (Ahmad and Wasiq 2004; King and Sturtewagen 2010). Afghanistan can be divided into four main basins based on the watershed units as well as on the morphological and hydrological systems (Qureshi 2002). Approximately 75 Billion Cubic Meters (BCM) of potential water resources exist in Afghanistan in various forms where the amount of groundwater is about 20 BCM and surfacewater is 55 BCM (Ahmad and Wasiq 2004; Qureshi 2002). Approximately 20 BCM of freshwater annually is consumed by the agricultural sector which is roughly equal to 99% of all freshwater used. In addition, approximately 3 BCM of the groundwater is extracted each year (Ahmad and Wasiq 2004). It is estimated that out of the total annual water consumption in Afghanistan, approximately 9% comes from the groundwater aquifers, 7% from the natural springs, and roughly 85% from rivers and streams (Angelakis et al. 2016; Qureshi 2002).

Approximately 2500 cubic meters of freshwater per capita is available in Afghanistan which is comparatively the highest in the region. For example, per capita water availability in Iran is 1400 cubic meters while Pakistan's per capita water availability is less than 1200 cubic meters (ibid) (Qureshi 2002). The freshwater resources in Afghanistan is projected to be mainly under-utilised (Qureshi 2002; The World Bank 2014; USAID 2002). However, it is not clearly known how much of the underused water resources can be retrieved to avoid damage to ecosystems and people.

7.3.2 Freshwater Biodiversity in Afghanistan

Seven of eight exclusive biogeographical areas of Afghanistan, belong to the Palaearctic Empire (Palka 2001). The Indi-Malayan region consists of a very small area in the lower Kabul River area (UNEP 2008). According to a recent classification, the country can be divided into 15 smaller ecoregions, four of which are considered critical / vulnerable, eight are vulnerable and only two are relatively stable and intact (Khan 2006). The species composition of all regions was significantly influenced by fuelwood collection, overgrazing, and exploitation by large herbivorous animals (Government of Afghanistan 2014). Deciduous and evergreen forests can be found in the eastern monsoon part of the country and once accounted for approximately 5% of the land area (Akhtar 2017). Some studies suggest that only 5% of these original forests are left (Carberry and Faizy 2013; Government of Afghanistan 2014). Pistachios and juniper once accounted for about 38% of the territory of Afghanistan (Government of Afghanistan 2014; NEPA-Afghanistan 2008). It is also known that the country was one of the most significant centres for the origin and development of food crops (UNEP 2008) such as wheat and other crop varieties (Government of Afghanistan 2014). In Afghanistan there are about nine indigenous breeds of sheep, eight breeds of cats and seven of goats (Thomson et al. 2005).

7.3.3 Supporting Services

There is limited literature on the supporting services of nutrient flows and soil fertility. However, there is some information on biodiversity including habitat availability and genetic diversity, ensure the functioning of all other ecosystem services. The Government of Afghanistan (2014) highlighted the importance of biodiversity in freshwater, in particular Koh-e Baba for the provision of ESS in the region. The country has a large number of breeding and migratory birds and is home to several species of plants and animals, such as wolves, foxes, wild cats, rabbits, deer, bats and many other birds. Afghanistan has a considerable genetic diversity of wild relatives of wheat and other plants that can provide genes for disease resistance (ibid). These different ESS are of particular importance in predominantly agricultural areas.

7.3.4 Provisioning Services

Agricultural activities in Afghanistan highly depend on freshwater from precipitation, ice, and melting snow (NEPA-Afghanistan 2008). Similarly, production of different crops greatly vary from year to year depending on rainfall and other weather conditions. The Hindukush mountain is situated at an altitude of more than 2000 meters and stores about 80% of Afghanistan's freshwater resources (Ali and Shaoliang 2013; The World Bank 2018). The mountains act as natural reservoirs and sources of water, where snow accumulates in the winter, snow melts and rain falls in the spring, and frozen water emerges from the glaciers in the summer to maintain the water flow in rivers (Hanasz 2011b). The large river basins of Afghanistan such as Amu Darya, Helmand and Kabul offer the greatest potential for irrigated agriculture and hydropower (King and Sturtewagen 2010). It is important to preserve the natural functions of these river basins of future generations and for prosperity of the land (Ahmadzai and McKinna 2018). The water cycle can be affected by climate change and land degradation, which can have serious consequences for communities living in the downstream areas (Hanasz 2011b; Kakakhel 2018; Vick 2014b). Soil erosion and forest degradation are largely caused by overgrazing which hinder forest regeneration (NEPA-Afghanistan 2008). Farmers note that changes in vegetation and productivity, including changes in weather patterns such as rain and snow, force them to shift grazing from traditional areas to higher areas (Savage et al. 2009). As a result, these practices increase the pressure on alpine ecosystems where large areas of vegetation have been converted into grazing-resistant cushion shrub lands (NEPA-Afghanistan 2008). In addition, increased cross-border cooperation with neighbouring countries is needed to ensure that water system infrastructure development does not harm local communities in Afghanistan or neighbouring countries (Hanasz 2011b; Mashal 2012; Nafees et al. 2016; Ramachandran 2018).

7.3.5 Regulating Services

It is estimated that approximately 16% of Afghanistan's land mass is affected by human-made activities. Afghanistan is one of the most desertified areas in the world (75% of the country is vulnerable to desertification) (NEPA-Afghanistan 2008; Savage et al. 2009). The topographic,

geological and climatic conditions of the country escalate the susceptibility to soil erosion. However, growing on steep slopes and unsustainable use of pastures can lead to a significant deterioration of rangelands (Government of Afghanistan, 2014; NEPA-Afghanistan 2008). Agriculture in rainfed zones is particularly detrimental to soil preservation, but is not practiced due to the low availability of irrigated land (Rao et al. 2016). Freshwater can potentially preserve the natural vegetation on the slopes, decrease soil erosion and enhance the productivity of the land that provides the key livelihood source (Government of Afghanistan, 2014; Rao et al., 2016). Freshwater can potentially preserve natural vegetation on the slopes, reduce soil erosion and increase land productivity, which enables livelihoods (The Government of Afghanistan, 2014).

Floods and landslides can be detrimental to mountains and valleys, especially in spring and summer, when ice-covered glacial lakes and snowy lakes start melting leading to devastating floods (Savage et al. 2009; The World Bank 2017). Dust storms and frequent droughts can also cause substantial harm. Furthermore, earthquakes are very common as the country is in a high seismic zone (The World Bank 2017). The depletion of natural resources and rapid urbanization are key factors that increase Afghanistan's vulnerability to hazards (Savage et al. 2009; Tami 2013). Various socio-economic development elements such as unemployment, land tenure practices, and migration have enhanced the vulnerability of some segments of society where they are forced to live in disaster-prone locations (Cordesman 2010; Loschmann et al. 2015). The exclusive dependence on natural resources as part of daily life, and catastrophic events, puts great pressure on freshwater ecosystems (Savage et al. 2009). Competitive demands and unsustainable consumption have undermined the safety net that freshwater provides and reduces the resilience of communities (Government of Afghanistan 2014; Rasul and Sharma 2016; The World Bank 2016b). Pollination is another important and indirect regulatory service of freshwater and supports local incomes (Government of Afghanistan 2014).

7.3.6 Cultural Services

Afghanistan's various regions have substantial cultural value for diverse local communities. For example, it is believed that the snow line on Koh-e-Allah Mountain expresses the word 'Allah' and, therefore, has great cultural significance (The Government of Afghanistan 2014). Similarly, one of the hot springs provides recreational opportunities for the local communities apart from its direct use for consumption (Erfurt 2011). The local population reveals that there were many springs before the start of the existing long ongoing conflict (ibid). These areas still offer many opportunities for ecotourism, hiking, and skiing which can be of great benefit to local communities (The Government of Afghanistan 2014; UNAMA 2016). In mountain areas, there are a number of shrines that commemorate important events and represent important parts of the landscape that should be considered in future land use plans (The Government of Afghanistan 2014). Both formal and traditional institutions govern an unequal and insecure land ownership system in the country (Pfeiffer 2011; Khan 2015). Recently, the Government of Afghanistan has tried to initiate land reforms and modernize the land management system. Since 2011, there has been a new regime for the management of land rights in the form of the Afghan Land Authority, but these regulations are

still in the early stages (Saltmarshe 2011; The Government of Afghanistan 2014). Due to the continuous deterioration of the soil, the demand for fertile land is increasing (Shrestha 2007; Gaston and Dang 2015).

