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8 Institutions and Governance

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Chapter Overview

Fostering co-ordinated management of a transboundary basin can benefit from an understanding of the internal, often multilevel governance mechanisms in each country sharing it. This chapter delves into the legal and institutional architecture of water governance in basins shared between Afghanistan and Pakistan. Drawing on a careful document analysis as well as expert interviews, the chapter analyses the national laws and institutions in Afghanistan, as well as the legal and institutional provisions for water governance at the federal, provincial and local levels in Pakistan. A review of the existing design of internal water governance in both Afghanistan and Pakistan reveals that despite the existence of well-meaning and well-structured legal provisions, implementation is a key challenge for effective water governance to be addressed on both sides of the Durand Line. The chapter concludes that strengthening internal institutions for better implementation and engaging multilevel stakeholders for improved co-ordination of water policies between riparian countries can pave the path towards successful transboundary basin management in the Kabul, Kurram and Gomal river basins.



Fig. 8.1. Gathering of informal institution in the Gomal river basin.

Introduction

Transboundary water governance is influenced by decisions 'within, below, and beyond the interstate levels' (Zeitoun *et al.*, 2016). This matter highlights the significance of water governance mechanisms in place at the national and local levels. Co-operation on transboundary water governance necessarily requires an appreciation of the multiscale nature of water governance in countries that are home to shared river basins (Moss and Newig, 2010). Multilevel, federal and state institutional arrangements contribute critically and add more complexity to shared basin management (Newig and Fritsch, 2009; Schulz *et al.*, 2017).

In line with this important strand of work, this chapter aims to analyse the national and subnational governance for water in Afghanistan and Pakistan. Both Afghanistan and Pakistan are at a crossroads with regard to their internal water governance. The national, legal and institutional mechanisms for water governance within both countries have a bearing on how opportunities for transboundary governance in the shared Kabul, Kurram and Gomal river basins shape up. The analysis largely focuses on the legal and institutional provisions for water governance as promulgated by the laws of each country; however local, informal ways of governing water have been discussed wherever possible.

Extant studies show how greater alignment of water governance between riparian countries in a shared basin leads to improved co-operation and co-ordination of water resource management (Rawlins, 2019). National water-resource and related institutions, and the formal and informal mechanisms for water governance in basin countries play a key role in preparing them for sustainable transboundary water governance and can be key drivers of co-operation at the basin level (World Bank, 2017).

A number of studies have discussed the need for transboundary co-operation between Afghanistan and Pakistan, pointing to the political economy issues that have stymied shared basin management and benefit sharing in the region (Sadeqinazhad *et al.*, 2018; Shams and Muhammad, 2023). Studies have also analysed the formal and informal mechanisms for

national water governance in Afghanistan and Pakistan separately (Young *et al.*, 2019; Yasin *et al.*, 2020). No study to date has conducted a detailed comparative analysis of national legal and institutional structures of water governance in Afghanistan and Pakistan with a goal to highlight the extent to which national water governance can support co-operative basin management in the Kabul, Kurram and Gomal river basins. This chapter aims to fill this important gap and argues for better co-ordination of internal water governance in both countries as an important first step to shared basin management.

An appreciation of the multiscale nature of water governance in transboundary basins can also shed light on roadblocks to effective co-operation between basin countries as suggested by Earle and Neal (2017). The analysis of national and subnational water governance in each country also points to the need for engaging stakeholders at multiple levels for successful transboundary water governance in the three basins.

Since Afghanistan is a unitary state, analysis of the legal architecture of water governance involved an analysis of national legislation pertaining to water and water rights.¹ Pakistan is a federation with the provinces as federating units; hence this chapter summarizes the important federal laws relating to water and water rights and then summarizes the relevant laws of the province of Khyber Pakhtunkhwa (KPK), the province through which these western transboundary rivers flow and meet the Indus.

The chapter reviews both formal and informal institutions for water governance in Afghanistan and the recent developments in the political governance of the country to discuss implications for the future of water governance on the Afghan side of the western transboundary river basins. For Pakistan, both federal and provincial legal architecture for water governance is presented, with a focus on the legal and institutional set-up of water resource governance in the province of KPK. While there is no formal water sharing agreement between Afghanistan and Pakistan, the chapter briefly reviews the existing governance mechanisms on both sides of the Durand Line that could be used for transboundary co-operation.

The methodology of this chapter is based upon a textual review of the legal, institutional, regulatory and policy framework related to water and environmental governance. In addition to national legal and institutional provisions, international legal principles applicable to transboundary water governance in shared basins were reviewed. The extensive document review was supplemented by semi-structured expert interviews.

Water Laws and Institutions in Afghanistan

Water governance in Afghanistan consists of a complex mix of formal and informal laws and institutions. Formally, the Afghanistan Water Law (2009) and the Water Affairs Management Law (2020) adopted principles of IWRM and established a river basin management system by enrolling several ministries to establish a permit system to regulate water use. Notwithstanding the detailed legal and institutional set-up under the Afghanistan Water Law, in practice most farmers defer to the informal tribal and customary laws, which are administered through local village water masters called *mirabs*.

The Constitution of the Islamic Republic of Afghanistan (2004)

The subject of water was not explicitly mentioned in the 2004 Constitution and the responsibility of the state with regard to water governance was subsumed within its responsibility for the protection of natural resources and the environment. Article 9 of the Constitution said: 'the protection, management and proper use of public properties as well as natural resources shall be regulated by law'. Article 15 provided that '[t]he state shall be obligated to adopt necessary measures to protect and improve forests as well as the living environment'. It is not yet clear what will replace the 2004 Constitution or if water will be addressed.

Afghanistan's Civil Code (1977)

The Civil Code (1977) addresses issues related to water rights and entitlements, declaring that '[w]ater of rivers and their tributaries are public property'.² However, '[e]veryone ... has the right to irrigate ... or draw on a stream for irrigation purposes' including 'for irrigation of crops and trees', so long as the use is not 'contrary to public interests or special laws'.³ The Civil Code does not clarify what types of uses are or are not contrary to public interests, except to note 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 are intended to be irrigated'.⁴

Provisions of the Civil Code are generally consistent with Article 40 of the 2004 Constitution, which protects private ownership of property. These include: 'No one may build a watercourse, without a right to do so'.⁵ A '[p]erson who builds [a] special stream in his own property ... [has] the right to use it in any way he wishes and other persons may not use it without the builder'.⁶ Where an irrigation canal is lawfully built on another person's property pursuant to a right of way or passage, the other property owner may not deprive the builder of its use.⁷ However, a landowner seeking to irrigate his land cannot 'compel owners of lands under water to let the water pass through their lands, unless he has a right of way or passage of water through those lands'.⁸ If a right of way or passage for water already exists, the right 'shall remain so...[but] shall be terminated if there is obvious harm'.⁹

Afghanistan's Environment Law (2007)

The Afghanistan Environment Law (2007) addresses the management of issues relating to the rehabilitation of the environment and protection of natural resources, living organisms and non-living organisms.¹⁰ It defines the environment as meaning 'natural resources, interactions between the components of natural resources and between those components and humans and animals, and physical, aesthetic

and cultural qualities that may affect the health and well-being of humans'.¹¹

Some key provisions of the law relate to environmental considerations relevant to water resource governance. According to Article 34, all persons dealing with water resources are to take into account the protection of aquatic resources, associated ecosystems, biological diversity and the reduction and prevention of pollution and degradation of water resources.¹² All ministries and national institutions preparing water resource management plans must take into account (i) the provisions for integrated watershed management; (ii) regulation of sustainable abstraction of groundwater; (iii) regulation of the use of surface water for agricultural, industrial, mining and urban purposes; (iv) measures to protect human health and ecosystems; (v) measures to protect wetlands and their associated ecosystems; and (vi) any other provisions necessary for the sustainable use and management of water resources.¹³ Any owner or occupier of land on which activity likely to cause significant environmental pollution of a water resource is planned must take certain measures to prevent such pollution, including complying with prescribed waste standards or pollution management practices or ceasing the activity, eliminating the source of pollution and remedying any effect or disturbance to the banks of a watercourse.¹⁴

Afghanistan's Water Law (2009)

Afghanistan's Water Law (2009) is based on the principles of IWRM and uses a river basin approach to water resource governance, whilst also integrating informal institutions to support water governance at the local level. This section reviews the legal provisions and institutional architecture for water provision under the 2009 law. This law necessitated the adoption of the IWRM approach and a reform of existing water institutions and the establishment of river basin agencies, river basin councils, water user associations and irrigation associations. A mapping of the institutions responsible for water governance under the Water Law (2009) is given in [Table 8.1](#) and [Fig. 8.2](#).

The Afghanistan Water Law (2009) (the Act) was published in the official Gazette No. 980 in 2009 and enacted 'for the purpose of conservation, equitable distribution, and the efficient and sustainable use of water resources'.¹⁵ The Act declares, 'Water belongs to the public and government is responsible for its protection and management'.¹⁶ It supersedes the previous law for water resource use published in the official Gazette No. 755 in 1370.¹⁷

The Act states that integrated water resource management and development is to be carried out using a river basin approach.¹⁸ The development, storage, use, control, and conservation of water resources are to be guided by the National Water Policy and strategy and environmental protection.¹⁹ The uses of water are prioritized 'with due consideration for the praiseworthy customs and traditions of the people to meet the needs of drinking water, livelihoods, agriculture, industry, public services, energy production, transportation, navigation, fisheries and the environment' with priority for use of water resources given to drinking water and livelihoods'.²⁰ The Act declares, 'water use is free' but that water service providers may charge users a fee for the supply, storage, transmission, diversion, treatment, operation, and maintenance of the water supply and irrigation systems.²¹ Under the Water Law (2009), the institutional responsibilities for water governance are defined as set out in [Table 8.1](#).²²

Chapter 2 of the Act relates to the management of the use of water resources and stipulates additional duties and responsibilities of the Ministry of Energy and Water (MEW) and Ministry of Agriculture, Irrigation and Livestock (MAIL).²³

Article 9 of the Act establishes a Supreme Council of Water Affairs Management (SCWM) responsible for co-ordinating and revising facilities in the implementation of water affairs. Chapter 3 of the Act establishes river basin agencies, river basin councils, river sub-basin councils and water users associations 'formed with the purpose of integrated water resources planning and participation of the users and other social and cultural institutions in the decision-making process for management and development of water resources, protection of the environment, equitable distribution of water, and other water matters'.²⁴ River basin

Table 8.1. Responsibilities of Afghan institutions under Afghanistan's Water Law (2009).

Responsibility	Relevant government institutions
Protection, control, management and effective use of the water of the country	Government of Afghanistan
Planning, management and development of water resources	Ministry of Energy and Water
Planning and implementing activities to survey, investigate, research and assess groundwater reserves and their protection from pollution	Ministry of Mines with co-operation from (i) Ministry of Public Health; (ii) National Environmental Protection Agency
Protection and control of surface water from pollution and monitoring its quality	National Environmental Protection Agency with co-operation from: (i) Ministry of Agriculture, Irrigation and Livestock; (ii) Ministry of Energy and Water; (iii) Ministry of Urban Development; (iv) Ministry of Rural Rehabilitation Development; (v) Ministry of Public Health; (vi) Ministry of Mines
Determination of irrigation norms in different river basins, irrigation drainage systems and other related research for water use for agriculture and irrigation	Ministry of Agriculture, Irrigation and Livestock with co-operation from: (i) Ministry of Energy and Water; (ii) Ministry of Transport and Aviation; (iii) Ministry of Public Health; (iv) National Environmental Protection Agency
Provision of water supply for drinking and livelihoods, including construction of water treatment plants, water conveyance facilities, sewerage systems and sewage treatment plants	Ministry of Urban Development with co-operation from: (i) Ministry of Energy and Water; (ii) Ministry of Mines; (iii) Ministry of Public Health; (iv) Ministry of Agriculture, Irrigation and Livestock; (v) National Environmental Protection Agency
Provision of drinking water supplies and sewage treatment systems in villages by government or non-governmental organizations and construction of small water infrastructure for various village uses	Ministry of Rural Rehabilitation and Redevelopment with co-operation from: (i) Ministry of Energy and Water; (ii) Ministry of Public Health; (iii) Ministry of Mines; (iv) Ministry of Agriculture, Irrigation and Livestock; (v) Ministry of Urban Development; (vi) National Environmental Protection Agency
Rights of way for water resources and water infrastructure, storage facilities, diversions, rivers, traditional and engineered canals, karezes, springs, wells and other related natural water courses in light of the principles of Islamic jurisprudence	Ministry of Energy and Water with co-operation from: (i) Ministry of Agriculture, Irrigation and Livestock; (ii) Ministry of Mines; (iii) Ministry of Rural Rehabilitation and Development; (iv) related but unspecified departments
Management and planning for transboundary waters between Afghanistan and its neighbouring countries and changes of watercourses	Ministry of Energy and Water with agreements from: (i) Ministry of Foreign Affairs; (ii) Ministry of Interior; (iii) Ministry of Border and Tribal Affairs
Maintenance of a balanced record of water consumption and wastewater disposal	Institutions providing water supply and wastewater disposal services 'shall be submitted to the pertinent administrative authorities when required'.