Table 7.1: Major ecosystem services provided by freshwater in Afghanistan

Kinds of Freshwater in Afghanistan	Supporting Services		
	Provisioning	Regulating	Cultural
	Availability of habitat and inherited variety confirm the functioning of all other services; freshwater biodiversity of Koh-e Baba supporting the provision of all ESS in the area; home to a large number of breeding and migratory birds; supporting diverse plant species, and wildlife such as wolves, fox, wild cats, rabbit, deer, bats, and numerous birds; genetic diversity of wild relatives of wheat and other flora provide genes of resilience and resistance to disease		
Rainbow water	Huge storage of water on Earth; habitat for birds and insects	Climate regulation, hydrological regulation	Aesthetic (inspiration for art), spiritual (rain Gods/ Gods of thunder), inspiring knowledge)
Blue surface and ground water	Natural storage facility; supporting the vibrant flow in rivers through snow accumulation in the winter, melting of snow and precipitation during spring, and discharge of frozen water from glaciers in summer; prevalent potential for agriculture and hydropower generation; maintaining watersheds for the future prosperity; freshwater in the KRB can enhance cross-border cooperation with neighbour countries	Freshwater in Afghanistan naturally increases susceptibility to the practices of soil erosion; rainfed farming is especially harmful to soil preservation; freshwater preserve the natural vegetation and prevent soil erosion which enhance the productivity; pollination is indirect regulating service which provides an alternative source of income for local communities	The snow line on the top of the Koh-e Allah spell out the word 'Allah' is of traditional importance; holy natural hot springs appealed many tourists before the war; provides occasions for trekking and backcountry skiing as well as ecotourism to local communities and tourists; many caves in the KRB on Afghanistan's side have earliest animal statues that locals visit; monuments in the KRB memorialise important events; a mix of formal and informal institutions in the KRB governs an variable and indeterminate land tenure system
Green water	Fodder, food, pastureland, herbs and shrubs	Vaporization (flowing downwind to later fall as precipitation); underground aquifer recharge	Forests and landscapes for tourism, spiritual needs and education
Grey water	Rice and vegetable production, fodder crops, energy production, mining,	Climate and water regulation, vaporization flowing downwind to later fall as precipitation	Educational services regarding its potential uses in agriculture
Black water	Animal fodder, insects and worms as birds' food	Spreads disease unless managed	Educational services regarding its negative effects
White frozen water/glaciers/frozen polar regions	Habitat for markhor and snow leopard, storage of water	Albedo effect	Preserving data for humans, information about CO ₂ in the past, preserving life forms frozen in the past

Source: Modified from the Government of Afghanistan 2014

7.4 DRIVERS OF FRESHWATER PROBLEMS AT NATIONAL & SUB-NATIONAL LEVEL IN AFGHANISTAN

There are various drivers of freshwater problems at national and sub-national levels in Afghanistan. In this section I discuss national and sub-national level direct (see 7.3.1) and indirect (7.3.2) drivers which also include drivers recognized through literature review, case studies, as well as through literature that is not case specific.

7.4.1 Direct Drivers

The four direct drivers of freshwater problems in Afghanistan are (see Table 7.2): (a) agricultural development including commercial agricultural practices and animal husbandry, the extractive sector and water use in energy;⁴⁵ (b) industry including services and infrastructure;⁴⁶ (c) municipal supply of clean water and improved sanitation services including water usage at household level i.e., drinking water, water for sanitation and hygiene as well as subsistence agriculture for survival;⁴⁷ (d) demographic shifts including migration, population growth, increase in population density and urbanisation⁴⁸. The four decades long war has destroyed water infrastructure and the agriculture sector which had employed more than 80% of the population. Moreover, arrival of more than three million registered and almost the same number of unregistered Afghan refugees from Iran and Pakistan, coupled with unsustainable population growth, can put enormous pressure on available freshwater resources in the KRB where the population density is comparatively high than other river basins in the region. Increasing demand for improved sanitation practices and drinking water particularly in urban areas as well as water uses in subsistence agriculture and localised mining industry is expected to put significant stress on available freshwater resources.

7.4.2 Indirect Drivers

The key indirect drivers of freshwater problems are (see Table 7.2): (1) political dynamics among administrative units within Afghanistan;⁴⁹ (2) culture and ethnic elements including approaches concerning access and allocation, behaviour towards wasteful use of resources, etc.;⁵⁰ (3) the non-water-related policies on food security, agriculture, land true and use, as well as economic development;⁵¹ (4) economy i.e., economic growth;⁵² (5) poverty;⁵³ (6) technological advances including agriculture intensification;⁵⁴ (7) international trade including ‘globalisation’ or trade in

⁴⁵ Interviewee 53, 57, 65.

⁴⁶ Interviewee 42.

⁴⁷ Interviewee 42, 66, 70.

⁴⁸ Interviewee 41, 42, 43, 46.

⁴⁹ Interviewee 43.

⁵⁰ Interviewee 43, 47, 57, 58, 67.

⁵¹ Interviewee 47, 52.

⁵² Interviewee 41.

⁵³ Interviewee 47, 70.

⁵⁴ Interviewee 51, 52, 64, 70.

virtual water,⁵⁵ and (8) natural change and variability in weather, including droughts, floods, landslides, tectonic movement.⁵⁶ In Afghanistan privately owned water pumping stations control the flow and provide clean drinking water to approximately 80% of the population. This may be also due to lack of water-carrying infrastructure due to the four-decade long ongoing conflict. In addition, security challenges are also a disincentive to building infrastructure. Massive flooding caused by river overflow and glacial lake outbursts are in the western region and central belt, while drought in the southwest and northern regions have put farmers out of work and degraded water quality. In addition, earthquakes and landslides are also of concern in the northern regions.

Table 7.2: Drivers of freshwater problem in Afghanistan

Direct Drivers	Key References
Agriculture development (e.g., commercial agriculture practices including animal husbandry, the extractive sector and water use in energy)	Interviewee 53,57, 65
Industry (including services and infrastructure)	Interviewee 42
Municipal water and sanitation services e.g., household uses (drinking water, sanitation and hygiene) and subsistence agriculture	Interviewee 42, 66, 70
Demographic shifts (i.e., migration, population growth, increase in population density, urbanisation, population growth)	Interviewee 41, 42, 43, 46
Indirect Drivers	
Political dynamics within states	Interviewee 43
Culture and ethnic elements (approaches concerning access and allocation, wasteful use of resources, etc.)	Interviewee 43, 47, 57, 58, 67
Non-water-related policies (food security, agriculture, land tenure and land use, as well as economic development)	Interviewee 47, 52
Economy (economic growth)	Interviewee 41
Poverty	Interviewee 47, 70
Technological advances (agriculture intensification)	Interviewee 51, 52, 64, 70
Global trade (e.g. 'globalisation' or trade in virtual water)	Interviewee 45, 59
Natural change and variability in weather, Droughts; Floods; Earthquakes; Landslides, tectonic movement.	Interviewee 56, 60, 63

7.5 EVOLUTION OF THE FRESHWATER & RELATED INSTITUTIONS IN AFGHANISTAN

7.5.1 Overview of Water Governance Institutions & Practices in Afghanistan

The institutional structure in Afghanistan has three diverse parts: customary tribal law, Sharia law, and state legal codes. Additionally, the legal system in Afghanistan is a combination of both informal and formal structures (Bassiouni and Rothenberg 2007; Christensen 2011; Hashimi 2017; Singh 2015; Strand et al. 2017; Wardak 2004). Customs, religion and state sectors define their own exclusive share of authority but also ally with other sectors (Barfield 2003). In various regions of the

⁵⁵ Interviewee 45, 59.

⁵⁶ Interviewee 56, 60, 63.

world, where state power has replaced all other authorities, in Afghanistan the power of each competitive part is diminished (Barfield 2008). At some point of time, customs and religious norms were dominant while on other occasions the state has effectively enforced its power (Barfield 2003). Each sector claims to be autonomous and to have exclusive legal authority in theory, but in practice none has ever been able to completely replace others (ibid). It has been observed that these systems continuously work side by side, and it is the nature of particular conflicts which will determine which system will be dominant in comparison to the others (Lau 2003). In this sense, the formal water governance structures will, from time to time, integrate principles from the informal sector, which is then applicable to both systems. Informal water rules are mostly verbal and non-written as these rules vary from region to region and even from community to community (Barfield 2003, 2008).

In Afghanistan, water is formally governed according to the Constitution, Civil Code, as well as Water Laws (Constitution 2004; UNAMA 2016) while informally water is governed as per the local customs and principles of Islamic law (ALEP 2011; Qureshi 2002). The past generation of customs, laws and policies in Afghanistan declares that freshwater in the rivers is ‘public property’ (Constitution 2004) and everybody has a legitimate right to consume it as long as it is not ‘contradicting to public wellbeing or special laws’ (ALEP 2011; UNAMA 2016). These principles of ‘water as a basic right’ and ‘public property’ were practiced informally for more than four decades and were eventually formally included into Afghanistan’s current water and environmental laws. These rights are further protected by various versions of the Constitution of the Islamic Republic of Afghanistan and are also being promoted by an Independent Human Rights Commission (Ginsburg and Huq 2014; UNAMA 2016). Historically, informal ‘water rights’ in Afghanistan go back to ancient settlements near Kandahar some 4500 years ago (Qureshi 2002), and to the customary practices of Mehergarh and Indus Valley Civilisations (see 7.5.2) in present day Pakistan. The current system of codified water rights in the form of land rights in Afghanistan started during the reign of Abdur Rahman (1880-1901) which can be best described as hybrid rights. Over the past four decades, parallel to informal practices, various formal water governance laws and policies were developed. The management and governance of water resources has also been integrated centrally into the Constitution and various other laws related to environment, mining, forests, pastures and agriculture (see Annex H). For the evolution of formal/informal multilevel water governance frameworks in Afghanistan along with included principles see Figure 7.1 which shows the accumulated inclusion of different categories of principles over different eras. Similarly Figure 7.2(a) presents the number of adopted principles for each category over time; Figure 7.2(b) explains the trends of different categories of principles over time; and Figure 7.2(c) presents the actual progress and regress of different categories of principles over time.

7.5.2 Water Governance before Common Era (BCE)

Early settlers (around 3000 BCE ago) in Afghanistan were linked to the Indus Valley Civilisation through trade and culture where Mundigak (an early city near Kandahar) was a colony of the Indus Valley Civilisation (Dupree 1977). The earlier inhabitants in Northern Afghanistan were Indo-Iranians (Shroder 2006). The strong linkages of Afghanistan with the Indus Valley civilisation were

further revealed when - Shortugai in Northern Afghanistan - an Indus Valley site was found on the Oxus River (Kenoyer 1998) (see 8.5.2 for water governance in ancient civilisations). In Afghanistan, water governance has traditionally been undertaken by community-based management structures with elected or, more often, selected water masters⁵⁷ (called Mirabs), who supervised construction and maintenance of the water infrastructure, implementation of rules and peaceful resolution of conflicts⁵⁸ (McCarthy and Mustafa 2014). Water allocation or rights to access water in Afghanistan is primarily linked with land ownership, the size of the land and the level of the contributions to the construction and maintenance of water infrastructures⁵⁹ (ALEP 2011; Qureshi 2002). Although, customary practices can offer an important foundation for shaping indigenous water governance, it is to be noted that customary structures are not always inclusive and are often subject to elite capture (Weinthal et al. 2014).

7.5.3 The Islamic Way of Water Governance

Water management in Islam represents cultural views on the relationship between water and people in various Islamic states which helped in the creation of the Sharia law (Hamid 2013). Understanding the Islamic principles of water governance is useful for obtaining information on existing freshwater governance practices and defining how the Islamic way of water management can be reformed (Faruqui et al. 2001). Water has played a prominent role in key religious teachings including those of the Hadith and Quran. This is due to the fact that the Islamic faith has emerged in the desert (Gilli 2004; Jamil and Haddad 1999).⁶⁰ The Quran stresses the significance of water in a frequently quoted verse that ‘We made every living thing from water’ (Holy Quran: 652). In the Quran, the word ‘water’ is repeated more than 60 times, with several references to other related words such as ‘rivers’, ‘the sea’, ‘fountains’, ‘springs’ and ‘rain’ (Haleem 1989: p. 34). The Quran pronounces that water is a gift from God and further declares that: ‘We may give life to a dead land, and give it for drink to cattle and many people that we have created’ (Holy Quran: 724). In addition to the obvious benefits for the preservation of life, water is of particular importance in Islam, as faith attaches importance to the cleanliness and central role of water for the cleansing services prior to praying (Faruqui et al. 2001). Because of their importance, Islamic sources require an equitable and efficient distribution of freshwater resources, and to accomplish this goal, water must be shared justifiably (ibid). The need for an equitable distribution of water is clarified in the verse of the Quran: ‘and inform them that the water is shared between them; every share of water shall be attended’ (Holy Quran: 1039).

A series of Hadith offers an additional perspective when affirming that ‘God denies his favour to people who deny others the use of water when they have excess water’ (Haleem, 1989). These declarations concerning irrigation indicate the need for unbiased circulation of wealth in society.

⁵⁷ Interviewee 41, 43, 44.

⁵⁸ Interviewee 68.

⁵⁹ Interviewee 56, 63, 70.

⁶⁰ The documented sayings and actions of the Prophet Muhammad (PBUH).

Faruqi explains that, ‘basically all hadith stresses on the provision of equity, and no exemption for those dealing with water’ (Faruqi et al., 2001: p. 2). One of the techniques to make sure that water is not monopolized is its position as a publicly owned resource. Public ownership of water is justified by the testimony of Prophet Muhammad in that ‘Muslims have a common share in three (things): grass, water and fire’ (Caponera, 2001: p.95). Hamed notes that ‘Muhammad treated monopoly or competition by deciding that ‘essential means, such as ‘grasslands, wildlife, forests, certain minerals and especially water should not be privately owned in their natural state’ (Hamed, 1993, p.154). In addition to these common principles of Sharia regarding water resources, the Quran and the Hadith provide clear instructions that polluting or exploiting water and other natural resources are strictly forbidden. Thus, Islam offers humankind the opportunity to sustainably consume natural resources by not harming others or the natural environment - in line with the Quranic verse, ‘make not mischief in the land’ (Holy Quran: 11).

The mechanism to protect the environment is the responsibility of Khalifah or the resource manager of the land (Abdelzaher et al. 2017). This concept is derived from Islamic philosophy and is founded on the notion that humans - as the greatest creation of God - are responsible to protect and preserve the earth's resources (Hassan et al. 2010). This interpretation is reinforced by the Quran's claim that ‘we made you rulers in the land after them, so that we might see how you act’ (Holy Quran: 435). The notion of Khalifah basically presents environmental ethics to protect the excessive use of water resources (Gada 2014). For example, in one of the hadith, the Prophet Muhammad restricted the water amount that could be utilised to water the plants to the depth of the ankle (Wilkinson, 1990: p. 61). This facility, which limits the irrigation water use to the amount necessary for sufficient soil moisture sets a clear example to avoid overexploitation of water resources (Faruqi et al. 2001). This hadith creates a general rule for Muslims to protect the environment through concrete actions. This general context of the water-human relationship is principally resilient as it is rooted in religion itself. Islam as a religion is more than a set of ethics to which followers must adhere.

7.5.4 Water Governance in the Colonia Era

During the 18th century, Afghanistan was under attack by the two super powers from two different directions.⁶¹ Britain was occupying the Indian subcontinent between 1757 and 1857, while Russia was expanding its control near Afghanistan's border by 1828.⁶² Britain's efforts during the 19th century to protect its Indian empire from Russia and colonise Afghanistan led to a number of Anglo-Afghan Wars (1838-1842, 1878-1980 and 1919-1921).⁶³ Britain's eyes were on capturing the Afghan territory between the Hindu Kush and the Indus Basin and on pushing back Russia (Fitzgerald and Gould 2009). Hence, in 1878 after the invasion, the British overthrew the king and formed a new British colony (Visalli 2013). The British created the Durand Line in 1893 to consolidate its gains, separate British India from Afghanistan, and divide the Pakhtun people (Kaura

⁶¹ Interviewee 47, 50, 55, 62.

⁶² Interviewee 41, 45.

⁶³ Interviewee 41, 57, 58, 59.

2017; Omrani 2009). Since then the province of Khyber Pakhtunkhwa (where the majority of Pakhtun people are settled) has been considered an integral part of Afghanistan (Hanauer and Chalk 2012). This created a deep hostility among the Pakhtun who survived, which still exists today (Hanauer and Chalk 2012; Omrani 2009). It is to be noted that neither Britain during the British Raj nor Pakistan after the independence ever attained full control of the northwest province which later became the source of Islamic radicalism that produced both Al-Qaida and the Taliban (Visalli 2013). This hostility has its origin in the drawing of the Durand Line⁶⁴ for water governance practices during the colonial era; see 8.5.4).