agencies have the duty and authority to develop plans and manage water in accordance with the national water resource policies in line with the characteristics and needs of the relevant river basin.²⁵ River basin councils are to be established by the Ministry of Energy and Water and may

be delegated some of the powers of the Ministry. The duties of river basin councils include determining water allocations, in particular for river basins in accordance with the National Water Policy 2018, managing and monitoring water rights, issue, register, modify or cancel permits,

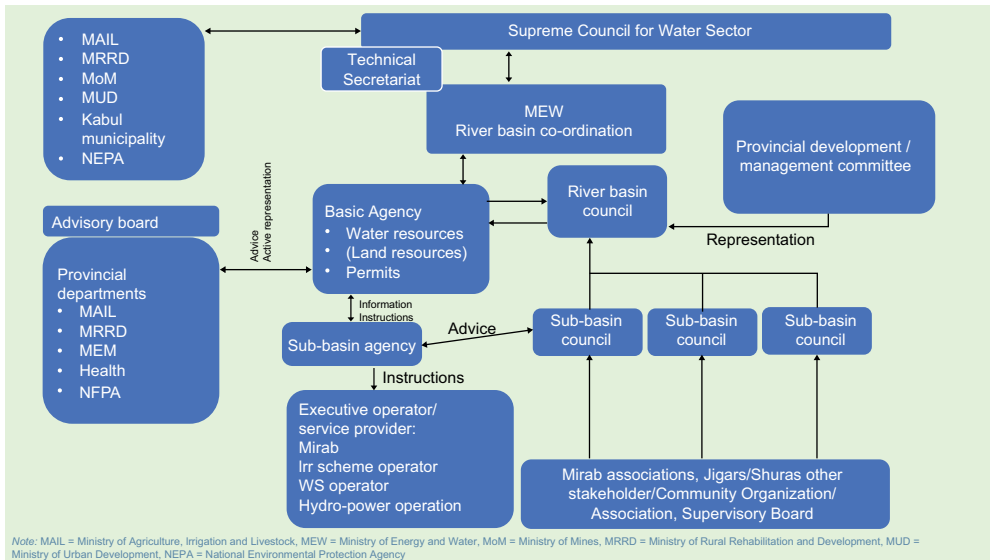


Fig. 8.2. Institutions responsible for water governance in Afghanistan. (Adapted from Rasooly, 2019)

and resolve disputes regarding the distribution of water.²⁶ Decisions of river basin councils may be implemented by river basin agencies²⁷ and may be appealed before the Ministry of Energy and Water and thereafter before the courts.²⁸ Water user associations can be established under this Act to carry out such duties and functions as prescribed in their respective charters.²⁹

Chapter 4 of the Act relates to the use of water and provides for a system of permits regulating its use. Article 19 prohibits the use of water resources without a permit except for (i) drinking water, livelihood and other needs (up to 5 m³ per household); (ii) navigation; (iii) fire extinguishing; and (iv) limited existing water rights. An activity permit or usage licence from a river basin council is required for surface and groundwater use for newly established development projects, disposal of wastewater and drainage water into water resources, use of water for commercial and industrial purposes, digging and installation of shallow and deep wells for commercial, agricultural, industrial and urban water supply purposes, construction of dams or storage structures if storage capacity exceeds 10,000 m³, as well as the construction of structures that encroach on the banks, beds, courses or protected rights of way of streams, wetlands, karezes and springs.

The responsibility of regulating the distribution of water within the irrigation networks of designated areas may be delegated by the Ministry of Agriculture, Irrigation and Livestock to irrigation associations who may, in turn, delegate such responsibilities to a Head Water Master (*Mirab Bashi*) or Water Master (*Mirab*) designated as such by the irrigation associations.³⁰ Water quality standards for drinking water and sanitation, agriculture and industrial wastewater are to be established by the Ministry of Public Health, the Ministry of Agriculture, Irrigation and Livestock, and the Ministry of Urban Development, respectively.³¹ Use of water for micro-hydropower generation may be done with agreement from the Ministry of Agriculture, Irrigation and Livestock, the Ministry of Rural Rehabilitation and Development, and irrigation associations.³² Requests for the use of rivers, canals or other water resources for transportation and navigation are to be submitted by the river basin agency concerned before the Ministry of Energy and Water and then endorsed by the Supreme Council of Water Affairs Management.³³

According to Chapter 5 of the Act, the National Environment Protection Agency and the Ministry of Public Health are designated to maintain tolerance limits for pollution of water

resources. The Ministry of Energy and Water (MEW) is responsible for dams after approval from the Supreme Council of Water Affairs Management.

While the Water Law has established formal institutions for water governance in Afghanistan, it also upholds and works with the informal traditional *mirab* system. According to Chapter 6 of the Act, if a dispute arises amongst farmers within an irrigation network, they are to be resolved by the irrigation association with the help of the Head Water Master (*Mirab Bashi*) and Water Master (*Mirab*) within two days. The Act then provides an appellate process that leads from the river basin council to the Ministry of Agriculture, Irrigation and Livestock and then to the courts.³⁴ Tampering with, damaging or destroying water resources may be punished with imprisonment of up to two years and a fine commensurate with such tampering, damage or destruction.³⁵

The 2009 Water Law also delineates the responsibility for research, identification and protection of groundwater to the MEW in close co-ordination with MoPH and NEPA (Articles 8 and 9). MEW also has the responsibility to license and issue permits for extraction of more than 5 m³ per day under Articles 19 and 21. Yet in many places, including Kabul, private commercial extraction of groundwater continues without any regulation or permit from MEW.³⁶ Despite groundwater governance being an integral component of the Water Law (2009), in practice the issue of groundwater is side-stepped and considered in isolation from the river basin agencies.³⁷

Afghanistan's Water Affairs Management Law (2020)