7.5.5 Water Governance in the Post-Colonial Era

Afghanistan's Constitution aims to achieve a "prosperous life and sound living environment" for all Afghans. The Constitution requires that "no law shall breach the beliefs and provisions of the holy religion of Islam" (Constitution 2004: Art. 3). It encourages governance of all natural resources including water, declaring that the "management, adequate utilization, and protection of public properties as well as natural resources shall be regulated by law" (Constitution 2009: Art. 9). It confirms that the government will take essential actions to "enhance forests as well as the living environment" (Constitution 2004: Art. 15) and the government will act, "within its financial means" to "design and implement effective programmes to develop agriculture and animal husbandry" (Constitution 2004: Art. 4). Agriculture is identified by the Constitution as an essential element to enhance the economic as well as socio-ecological means of improving the living conditions of herders, farmers, and other citizens (ibid).

Furthermore, Afghanistan's Civil Code claims to be the special source of appropriate legitimate authority for the entire country (ALEP 2011). It discusses that water from rivers and their tributaries are "public property" (Civil Code: Art. 2347). Each person has the legitimate right to consume water for irrigation of private lands including for irrigation of crops and trees, as long as the usage is not "contrary to public interests or special laws" (Civil Code: Arts. 2346-2347). However, the Civil Code is unable to explain which types of uses are opposed to public interests except perceiving that the "usage of water from public streams and its distribution shall be exercised with due observation of prevention of harm to public interests and proportionate to the lands that it is intended to be irrigated" (Civil Code: Art. 2349). Without legitimate rights, no one is allowed to build an irrigation canal or a watercourse (Civil Code: Art. 2353). In addition, if a person builds an irrigation canal on his own property, he has the legal right to use it in any way he wishes and so that no one can utilise it without the builder's prior permission (Civil Code: Art. 2348). The Afghan Civil Code is primarily based on one of the Sharia principles where the right to breathe fresh air is comparable with the right to freshwater.⁶⁵ Each individual has the right to drink water from any source, both from private or public sources.⁶⁶ For example, in case of a private water source the right to use water comes with

⁶⁴ Interviewee 69, 70.

⁶⁵ Interviewee 45, 46.

⁶⁶ Interviewee 61.

obligation not to harm the water source.⁶⁷ The Civil Code has a number of other indirect references to water rights regarding the obligation not to harm water sources and the need for reciprocity in case of shared water sources (Nijssen 2011).

Current water laws in Afghanistan maintain that the rights of water users, including the right of way to water resources, are understood in accordance with the ‘principles of Islamic jurisprudence’ (Water Law 2009: Arts. 1 and 8/8) as well as the ‘traditions and local customs’ of the Afghan people (Water Law 2009: Art. 1). However, as with water laws mentioned above, local customs are not adequately defined and differ from region to region and even from community to community.⁶⁸ Water distribution in rural Afghanistan among the local communities is in the hands of local ‘Mirab Bashis’ (local official) or ‘Mirabs’ whose verdicts are mostly valued.⁶⁹ Relying on the local customs for conflict resolution however is quite challenging as there is no unique set of customary principles which can be codified and applied in an identical manner (Barfield 2003; 2008). The system rather works more as a voting process than as a decision-making process (Barfield 2003: p.42). This flexibility permits conflicts to be fixed in a context specific way that is sensitive to local distresses (ibid).

The 2009 Afghanistan Water Law was implemented to enforce Article 9 of the Constitution (Constitution of 2004) through provisions that promote ‘the equitable distribution, conservation, and the efficient and sustainable use of water resources’ (Water Law 2009: Art. 1). The purpose of this law is to strengthen the economy and protect the rights of water users in accordance with the principles of Sharia and local customs (Water Law 2009: Art. 1). Similar to the Civil Code and Constitution, the 2009 water law stipulates that ‘water belongs to the public’ and the ‘people of Afghanistan’ (Water Law 2009: Art. 2 and 8/1). Water may be used in accordance with customary practices to meet the needs of consumption, income, agriculture, industry, public services, energy generation, navigation, shipping, fisheries and the environment (Water Law 2009: Art 6)

The 2009 Afghan Water Law - among many other uses - gives priority to use water for ‘drinking and livelihoods’ purposes (Water Law 2009: Art. 6).⁷⁰ As per the 2009 water law, the use of water shall be free of cost (Water Law 2009: Art. 7). However, service suppliers may charge fees for the storage, supply, diversion, transmission, treatment, operation, water supply maintenance, irrigation systems, and other related activities (Water Law 2009: Art. 7).

A private water supply company can disconnect users from the water tap if they do not pay the required fees or abuse the water supply (Water Law 2009: Art. 28). The government is committed to conserve and manage freshwater resource (Water Law 2009: Arts. 2 and 8).

⁶⁷ Interviewee 44, 47, 50, 51.

⁶⁸ Interviewee 50.

⁶⁹ Interviewee 53.