A new national statute, the Water Affairs Management Law (2020), replaced the Water Law (2009). The new Water Law aims to promote equitable, efficient and sustainable water use and attempts to harmonize water sector policies and institutions.³⁸ While the new legislation clarifies responsibilities and affirms the authority of the Supreme Council of Water, Land and Environment (SCWLE), it also established the National Water Affairs Regulatory Authority

(NWARA) by presidential decree (Table 8.2). According to the Water Affairs Management Law (2020), NWARA assumed many responsibilities previously vested with the MEW and acted as the office in charge of water resource governance. The Water Affairs Management Law (2020) empowers NWARA to determine sectoral water allocations every three years for drinking, agriculture, industry, environment, energy and tourism. NWARA was also responsible for managing regional data on meteorological and hydrological stations. The 2020 Water Affairs Management Law assigned environmental planning to SCWLE and established a Water Affairs Management Coordination Committee to harmonize sectoral planning and implementation. However, the structure and functions of this committee have yet to be defined. However, due to the political change in August 2021, the Islamic Emirate of Afghanistan (the new regime) has reinstated the MEW with all of its discretions, duties and responsibilities under the Water Affairs Management Law (2020) and abolished the NWARA. Currently, the MEW is the key technical national water governance entity in Afghanistan and the Water Affairs Management Law (2020) is the valid national water law.

Improved Institutions in Afghanistan, Pending Effective Implementation

Afghanistan seems to have improved its institutional capacity for water governance over the last two decades. Successive legislation for water governance has created administrative capacity for water management, but there are several overlaps between the old and new institutions, and severe gaps remain in the implementation of the state's legal and institutional framework for water governance.

Under the Constitution of Afghanistan (2004), natural resources such as water are to be regulated by laws. The Water Act of 2009 and the recent Water Affairs Management Law (2020) have also led to the creation of a range of institutions. The multitude of legal provisions for water in Afghanistan imply that the state is obliged to protect the living environment including rivers and water bodies. In discharging this

Table 8.2. Institutions for water resource governance according to the Water Affairs Management Act (2020). (Adapted from USAID, 2020)³⁹

Level	Institution	Role and responsibilities
National	Ministry of Energy and Water (MEW)	Drafting water laws, policies and strategies, analysing the potential of available and accessible water, and watershed management. Preparing plans for water allocation and use. Preparing plans for rehabilitation, development and use of water infrastructure and its execution and supervision. Expansion of hydrological and hydrogeological networks. Creation of a national information bank for water resources for water planning and in due consideration of climate change impacts. Facilitating private investment in the water sector.
	Supreme Council of Water, Land and Environment (SCWLE)	Approving policies and strategies related to the regulation and development of water resources, beneficial use and oversight of its implementation. Approving plans and management of transboundary water. Approving plans of diplomacy for transboundary water negotiations. Approving plans for regulation, allocation, supply, distribution and use of water resources. Deciding on interbasin water transfers. Deciding on transboundary waters.
	National Environmental Protection Agency (NEPA)	Responsible for monitoring surface water quality along with MEW and river basin agencies.
	Ministry of Mines and Petroleum	Responsible for monitoring and managing groundwater quality, groundwater availability and balance studies, and permits for deep wells.
	Ministry of Public Health	Responsible for setting water quality standards based on use, including for drinking, domestic use, irrigation and industrial uses. However, the Ministry of Public Works should do this in co-operation with NEPA, MEW, MAIL and Ministry of Mining and Petroleum.
Sub-national	River Basin Agencies (RBAs), Sub-basin Agencies (SBAs)	Established by NWARA, these institutions are not consistently established in all basins. River basin associations and sub-basin associations develop basin-management and water-use plans in accordance with National Water Policy 2018 and in consultation with river basin councils responsible for surface-water quality monitoring.
	River Basin Councils (RBCs), Sub-basin Councils (SBCs)	MEW is responsible to establish river basin councils and sub-basin councils consisting of water users and government representatives from line ministries. Provide advice on water management strategy and water dispute resolutions and advise on water allocation plans. Monitor water allocations and the protection of water rights.
	Water Users Associations (WUAs), IAs	Water user associations are responsible for managing water use, distribution, operation and maintenance of main canals, and are registered with MEW and NWARA. Irrigation association responsibilities are similar to water user associations but these are registered with the Ministry of Agriculture, Irrigation and Livestock (MAIL). These entities are not consistently established in all river basins.

responsibility, the legal provisions in successive water acts adopt a river basin approach and principles of integrated water resources management to design national water and environmental policies. The uses of water are prioritized, with drinking water and livelihoods the top priority, and with due consideration to informal institutions and local practices. The Water Law (2009) decrees water use to be free but allows water service providers to charge fees for the supply of water and related operating and maintenance costs.

Several institutions were created by the 2009 Water Law (Fig. 8.2). These are the Supreme Council of Water Affairs Management for national co-ordination and then a cascading series of river basin councils, river sub-basin councils and water users associations. While laws confer considerable power to these institutions, river basin councils and river sub-basin councils have been established only for the Kabul and Haridud-Murghab rivers; and whilst water user associations are established in most provinces, they do not appear to be operating in practice (Lackner, 2016).

The Afghan water laws also assign responsibilities related to water to relevant ministries. Importantly, the management and planning for transboundary waters are with the Ministry of Energy and Water with agreements from the Ministry of Foreign Affairs.

The Environment Law (2007) of Afghanistan regulates the use and consumption of water by prohibiting the discharge of effluents into the rivers or waters of Afghanistan without a permit issued by the Environmental Protection Agency. The law requires the agency to establish standards for the discharge of effluents into water. However, these responsibilities tend to overlap with those prescribed by the Water Law (2009) in as much as the latter also allocates the responsibility to establish water quality standards to the Ministry of Agriculture, Irrigation and Livestock, the Ministry of Urban Development and the Ministry of Rural Rehabilitation and Development.

Despite the range of legal provisions for water governance in Afghanistan, water in Afghanistan continues to be governed through a complex interplay of formal and informal rules. While the Water Law (2009) provides an overarching legal and institutional framework for the

comprehensive management of water resources, it has not been fully implemented throughout the country, according to a 2015 UN Study (Lackner, 2016). Most farmers still prefer to depend on tribal customary law, which is administered through the *mirabs* or local village masters.

The change in political governance in Afghanistan in August 2021 is likely to halt or even reverse the promises of integrated water resource management and the river basin approach initiated by the Water Law (2009) and reinforced by the Water Affairs Management Act (2020). The implementation of well-meaning water laws is a key challenge on the Afghan side that needs to be addressed, as sole reliance on traditional water governance structures in Afghanistan are unlikely to be able to address problems of water distribution, over-abstraction and pollution in the western transboundary river basins.