⁷⁰ Interviewee 46, 52, 59

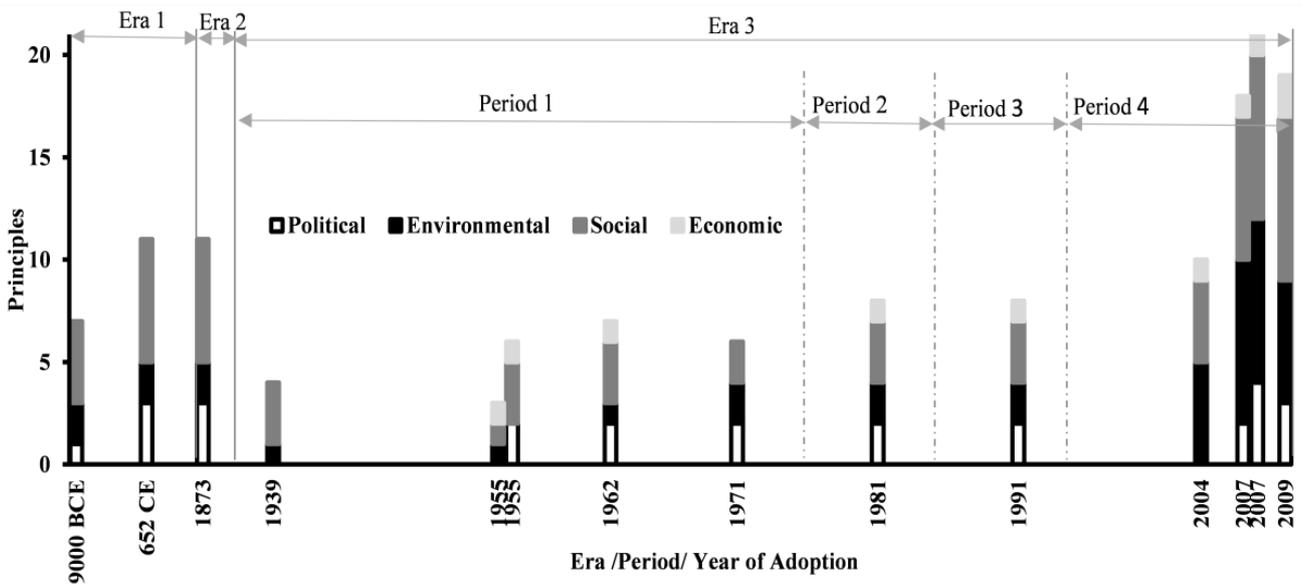


Figure 7.1: Evolution of water governance in Afghanistan over three eras

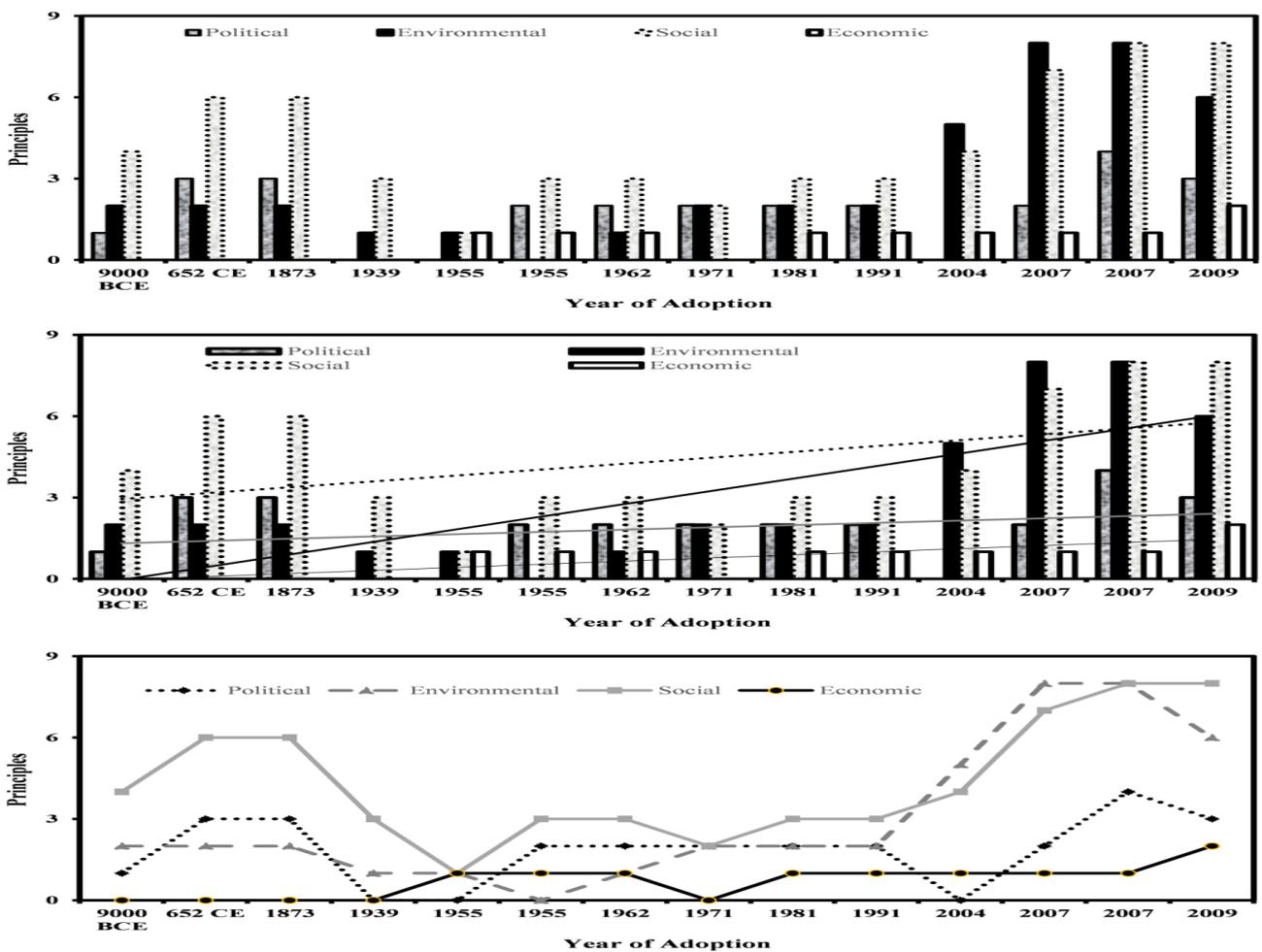


Figure 7.2: (a) Number of included principles (b) overall progress & (c) trend analysis

7.6 GOALS, PRINCIPLES AND INSTRUMENTS

This section assesses goals, principles and instruments in multilevel freshwater governance frameworks in Afghanistan to operationalize the fifth element of the conceptual framework (see 2.5). The analysis of principles is based on the content analysis, literature review and interview data of the national level water governance framework. In line with my conceptual framework, the key principles are discussed under three main categories of inclusive development: (a) political principles (see 5.3.1), (b) social-relational principles (see 5.3.2) and (c) ecological principles.

7.6.1 Goals of Freshwater Governance Framework at Multiple Level in Afghanistan

The Afghan water law aims to enforce Article 9 of The Constitution of Afghanistan. The Afghan water law aims for i) preservation, fair distribution, as well as the effective and justifiable utilization of water resources, ii) protecting the water user rights and making the national economy stronger as per the fundamental principles of Sharia as well as the local customs and traditions.

7.6.2 Governance Principles in Afghanistan's Multilevel Freshwater Governance Frameworks

As Table 7.3 shows, the legal framework consists of a number of laws and policies listed in row one. These include political principles which contain the warning about planned measures and emergency situations, information exchange, dispute resolution, and duty to cooperate; social-relational principles which comprise public involvement, the human right to clean water and improved sanitation, equitable and reasonable use, priority of water use, rights of women, youth and indigenous peoples, public awareness and education, intergenerational equity, poverty alleviation, capacity building; and ecological principles which consist of pollution prevention, monitoring, precautionary principle, ecosystem protection and preservation, water as a finite resource, EIA, and protected recharge and discharge zones. Table 7.3 also reveals the kinds of principles necessary for water management that are not included in Afghanistan's water law framework. The 2009 Water Law has replaced all previous water laws, although it is built on previous laws and provisions including the Water Law 1955, the 1962 Law Fixing the Price and Sale of Water, Afghan Water Law 1981, Afghan Water Law 1991, Constitution of Afghanistan (1931; 1964; 1977; 1980; 1987; 1992; 1994; 2004), Afghanistan Water Sector Strategies 2007, and other relevant policy processes and provisions. My analysis of these legal frameworks shows that the identified drivers through this research are not addressed by the principles in Afghan water laws. The latest Water Law 2009 is greatly influenced by the donors' agenda of considering water as an economic good and promotion of private companies for water provision that benefits the private sector including large multinational companies. Despite increased investment in agriculture by the EU in the agriculture and irrigation sectors for livelihood improvement (see 7.9), the agricultural yield has declined by two percent (European Union, 2019; Leao et al., 2018).

Table 7.3: Principles & instruments in Afghanistan's multilevel water governance frameworks

	Local Customs	Sharia Law	The 1873 Canal & Drainage Act	1939 Law regulating the sale of land under dams & rivers	The 1955 Commercial Code of Afghanistan	The 1955 Law of Ownership & Price of Water	The 1962 Law Fixing the Price & Sale of Water	The 1971 Law on Pasture & Grazing Land	The 1981 Afghan Water Law	The 1991 Afghan Water Law	The 2004 Constitution of Afghanistan	The 2007 Afghanistan Environmental Law	The 2007 Afghanistan Water Sector Strategies	The 2009 Afghanistan Water Law
Political Principles														
Information Exchange														
Warning of Emergency Situations														
Warning of Planned Measures														
Duty to Cooperate														
Conflict Resolution														
Limited Territorial Sovereignty/ Do Not Harm														
Environmental Principles														
Basin as the Unit of Management														
BATT														
Conjunctive Use														
EIA														
Invasive Species														
Monitoring														
Prevention of Pollution														
Preventive Principle														
Protected Areas for Water														
Protected Recharge and Discharge Zones														
Ecosystems Protection and Preservation														
Polluters Pay														
Water as a Finite Resource														
Social Principles														
Capacity Building														
Equitable & Reasonable Use														
Human Right to Water & Sanitation														
Intergenerational Equity														
Poverty Alleviation														
Prior Informed Consent														
Priority of Use														
Public Access to Information														
Public Awareness & Education														
Public Involvement														
Rights of Women, Youth, &														

and donors). Similarly, the existing regulatory and economic instruments in the form of licences, permits, fees and fines are not strong enough to change the behaviour of users especially the powerful actors and large businesses. The RBCs are unable to play any role on the transboundary level due to the absence of treaties; but could play a part if treaty negotiations should begin.

7.7 LEGAL PLURALISM ANALYSIS

It is important to note that before the formation of the Durand Line that divides the Pakhtun population on both sides—the entire KRB region (including tribal areas and the KP province of Pakistan) were part of Afghanistan, which means that the practices of Sharia and local customs for water management applies to both countries (see 8.7).

The evolution of freshwater governance frameworks in Afghanistan reflects that Afghanistan has three parallel governance systems that govern natural resources including water: the local customs, sharia law and the state legal codes (vertical between local customs and Sharia). However, the relationship between these laws is complicated (Barfield 2003). Local customs dominate in Afghanistan among the three governance systems.⁷¹ With regard to water and land rights, the civil code identifies the implication of local customs. It is prohibited as per the Constitution of Afghanistan to implement laws which contradict the basic principles of Islam.⁷² At the same time, the Constitution is quiet on local customs. Customary practices are allowed in Sharia if they do not contradict the basic values of Sharia (Senier 2006). Similarly, the non-water laws at the national level are also analysed (horizontal analysis), which also address some of the direct and indirect drivers.

An analysis of freshwater governance frameworks in Afghanistan reveals first, that there is the integration of some instruments from informal systems (e.g., local customs and Sharia Law) into formal governance structures (water and non-water laws). These informal rules (particularly customs) are mostly verbal, non-written and vary from region to region as well as from community to community. Second, at the national level, both water governance frameworks as well as non-water laws address the issues linked to sustainable water use.

Legal pluralism occurs when freshwater resources are governed through multiple laws, policies and strategies. Generally, Afghans believe that their customary practices are not opposing the basic values and standards of Sharia, however this is not always the case.⁷³ Indeed, various customary practices contradict both Islamic law as well as Afghan statutory law.⁷⁴ This inconsistency is not visible to many people because a religious figure, ‘the mullahs’ is most often included in the informal judicial system (e.g., Jirga and Panchayat) because of his religious affiliation and trust of

⁷¹ Interviewee 49

⁷² Interviewee 45, 52, 55

⁷³ Interviewee 43, 47, 52

⁷⁴ Interviewee 53, 61

the people.⁷⁵ With the inclusion of the mullah, people come to believe that the ruling complies with the basic principles of Sharia although the ruling of the Jirga opposes the basic values of Sharia (Brohi 2016).

Water governance frameworks contain instruments that contradict each other (type 2). For example, private ownership is forbidden in Sharia but in local customs it is a regular and accepted practice. Similarly, the Sharia instructs Islamic states to avoid pricing water or applying wastewater treatment or reuse methods. However, in local customs it is the other way round. Furthermore, priority of use is encouraged in Sharia, whereas it is prohibited in local customs. Subsidies for deep tube wells are promoted in Afghan non-water laws which can undermine the sustainable use of groundwater resources. The formal laws of the State of Afghanistan contemplate water as an economic good, whereas it is a basic human right in Sharia Law. In terms of indifference (type 1), water types are defined in Sharia but are not specified in local customs and the Afghan water laws. Moreover, conservation and efficient water use are well defined in Sharia but are not part of local customs and water use practices. There are some elements in the water governance frameworks that mutually support each other (type 4). For example, water quality monitoring, mandatory reporting and the polluters pay principle for water use in industry can achieve water goals separately and recognise the importance of other instruments. Similarly, no permits are required for domestic purposes in the Afghan water law but promotion of metering in non-water laws can help in sustainable water use and water conservation. Both water and non-water laws suggest fines and imprisonment for illegally diverting water and tampering with water infrastructure and permit systems are incorporated for drilling of deep tube wells for drinking purposes to increase access to drinking water. Licences are used in both water and non-water laws at the national level for addressing direct drivers of demographic shifts. For controlling pollution, both water laws and Sharia enforce penalties. Moreover, the Afghan water law recommends suspension of water rights in the case of non-payment which is supported by water pricing mechanisms in non-water laws of the country. This is depicted in Table 7.4. What stands out is that there are few participation principles and instruments that would enable accommodation of local policies except through the informal judicial system.

My analysis of the legal frameworks shows that different laws for water, energy, land, food and agriculture treat water differently, which in turn reduces their effectiveness and implementation. Despite the presence of formal legal frameworks for water, the local customs and Sharia laws are grounded in the local contexts historically which undermines some elements within the formal laws that contradict the local customs. Furthermore, weak organisational capacity and governance mechanisms provides ample manoeuvring space for powerful actors (at local level as well as large private sector organisations at national level) to circumvent these laws in their favour at the expense of low-income subsistence farmers and other water users.

⁷⁵ Interviewee 43, 49

Table 7.4: Legal pluralism analysis of Afghan water governance framework

Quality / Intensity	Weak relations	Strong relations
Contrary	<p><i>Type 1: Indifference - lack operational relationship among principles/instruments</i></p> <ul style="list-style-type: none"> - Types of water defined in Sharia, but not specified in local customs and water law - Conservation & efficient water use well defined in Sharia but not in local customs & practices 	<p><i>Type 2: Competition - contradiction among principles/instruments</i></p> <ul style="list-style-type: none"> - Subsidies for deep tube wells can undermine sustainable groundwater use - Private ownership forbidden in Sharia but allowed in customs - Water as an economic good (state law) & human right (Sharia) - Priority of use in Sharia but not in local customs - Water reuse in customs but prohibited in Sharia
Affirmative	<p><i>Type 3: Accommodation - recognition of principles/instruments</i></p> <ul style="list-style-type: none"> - Informal judicial system (Jirga) may try to link local customs to Sharia and national law - River Basin Councils when established could perhaps enable accommodation of different policy approaches - Participatory water management through formation of FOs and WUAs at local level including informal conflict resolution mechanism (Jirga) 	<p><i>Type 4: Mutual support - principles/ instruments support each other</i></p> <ul style="list-style-type: none"> - Water quality monitoring, mandatory reporting & polluters pay principle for water use in industry - No permits for domestic purposes (water law) but metering required (non-water law) - Fines & imprisonment for illegal diverting and tempering - Permits for deep tube wells for drinking purposes to increase access to drinking - Water use licences for addressing demographic shifts - Penalties for pollution in both water & Sharia law - Water pricing (non-water law) & suspension of water rights (water law)

Source: Modified from Bavinck and Gupta 2014

7.8 PRINCIPLES AND INSTRUMENTS ADDRESSING DRIVERS AND ACHIEVING INCLUSIVE AND SUSTAINABLE DEVELOPMENT

7.8.1 Principles and Instruments Addressing Drivers through National Water Law in Afghanistan

Afghanistan's legal and governance structure is based on a democratic national government. The three higher level branches (executive, legislative and judicial) are the foundation of the national level government. However, other formal entities including various ministries, the Afghan National Security Forces, and other commissions formed for this purpose also serve different government functions. Under the national government, the public sector is composed of provincial-level government departments, municipalities at the city level, and district-level governments at the

lowest level. In terms of water governance, the same conditions apply i.e., all the water laws and policies are designed by the central government. Provinces are not allowed to make their own policies or laws. Afghanistan's Constitution encourages the government to make policies which do not contradict the local customs of Afghan's and Sharia.

The 2009 Afghanistan National Water Law lists a number of water related functions including new constructions, repair and rehabilitation, development, and monitoring of irrigation infrastructure, including agricultural development in order to mitigate risks of floods (an indirect driver), and protect and maintain the environment. It also promotes research activities and the economic effectiveness of the irrigation system and appropriate irrigation technologies to improve water quality and reduce water losses (addressing a direct driver). However, these measures are not supported by any regulatory or economic instrument such as subsidies. Although the policy recommends formation of River Basin Councils to include representatives of water users, concerned federal and local departments, and other groups of stakeholders in the river basin, the provinces are not empowered, and all matters fall directly under the administrative authority of the Federal Ministry of Energy and Water (MEW). These arrangements can further strengthen the centralised form of government where the provinces are not given decision making powers on water management and governance.

Although water is described as a human right, it is clearly considered as an economic good through the development of a number of policy instruments. The 2009 Afghanistan Water Law relies on regulatory, economic and management instruments but lacks suasive policy measures to achieve its stated goals. Through regulatory instruments, ministries and departments can prepare strategies and policies for sustainable water use to address direct drivers. Permits have been introduced for regulation of water use to cater to the demands of a growing population. Industries are required to report on regular water quality monitoring where pollution prevention is ensured through the imposition of penalties and fines. In addition to financial penalties, there are strict punishments in the form of imprisonment for blocking, diverting and re-routing water, tampering with equipment and signs, interference in water distribution, and encroaching upon the right of way of a number of water resources for the wider public (such as river banks, streambeds, canals, ditches, springs, Karezes groundwater sources, swamps and wetlands). Permits are a mandatory requirement to be approved by the ministry of water and electricity in agreement with the ministry of Agriculture and Land Reforms for construction of deep wells for agricultural use, as well for commercial, industrial and urban water supply.

Since water is an economic good, rights can be suspended in case of non-payment of fees and misuse of water by utilising economic instruments within the water law which can address most of the direct drivers (agriculture, industry and municipal water use). The River Basin Councils are authorised for issuance, modification and cancellation of permits for water use in the cases of under- and over-utilisation, lack of water availability, and in the national interest. These Councils have authority for imposition and collection of penalties for agriculture and industrial uses. The only

exception for water use without permits is limited to drinking purposes, livelihood, navigation and fire extinguishing which address the indirect driver of poverty reduction. The law has proposed a number of fines for misuse of a water right, causing financial harm to another, threat to life, health and the livelihood of the downstream community.

There are a number of management instruments within the water law for ensuring devolution of management functions and self-regulation by establishing River Basin Agencies including advisory boards consisting of relevant institutions for participatory and equitable water distribution. Formation of Water User Associations (WUA) for participatory management, operation and maintenance (O&M) for equitable water distribution at the local level are central features. It also includes a dispute resolution mechanism through River Basin Councils (RBCs) over water distribution and use in the respective basins to address the indirect driver of political dynamics between/within states.

In terms of addressing the indirect driver of natural change and variability (e.g. flood and drought forecasting through data collection and analysis), normative management principles are applied without any effective policy instruments as mentioned above. Although it can improve equitable distribution at the canal level, the permit system is likely to provide benefits to the existing water bureaucracy by providing avenues for financial benefits and control over water recourse decision making (Lee 2006). Table 7.5 below briefly explain the instruments in Afghan Water Laws that address various multilevel drivers.