The change in political governance in the country has also resulted in a reduction in technical capacity for managing water resources, as experts leave the country or are no longer able to work.⁴⁰ Another key concern is the tendency of political regimes to use water and water infrastructure as a weapon such as in the case of Badakhshan district, Kandahar province and Herat. A particularly worrisome issue is Taliban control of the Dahla Dam and their attack on the Afghanistan–India Friendship Dam (Hessami and Ghafouri, 2021). The tendency to target dams as symbolic objects of water infrastructure could threaten prospects of collaboration between Afghanistan and Pakistan on the western transboundary river basins.

Pakistan Water Laws and Institutions

Constitutional provisions

The legal and institutional architecture for water governance on the western side of Pakistan's transboundary river basins rests on a mix of federal laws and provincial legislation of the province of KPK, the only Pakistani province through which the Kabul, Kurram and Gomal rivers flow. An overview of the Constitution of the Islamic Republic of Pakistan provides an insight into the legislative and policy domains of the federation *vis-à-vis* the provinces with

respect to water. The Constitution of the Islamic Republic of Pakistan (1973) establishes a three-tier form of government, with a federation consisting of a president, a parliament (comprising a national assembly and senate), a prime minister and the Supreme Court, along with provincial federal assemblies, chief ministers, provincial high courts and sub-provincial local governments.

Subsequent to the Constitution (Eighteenth Amendment) Act 2010, the parliament is empowered to make laws over subjects enumerated in the Federal Legislative List set out in the Fourth Schedule to the Constitution and provincial assemblies have the power to make laws over subjects not enumerated in the List.⁴¹ Similarly, the Constitution extends the executive authority of the federation to those subjects over which it can make laws⁴² and the executive authority of the provinces to those subjects on which it can make laws.⁴³ Water is not on the Federal Legislative List, making water a subject of provincial legislative and executive competence. Water appears less than ten times in the text of the Constitution of Pakistan, but it is from here we can ascertain the roles of the federation and provinces regarding water.

The Constitution establishes the Council of Common Interests, an apex federal body comprised of the prime minister as chairperson, the provincial chief ministers and three members of the federal government, who have been mandated to formulate and regulate policies in relation to matters enumerated in Part II of the Federal Legislative List. Part II establishes the Water and Power Development Authority under the Pakistan Water and Power Development Authority Act 1958 (the WAPDA Act) to prepare comprehensive plans for the development and use of the water and power resources of Pakistan.⁴⁴ In this manner, though water is a provincial subject, the Council of Common Interests may set and regulate policy on the water resources of Pakistan through WAPDA.

In addition, Article 155 of the Constitution gives the Council of Common Interests the power and authority to hear complaints as to interference with water supplies if the interests of the provinces, federally administered tribal areas or capital territory are being affected by (i) any executive act or legislation taken or passed, or proposed to be taken or passed; or (ii) the failure

of any authority to exercise any of its powers with respect to the use, distribution or control over water from that source.

In such cases, the federal government or the provincial government concerned may make a complaint in writing to the Council.

Upon receiving a complaint, the Council shall, after having considered the matter, either give its decision or request the president to appoint a commission consisting of such persons having special knowledge and experience in irrigation, engineering, administration, finance or law, as he may think fit, hereinafter referred to as the Commission. After considering the report and supplementary report of the Commission, it shall record its decisions on all matters referred to the Commission.

It can be observed that this constitutional platform is not automatically available. Only the federal or provincial governments may refer a matter to the Council of Common Interests, and if the conditions stipulated in Article 155(1) (a) and (b) are met. However, interprovincial politics, and difficulties in convening or setting the agenda of the Council of Common Interests make it an unreliable platform for adjudication of such complaints. Nevertheless, the Constitution attempts to ensure that, if an adjudication on water supplies does take place, it will be based on experience and not politics.

Federal legislation

Easements Act 1882

An easement is a type of legal right that originated as part of the English Common Law of real property and was introduced to South Asia during the colonial period. An easement is a right in immovable property and is defined as 'a right which the owner or occupier of certain land possesses, as such, for the beneficial enjoyment of that land, to do and continue to do something, or to prevent and continue to prevent something being done, in or upon, or in respect of certain other land not his own'.⁴⁵ It is a peculiar right in as much as it vests the owner of the land with rights over another's land in certain circumstances.

In Pakistan, the Easements Act 1882 is particularly relevant for the extraction of

groundwater. According to the Act, owners of land had the right to 'collect and dispose within his own limits of all water under the land which does not pass in a defined channel and all water on its surface which does not pass in a defined channel' (Easements Act 1882, Section 7).

Despite the provision in various federal and provincial laws with regard to governance of groundwater, in practice the Easements Act 1882 governs groundwater extraction in the country to date. The Act allows landowners to effectively collect and dispose of underground water as long as it is not a part of a public irrigation network.

However, nothing in the Act derogates from 'Any right of the Government to regulate the collection, retention and distribution of the water of rivers and streams flowing in natural channels, and of natural lakes and ponds, or of the water flowing, collected, contained or distributed in or by any channel or any work constructed at the public expense for irrigation'.⁴⁶ Easements, therefore, are property rights that can be exercised between private parties, but not against the government in relation to water that flows naturally, or is found in nature or is part of the public irrigation network.

The Khyber Pakhtunkhwa Water Act 2020 has provisions that give the provincial government control over groundwater extraction and require users to obtain licences for groundwater use. However, these provisions are not currently implemented, hence large-scale groundwater abstraction is taking place unrestrained.

Water and Power Development Authority (WAPDA) Act 1958

The Act provides for 'the unified and coordinated development of the water and power resources of Pakistan'.⁴⁷ The Act establishes the WAPDA and gives it the general power and duty to prepare comprehensive plans for the development and utilization of water and power resources including the power to frame schemes providing for irrigation, water supply and drainage and the recreational use of water, flood control and inland navigation.⁴⁸ All schemes prepared by WAPDA must be submitted for approval to the Government of Pakistan. The Act also confers onto the Authority the control

over underground water resources of any region in a province, subject to other laws.⁴⁹ However, before WAPDA exercises any control over underground water resources, the area over which and the extent to which control is intended to be exercised is to be notified by the government.⁵⁰ In practice, WAPDA does not take responsibility for groundwater governance.

The jurisdiction of the Council of Common Interests to set policy in relation to the WAPDA and the composition of the Council provide a balance of federal planning, co-ordination and provincial political consent in the framing of any water schemes or exercise of any control by the Authority.

Federal Government Rules of Business 1973

Articles 90 and 99 of the Constitution confer onto the federal government the power to make rules for the allocation and transaction of its business. These rules are in exercise of that power and provide for the constitution and composition of ministries and divisions within the government, the allocation of business therein, and inter-ministerial and cabinet proceedings.⁵¹

Rule 13 provides that the Foreign Affairs Division be consulted on all matters which affect the foreign policy of Pakistan or the conduct of its foreign relations. Below is a list of ministries and divisions responsible for water issues:

- i. Housing and Works Division: physical planning and human settlements including water supply, sewerage and drainage
- ii. Water Resources Division: matters relating to the development of water and power resources in the country, Indus Waters Treaty, 1960, Water and Power Development Authority, Indus Rivers System Authority and the Pakistan Trans-border Water Organization.

Water Apportionment Accord (1991)

Pakistan's Water Apportionment Accord (1991) is a landmark agreement executed by the chief

ministers of the four provinces of Pakistan in March 1991 and relates to the apportionment of the waters of the Indus river. For the implementation of the Accord, the need to establish an Indus River System Authority was accepted.⁵² The allocation of each province is set out in paragraph 2 of the Accord (Table 8.3).

The Accord recognizes the need for certain minimum outflow to the sea below the Kotri Barrage (environmental flows necessary to maintain the ecosystem of the Indus Delta) and agreed to conduct studies to establish the optimum level of release. The province of Sindh maintained the optimum level was 12.3 GM.

The apportionment of water in the Accord assumes flows of 144 GM³/year in the system to be apportioned in the manner provided in paragraph 2. However, in the absence of additional storage capacity, these projected flows have never been reached. As a result, the province of Punjab has argued that water should be apportioned as per the historical uses.⁵³ The province of Sindh (a lower riparian on the Indus), however, maintains that allocations should be according to the percentages in paragraph 2 of the Accord (Condon *et al.*, 2014). At present, IRSA uses a three-tier method to distribute water. The method consists of three portions of the total water predicted to be available in the system in the upcoming year.⁵⁴

Indus Rivers Systems Authority Act 1992

The Act establishes the Indus Rivers System Authority (IRSA) 'for regulating and monitoring

Table 8.3. Allocations by province (billion cubic metres (bcm) per year).

Province	Season		Total
	Kharif	Rabi	
Punjab	45.72	23.27	69.00
Sindh	41.86	18.28	60.14
NWFP (A)	4.29	2.83	7.13
NWFP (B) civil canals	2.2	1.48	3.7
Balochistan	3.51	1.25	4.77
Total	97.61	47.13	144.74

the distribution of water sources of the Indus River in accordance with the Apportionment of the Waters of the Indus Rivers System between the Province signed by the provinces on 16 March 1991 and approved by the Council on 21 March 1991'.

The IRSA is responsible for establishing the basis for regulation and distribution of surface waters amongst the provinces according to the allocations and polices spelled out in the 1991 Accord.⁵⁵ It is also in charge of reviewing and specifying river and reservoir operation patterns and periodically reviews the system of such operations. In addition, IRSA is responsible to co-ordinate and regulate the activities of the Water and Power Development Authority, the exchange of data between the provinces in connection with the gauging and recording of surface flows. IRSA's mandate includes the settlement of any questions that may arise between two or more provinces in respect of distribution of river and reservoir waters.

Section 8(3) of the Act gives provincial governments and WAPDA the opportunity, if aggrieved by any decision of IRSA, to make a reference to the Council of Common Interests. However, it is pointed out that under Article 155(1) of the Constitution, only the federal or provincial governments may make complaints to the Council. It is unclear, therefore, whether the Council of Common Interests would entertain a complaint against IRSA made by WAPDA.

National Water Policy 2018

The National Water Policy 2018 derives from amendments of 2017 to the Rules of Business 1973 of the Executive Authority. Under the Rules of Business 1973, the Ministry of Water Resources has authority over matters related to water resources development in the country. In addition, the Council of Common Interests has a remit over policies related to groundwater, hydropower development and other matters covered under the WAPDA Act of 1958.

The National Water Policy 2018 is a broad policy framework by the federal government 'on the basis of which provincial governments can formulate their respective master plans and projects for water conservation, water development,

Table 8.4. Responsibilities of federal government for water resource governance on Pakistan's side.

Legislation	Institution responsible
Constitution of Pakistan 1973	Council of Common Interests
Easements Act 1882	No formal institution
WAPDA Act 1958	Water and Power Development Authority
Indus Apportionment Accord (1991)	Indus River System Authority Council of Common Interests
National Water Policy 2018	Ministry of Water Resources

and water management'.⁵⁶ Being the country's first national water policy, this document is commended as a historic achievement by many. However, in terms of its content, the policy is loosely focused on principles of integrated water resource management for sustainable management of Pakistan's water resources, without an action plan for implementation.

It is pertinent to note that Pakistan's National Water Policy 2018 only acknowledges and refers to the Indus Water Treaty and its transboundary relationship with India in Section 9. Pakistan's reliance on the waters of the western transboundary river basins and the need for an effective transboundary water-sharing agreement with Afghanistan has not been addressed in the policy document.⁵⁷ A list of institutions responsible at the federal level for water resources governance in Pakistan is presented in [Table 8.4](#).

Water Laws in Khyber Pakhtunkhwa Province

Khyber Pakhtunkhwa Canal and Drainage Act 1873

The Act provides for the regulation of irrigation, navigation and drainage and states that 'throughout the territories to which this Act extends, the provincial government is entitled to the use and control for public purposes the water of all rivers and streams flowing in natural channels and of all lakes, sub-soil water and other natural collections of still water'.⁵⁸

The Act relates to the application of water for public purposes, the construction and maintenance of works, the supply of water, water

rates, canal navigation, drainage, obtaining labour for canal, and drainage works.

Section 5 of the Act gives the provincial government authority to declare the water of any river or stream flowing in a natural channel or of any lake or other natural collection of still water to be applied or used for the 'purpose of any existing or projected canal or drainage work' and sets out the process by which compensation is to be paid to persons deemed affected by such a declaration.

While this Act is still in force, the exercise of its powers has been transferred to the Khyber Pakhtunkhwa Irrigation and Drainage Authority in accordance with the Khyber Pakhtunkhwa Irrigation and Drainage Authority Act 1997 (Section 3.3.3).