Table: 7.5: Instruments in Afghan water laws addressing drivers at multiple level in Afghanistan

	Instruments			Management
	Regulatory	Economic	Suasive	
Direct Drivers				
Agriculture development (e.g., commercial agriculture including animal husbandry, the extractive sector and water use in energy)	Imprisonment and fine for diverting and tampering; Permit for deep tube wells; Fines for misuse	Suspension of water rights for non-payment	-	Water User Associations (WUAs) for O & M, participatory management
Industry (including services and infrastructure)	Penalties and fines for pollution prevention; Water quality monitoring, mandatory reporting; Permits for water use in mining; Fines for misuse	Suspension of water rights for non-payment	-	-
Municipal water supply and sanitation services e.g., household uses (drinking water, sanitation, and hygiene) and subsistence agriculture	Penalties and fines for domestic pollution; Permits for urban water supply; Fines for misuse	Suspension of water rights for non-payment	-	-
Demographic shifts (i.e., migration, population growth, increase in population density, urbanisation, population growth)	Water use licences	-	-	-
Indirect Drivers				
Political dynamics between/within states	-	-	-	Dispute resolution mechanism (RBCs)
Culture and ethnic (attitudes for access and allocation, wasteful use of resources, etc.)	-	-	-	-
Non-water-related policies (agriculture & food security, land use, land tenure, economic development)	-	-	-	-
Economy (economic growth)	-	-	-	-
Poverty	-	No permits required for subsistence agriculture	-	-
Technological advances (agriculture intensification)	-	-	-	-
International trade (e.g. 'globalisation' or trade in virtual water)	-	-	-	-
Natural change and variability in weather, Droughts; Floods; Earthquakes; Landslides, tectonic movement.	-	-	-	Early warning system

7.8.2 Principles and Instruments Addressing Drivers through Non-Water Laws/Policies in Afghanistan

This section analyses the non-water related laws and policy frameworks in terms of the four policy instruments about water governance and management.

Under the Constitution of Afghanistan, the subterranean resources including water are the property of the state which can formulate laws and policies for their management and protection. The 2007 Environment Law has a number of regulatory instruments for environmental protection that can affect water quality and quantity. The National Environment Protection Agency (NEPA) of Afghanistan is established under the law which defines its powers and functions such as an apex body for policy formulation, implementation, environmental regulation and proper monitoring of environmental laws as well as coordination of international environmental agreements. For integration and coordination of environmental matters with other government agencies, the Environment Law has established Afghanistan's Committee for Environmental Coordination and the National Environmental Advisory Council. The law includes regulatory provisions such as fines and the polluter pays principle to address direct drivers (agriculture and industry) and licences for addressing demographic shifts. There are also some economic instruments such as water pricing to address direct drivers (agriculture and industry); subsidies for solar tube wells for agriculture and industry; and metering for domestic/municipal use. In terms of the indirect drivers, zoning and mapping are prescribed measures for flood control as well as conservation of ecological hotspots. Subsidies for tube wells are also suggested measures in terms of agricultural intensification (indirect driver), which can also lead to unsustainable groundwater abstraction. The non-water related laws and policies do not rely on suasive and management instruments for addressing water related issues. Table 7.6 below briefly explain the instruments in Afghanistan's non-water laws and policies that address various multilevel direct and indirect drivers.

Table 7.6: Instrument in non-water laws & policies addressing drivers at multiple level of governance in Afghanistan

	Instruments			
	Regulatory	Economic	Suasive	Management
Direct Drivers				
Agriculture development (e.g., commercial agriculture including animal husbandry, the extractive sector and water use in energy)	Fines Polluters pay principle	Water pricing Subsidies for solar tube well	-	-
Industry (including services and infrastructure)	Fines Licences for industrial use Polluters pay principle	Water pricing	-	-
Municipal water supply and sanitation services e.g., household uses (drinking water, sanitation, and hygiene) and subsistence agriculture-	-	Subsidies for domestic use Metering	-	-
Demographic shifts (i.e., migration, population growth, increase in population density, urbanisation, population growth)	Water use licences	-	-	-
Indirect Drivers				
Political dynamics between/within states	-	-	-	-
Culture and ethnic (attitudes for access and allocation, wasteful use of resources, etc.)	-	-	-	-
Non-water-related policies (agriculture & food security, land use, land tenure, economic development)	-	-	-	-
Economy (economic growth)	-	-	-	-
Poverty	-	Subsidies for solar tube well	-	-
Technological advances (agriculture intensification)	-	-	-	-
International trade (e.g. 'globalisation' or trade in virtual water)	-	-	-	-
Natural change and variability in weather, Droughts; Floods; Earthquakes; Landslides, tectonic movement.	Mapping and zoning for flood protection	-	-	-

7.8.3 Principles and Instruments Contribution in Achieving Inclusive and Sustainable Development

The analyses and contribution of principles and instruments included in the freshwater governance frameworks within Afghanistan as per the dimensions of inclusive and sustainable development reveals that inclusion of political and economic principles are very few while social-relational (seven) and ecological principles (eight) are in considerable numbers. Economic instruments dominate regulatory, suasive and management instruments. The inclusion of more economic instruments indicates the influence of international donors on Afghanistan's freshwater governance. Overall, the water governance structures within Afghanistan indicate that local priorities and political dynamics as well as donor-driven global development agendas and the neo-liberal economic system are influencing the governance of freshwater resources in Afghanistan from period to period. These findings suggest that there are weak linkages among drivers of freshwater problems and instruments to address these drivers.

The fact that most of the governance framework in all the four major periods have remarkably similar principles and instruments in most of the dimensions of inclusive and sustainable development shows that there are hardly any context specific designs for water governance frameworks within Afghanistan. For instance, arid or semi-arid areas in the country can be better managed by protection of recharge and discharge zones. The lack of context specific designs in water governance frameworks is likely to limit contribution of water governance frameworks to inclusive and sustainable development within Afghanistan.

In terms of inclusive development, relational inclusiveness is challenging to achieve even though the principle of advance notification of planned development measures was part of almost all governance frameworks within Afghanistan prior to the 2009 water law, which is not implemented. Throughout all periods of water governance frameworks, there is much stress on the inclusion of management instruments in terms of wide-ranging stakeholder participation and access to information which can contribute towards achieving relational inclusiveness with proper implementation. Moreover, social inclusiveness has relatively moderate potential due to emphasis on instruments of cost recovery; capacity building, poverty eradication and public education and awareness and can help Afghanistan to re-focus on human as well as natural capital development. However, this is also subject to implementation and developing a transparent and accountable governance structure at all levels. Additionally, environmental inclusiveness has very limited potential due to the absence of instruments to protect ecosystem services by regulating flow, preventing pollution, monitoring and giving significant attention to EIA.

Table 7.5 shows that the Afghan water law has a list of regulatory (e.g. imprisonment, fines, permits, fines, penalties, water use licences) and economic instruments (water charges, subsidies) to address the identified direct drivers, such as growing population, unplanned urbanisation and migration. However, there is no clear adoption of goals such as from the SDGs, and no clear prioritisation in

terms of human rights to water and sanitation or ecological instruments as in international law. Natural changes in freshwater quality and quantity in the context of Afghanistan (see Table 7.2), such as climate change and variability, floods, earthquakes and landslides are not addressed by Afghan Water Law.

To address the direct drivers of agricultural and industrial development as well as indirect drivers including economic development the country's water law relies on regulatory instruments by suggesting punishments for locking, diverting, re-routing water and tampering with equipment and signs that can interfere with water distribution. It also suggests a number of management instruments (formation of River Basin Councils and WUAs) for participatory management, operation and maintenance (O&M) for equitable water distribution, a dispute resolution mechanism through River Basin Councils (RBCs) and use in the respective basins. However, agricultural policy is not developed based on a consideration of water conditions or how climate change can affect it. The provinces are not empowered through RBCs and a dispute resolution mechanism over administrative boundaries is not addressed. The country could benefit by examining the implications of the SDGs, the equity and ecological principles and instruments in the international Water Laws, the human right to water and sanitation and integrating the implications of the Climate, Desertification and Biodiversity Conventions.