Khyber Pakhtunkhwa Rules of Business 1985

Article 139(3) confers on provincial governments the power to make rules for the allocation and transaction of its business. These rules are made in exercise of this power and provide for the constitution and composition of departments within the Government of KPK, the allocation of business therein and interdepartmental and cabinet proceedings.

Rule 11 prohibits departments from authorizing any orders that may affect the finances of the province or which involve relinquishment, remission or assignment of water power rights without previously consulting the Finance Department. According to this Act, the list of departments responsible for water issues are:

- i. Environment Department: forest watershed management and management and development of public waters



Fig. 8.3. Discussion on water distribution among water managers.

- ii. Irrigation Department: river surveys, construction and maintenance of canals, storage of water and construction of water reservoirs, flood control schemes and administration of the Canal and Drainage Act, 1873
- iii. Local Government, Elections and Rural Development Department: water supply and sewerage schemes of local governments
- iv. Public Health Engineering Department: drinking-water supply schemes, levy and collection of fees for supply of drinking water and sanitation, and wastewater disposal projects
- v. Environment Department: watershed management.

Khyber Pakhtunkhwa Irrigation and Drainage Authority Act 1997

The KPK Irrigation and Drainage Authority Act sought to 'transform the provincial Irrigation

Department, which hitherto was responsible for the implementation of the Canal and Drainage Act, 1873 into an autonomous authority and to establish area water boards and farmers' organizations towards development and management of the irrigation, drainage and flood control infrastructures in the province'.⁵⁹

The Act establishes the Khyber Pakhtunkhwa Irrigation and Drainage Authority and aims to transfer the work and responsibilities of the Irrigation Department of the Government of Khyber Pakhtunkhwa, including its employees, to the newly established Authority. This meant that the Authority would exercise all the powers under the Canal and Drainage Act 1873, to fix irrigation rates with area water boards, to operate and maintain irrigation and drainage infrastructure in KPK except private and civil canals, as well as co-ordinate surface and groundwater quantity and quality data from KPK.⁶⁰

Notwithstanding the enthusiasm with which the KPK Irrigation and Drainage

Authority was created, it failed to take on the mandate of the KPK Irrigation Department. Initially, some area water boards and farmer organizations were created under the newly established authority. However, these were later disbanded. While the KPK Irrigation and Drainage Authority Act has not been formally repealed by the KPK government, in practice the Authority is not functional.⁶¹

Khyber Pakhtunkhwa Forest Ordinance 2002

The Ordinance provides for the consolidation and amendment of laws relating to the protection, conservation and sustainable development of forests and other renewable natural resources. It grants the provincial government the power to declare different types of forests (reserved, protected, *guzara*, village etc.) and sets out the manner in which such forests are to be regulated, protected and conserved.

Section 25 of the Ordinance allows a forest officer, with the previous sanction of the provincial government, to 'stop any public or private way or watercourse in a reserved forest provided that a substitute for the way or watercourse so stopped already exists'. Polluting water in reserved forest is prohibited.⁶² Section 36 of the Ordinance allows a forest officer, with the previous sanction of the provincial government, to declare a *guzara* forest and to specify measures for the maintenance of water supply in springs, rivers, tanks and reservoirs.⁶³ Polluting water in a *guzara* forest is prohibited.⁶⁴

Khyber Pakhtunkhwa Integrated Water Resources Management Board Ordinance 2002

The Ordinance establishes the Khyber Pakhtunkhwa Integrated Water Resources Management Board with the Chief Minister of the Province as Chair and some 18 members. Of these, seven are to be representatives of the

Kabul and Indus rivers, and the Kohat, Kurram, Gomal, Chitral and Siran river valleys. The remainder are *ex officio* officials of the provincial government. The functions of the board include conducting research and allocating water resources for consumptive and non-consumptive use, to develop policies to protect the contamination and water resources and specify wastewater quality in public drains.

In practice, the board is not functional and its functions are not being subsumed within the KPK Water Resources Commission or KPK Water Resources Regulatory Authority.

Khyber Pakhtunkhwa River Protection Ordinance 2002

The Ordinance provides for the protection of the aquatic ecology, water quality, and economic and environmental value of the rivers and their tributaries in Khyber Pakhtunkhwa Province.

Section 3 prohibits construction or 'any other developmental work' within 200 feet beyond the high-water limit on either side of rivers or their tributaries; the deposit or release or any substance into rivers or tributaries in excess of the National Environmental Quality Standards; and the disposal of any hazardous waste or substances notified by the provincial government into the rivers or their tributaries. Section 4 allows the provincial government to prepare land-use and zoning plans and make building control regulations to control developmental activities and construction for a specific river or all rivers and their tributaries, and construction of buildings in the catchment area of any river.

The Ordinance provides for an authorized officer to enter buildings and property for the purposes of inspection and compliance with the provisions of the Ordinance.⁶⁵ Such authorized officer has the power to stop any activity with respect to which an office appears to have been committed under the Ordinance, and those found contravening the Ordinance shall face punishment of imprisonment of up to six months or with a fine of up to PKR 500,000 or both.⁶⁶

Khyber Pakhtunkhwa Local Government Act 2013

The Act provides for the regulation of local government institutions in the province of Khyber Pakhtunkhwa and establishes local governments at the district, tehsil (township) and village levels.

The Act defines 'municipal services' as including intra-city networks of water supply, sanitation and removal and disposal of sillage, sewers and storm water.⁶⁷

The district councils have the function to review the development of integrated water reservoirs, water sources, treatment plants, drainage, liquid and solid waste disposal, sanitation and other municipal services. At the tehsil level, tehsil municipal administrations in urban tehsils have the power to impose and collect taxes on, and levy charges for, the development of water supply and drainage it carries out.⁶⁸ At the village level, it is the function of the village council to improve water supply sources, maintain water distribution systems and take measures to prevent the contamination of water.⁶⁹ The *nazim* (chief) of a village has the responsibility to report any breach of public water courses.

Khyber Pakhtunkhwa Environmental Protection Act 2014

The Act provides for the protection, conservation, rehabilitation and improvement of the environment, monitoring, prevention and control of pollution and the promotion of sustainable development.⁷⁰ The Act defines the environment to include 'air, water and land' and its interrelationship with several other factors, including the ecosystem and ecological relationships and all social and economic conditions affecting community life.⁷¹

The Act establishes the Khyber Pakhtunkhwa Environmental Protection Council with functions and powers to approve the Khyber Pakhtunkhwa Environmental Quality Standards and provide guidelines for the generation of renewable and non-renewable resources, solid waste and water and sanitation. In this manner, the Council may set standards and guidelines with respect to water.