The analysis of Afghanistan's legal frameworks reveals that there are various laws and policies for governing natural resources. Each of these laws treat water differently, which in turn reduces their effectiveness and implementation. The existing institutional structure is a mix of informal and formal rules which are often contradictory at both sub-national and national levels. These developments have caused the overlapping of local customs, Sharia and modern rules of freshwater use in Afghanistan and created a legal pluralistic form of governance. Relying mainly on traditional practices to resolve water disputes can be problematic because there is hardly any set of rules and institutions in traditional practices to be systematically codified for application in a uniform way. While customary water management practices can provide an important foundation for fashioning locally appropriate water governance, it is also important to acknowledge that traditional structures are not necessarily inclusive and are often subject to elite capture. Similarly, water is of particular importance in Islam where the Quran and the Hadith provide clear instructions that mankind must protect water and other important natural resources from overutilisation and degradation. In a hadith, the prophet Mohammed issued instructions to limit the amount for watering plants to the depth of the ankle. This provision establishes a clear precedent that prohibits unsustainable consumption of water resources.

7.9 POWER ANALYSIS OF FRESHWATER GOVERNANCE IN AFGHANISTAN

Afghanistan's aid dependence has influenced its decision-making powers with negative consequences economically as well as politically.⁷⁶ With the fragile government institutions and

⁷⁶ Interviewee 42, 44 45

lack of technical capacity, the country is not yet ready to negotiate the terms of aid (Samim 2016 2017).⁷⁷ The low technical capacity, limited and fragile institutions could be some of the key reasons for a two percent decline in the agricultural productivity despite the European Union's support for agriculture and irrigation development (European Union 2019).

With a mixed and inter-linked legal framework for water governance and allocations (i.e. Sharia and local customs at local/sub-national level and formal laws at the national level), a fragile institutional setup due to four decades of conflict, and donor influence, the role of power becomes central in water governance in Afghanistan. Since some principles of Sharia contradict local customs as well as the formal water and non-water-related policies, the existing water governance frameworks are unlikely to address the identified drivers and other issues, which can lead to an asymmetrical power structure at sub-national and national levels. Due to Afghanistan's total dependence on foreign aid, weak organisational capacity, limited and fragile institutions and the long-term presence of a large number of donor organisations as well as states (also in the context of Pakistan, Iran and China), it is unable to address the pressing and real socio-economic and environmental issues including water challenges in contrast to issues of security and counter-terrorism. Likewise, the influence of donor organisations is manifested in the Water Law 2009 where water is treated as an economic good by empowering large private companies, commercial farmers and private groundwater providers at the cost of the low-income population, which are mostly dependent on subsistence agriculture. These resulting power imbalances at the local and national levels is used to include some people and exclude others, and can hinder effectiveness of water cooperation at the transboundary level.

The institutional analysis of Afghanistan shows that local customs and principles of Sharia include equity principles which promote community-based water sharing principles and benefit large landowners as opposed to weak actors by disregarding regulations of the central government. The focus of the Colonial era shifted towards a market economy, giving more individual rights regarding the utilisation of natural resources including water, which resulted in disproportional income gaps between the rural and urban population as well as between small and large landowners. Post-colonial legal systems comprise the Constitution of Afghanistan, civil codes and water laws where the constitution clearly directs to include sharia principles and local customs in all legal codes and policies. However, the existing institutional context and water related policies are often contradictory at both sub-national and national levels. These developments have caused the overlapping of local customs, Sharia, and modern rules of freshwater use in Afghanistan and created a legal pluralistic form of governance where: (a) at the local level some principles of Sharia (included in civil codes) contradict local customs, and (b) freshwater governance is disaggregated across multiple texts and often contradict non-water-related policies. Therefore, the existing water governance frameworks do not address direct and indirect drivers and other issues which can lead to an asymmetrical power structure, difficulties in achieving equitable access and allocation, and hinder the protection and conservation of ecosystem services at sub-national and national levels. The

⁷⁷ Interviewee 43, 48

weak institutional framework and governance mechanisms have provided space to powerful actors to advance their interests for water usage and control at the cost of small and subsistence farmers.

7.10 INFERENCES

This chapter has described and analysed multilevel freshwater governance in Afghanistan. It has done so by looking at (1) how different characteristics and drivers of freshwater problems are taken into account at multiple geographic levels in Afghanistan; (2) evolution of freshwater governance frameworks at different geographic levels in Afghanistan; (3) which governance instruments address the drivers of freshwater problems at multiple geographic levels in Afghanistan; (4) how legal pluralism can be observed at various geographic levels in Afghanistan; and (5) how power and institutions influence freshwater governance frameworks at multiple geographic levels in Afghanistan. Through these sub-questions, this chapter draws four conclusions.

First, widespread poverty, weak institutional and human capacity due to long-lasting conflicts and instability, and lack of knowledge and capacity to manage water resources have contributed to water challenges in Afghanistan. Afghanistan has enough water resources, approximately 2500 cubic meters, as compared to its neighbours, which are still largely underused. However, increasing population coupled with the changes in global climate will put immense pressure on the existing water resources. Due to Afghanistan's land-locked status and important geographic location, it has had historical disputes with its neighbours over water shares from its highlands which are very important for its survival. Currently, only 30-35% of the water is stored due to the lack of water storage and irrigation infrastructure in Afghanistan. It is challenging to get safe and reliable water supplies because water-resources data collection was stopped in the 1980s during the unrest and the Soviet invasion. Consequently, institutional knowledge, water related technology and abilities of water scientists were severely affected.

Second, since a large segment of the population in Afghanistan directly and indirectly depends on a variety of BESS provided by Kabul River, degradation of these vital services due to variability of water flows can have negative consequences. Afghanistan is directly dependent on its vast natural resources such as water, forests and minerals for its development and prosperity. Based on a recent classification, the country has 15 smaller eco-regions (four are considered as endangered, eight are categorised as vulnerable and only two can be considered as stable). The composition of species in these regions has been negatively affected due to unchecked overgrazing, wood collection for fuel and deforestation and overusage of land due to increasing large herbivorous animals. About 70-80% of the population is directly dependent on animal raising, subsistence agriculture, and small-scale mining for their income generation and livelihoods. Afghanistan must develop these assets for job and revenue generation in order to fund primary government services and improve the human wellbeing in terms of Human Development Index (HDI).

Third, it is vital to identify and understand key direct and indirect drivers of water issues for evidence based policies in a changing geopolitical and climatic scenarios for sustainable water use in

the country. Key direct drivers of water issues in Afghanistan are: (a) agriculture and industrial development; (b) demographic shifts; (c) increasing demand for clean drinking water and improved sanitation; and (d) natural changes due to climate variability and changes such as flooding and glacial lake outbursts and droughts. The four decades long war has destroyed water infrastructure and the agriculture sector which was providing employment opportunities to more than 80% of the population. Indirect drivers include: (a) political drivers where (i) the State's weak regulation encourages privately owned water abstraction (ii) the damaged water-carrying infrastructure (iii) security challenges creating disincentives to building infrastructure (in 2017, the World Bank sponsored Kamal Khan Dam and India-sponsored Salma Dam were attacked by the Taliban), (iv) donor countries continue to prioritise security and strategic priorities; (b) social drivers including poverty where about half of the population has access to clean drinking water and just about 35% use improved sanitation facilities; (c) economic drivers; and (d) cultural drivers including, wasteful behaviour towards water consumption and pollution, low technical knowledge and low education, which places Afghanistan at 169th on the HDI. Fourth, due to a pluralistic legal framework and weak organisational capacity, Afghanistan is unable to address the freshwater drivers.

Existing institutions are unable to achieve equitable access and allocation, and hinder the protection and conservation of ecosystem services (ESS) at sub-national and national level. Moreover, donor organisations are able to define and push their agenda in Afghanistan by prioritising their strategic and security interests (in the context of neighbouring China, Iran and Pakistan with a focus on cross-border terrorism, security and other geo-strategic issues) as opposed to addressing the socio-economic and environmental issues of the larger population. In Afghanistan, water resources are formally governed by the Constitution, Civil Code, and Water Laws while informally through the local customs and principles of Sharia. Based on the principles of Sharia, water governance practices in the pre-colonial era did not include equity principles which could have strengthened cooperation among local communities. Additionally, these principles would have discouraged favouring large land-owners against small-landholders. The focus of the Colonial era shifted towards a market economy, giving more individual rights regarding the utilisation of natural resources including water, which resulted in income disparities between the rural and urban population as well as between small and large landowners. The existing Constitution clearly directs to include Sharia principles and local customs in all legal codes and policies. However, the existing institutional context and water related policies are often contradictory at both sub-national and national levels. These developments have caused the overlapping of local customs, Sharia and modern rules of freshwater use in Afghanistan creating a legal pluralistic form of governance where: (a) at local level some principles of Sharia (included in civil codes) contradict local customs, and (b) freshwater governance is disaggregated across multiple texts and often contradict non-water-related policies.