The Act also establishes the Khyber Pakhtunkhwa Environmental Protection Agency, the powers and functions of which are to be exercised by a director-general or by staff specially delegated by the director-general. The functions of the agency are to prepare, revise, establish and ensure enforcement of the Khyber Pakhtunkhwa Environmental Quality Standards approved by the council and to establish the standards for the quality of ambient air, water and land by notification.⁷²

Section 12 of the Act stipulates that the provincial government may be asked to carry out strategic environmental assessments of plans and policies, including water use management and prevention of water pollution into rivers. The Act defines a strategic environmental assessment as a systematic analysis that ensures the principles of sustainable development are integrated into the development of provincial government policies, plans or programmes.⁷³

The Act prohibits the discharge of emissions in excess of the Environmental Quality Standards set by the Council. Projects are subject to an initial environmental examination and environment impact assessment process. The agency may pass an Environment Protection Order (Section 17) where satisfied that a discharge or emission has or is about to take place or a violation of the Act has or is about to take place.

Khyber Pakhtunkhwa Water Act 2020

The Government of KPK recently approved the Khyber Pakhtunkhwa Water Act 2020 (KPWA, 2020) through the provincial assembly on 24 July 2020. The Act commits the GoKP to establish the KP Water Resources Commission (KP-WRC) and KP Water Resources Regulatory Authority (KP-WRRA) within six months after the passage of this Act. This is a commendable shift as the preamble states, 'comprehensively manage and regulate' the province's water resources 'in the interest of conservation and sustainability' (KP Water Act, 2020). The first meeting of the KP-WRC was held in 2021. It is a 22-member body headed by the chief minister of the province including public and private representation. KP-WRC can further include

co-opted members as it may deem appropriate. KP-WRRA is a 12-member body headed by the additional Chief Secretary of KPK. The Acting Director-General for the KP-WRC is the Secretary of Irrigation and the Acting Director-General for the KP-WRRA is Chief Engineer North. Section (4) of the Act clearly mentions that 'Nothing shall be construed as relieving any water service provider of the obligations to develop water resources for the purpose of any duty imposed on it by virtue of the Act'. This means the existing laws and regulations will hold and the obligations of the departments under those laws will stand even after the passage of this Act. The Rules of Business for both KP-WRC and KP-WRRA are currently being drafted and a plan is being put in place to fund its operations and staffing.

For the most part, this legislation does not address some of the key deficits in institutions and processes adopted to date, particularly with regard to farmer institutions. The Act is not limited to the provision and management of irrigation water but to the management of the province's overall water supplies, drainage, sewerage and other patterns of use. Under the Act, the Commission will have the power to allocate water across seven sectors and purposes (Sec. 43(2)), including for ecological purposes, and will be free to work out the ways and methods by which it undertakes reallocations (Sec. 4 (a)(b)). Overall, under Sec. 4 (c) it will be empowered to work out what it deems the 'proper' use of the province's water resources. The concept of 'proper' will shift depending on the perspective of the party advocating a particular allocation and so it will be crucial for GoKP to lay out at the earliest its concept of 'proper' as well as the mechanism the Commission will use in developing its view of the matter. This is especially important as the Commission will determine the allocations between sectors annually, and given the criteria it will use, the allocations between existing uses may shift. Given the stakes of changing allocations between sectors, it is necessary that the criteria for shifts are transparent and available at the earliest time such that parties and sectors can make informed decisions. Given that the Act's proposed model is one in which the Commission or the Authority (see First Schedule for Sec. 43) will authorize service providers for various sectors and purposes, perhaps the process of taking account of competing purposes can be evaluated

from the start at the point of authorization of the service-providing entity.

The KPK Irrigation and Drainage Authority Act of 1997 also envisaged farmers organized in area water boards, farmer organizations, and water user associations as service providers to their community. It is pertinent for the KP-WRRA to re-examine the implementation of the PIDA reforms in KP province and devise a mechanism whereby farmers' participation may be ensured. It is in the mandate of KP-WRRA to approve, determine or revise tariffs for water as well as for service providers. This has been highlighted as an issue in the implementation of the PIDA reforms. Perhaps KP-WRRA can play an instrumental role in bringing clarity to the roles and responsibilities of the existing PIDA and inclusion of stakeholder farmers in the decision-making process.

In Pakistan, the irrigation management transfer and decentralization of the irrigation reform process over the last four decades has been built on the recognition that enabling and preserving farmer participation and involvement in self-governance, particularly in the operation and maintenance of the irrigation network, is a valuable public good. However, any reform effort must contend with existing institutional structures and political economy influences as they operate in practice versus how an idealized design may operate in theory.

The KPK Water Act of 2020 does not address or even mention the issue of shared water resources between Afghanistan and Pakistan. Nevertheless, it is hoped that KPK-WRC will be able to advise the federal government on the allocations of water coming from the western transboundary rivers shared between Afghanistan and Pakistan. This will provide the KPK government with an avenue to work with the federal government and create a co-operation mechanism on the Indus waters coming from the three rivers shared between Afghanistan and Pakistan that fall within the jurisdiction of the Government of KPK. [Table 8.5](#) enlists the responsibilities of the KPK government for water resource governance.

The KPK Water Act (2020) has placed matters related to groundwater extraction and regulation under the KPK Water Resources Commission and the KPK Water Resources Authority. According to the new Act, all users are required to obtain a

Table 8.5. Responsibilities of KPK government for water resource governance.

Legislation	Institution responsible
KPK Canal and Drainage Act 1873	KPK Irrigation Department
KPK Rules of Business 1985	Environment Department KPK Irrigation Department Local government Public Health and Engineering Department
KPK Irrigation and Drainage Authority Act 1997	KPK Irrigation and Drainage Authority
KPK Forest Ordinance 2002	Provincial government
KPK Integrated Water Resource Management Board Ordinance 2002	KPK Integrated Water Resource Management Board
KPK River Protection Ordinance 2002	Provincial government
KPK Local Government Act 2013	Local governments at the district, tehsil and village levels
KPK Environmental Protection Act 2014	KPK Environmental Protection Council KPK Environmental Protection Agency
KPK Water Act 2020	KPK Water Resources Commission KPK Water Resources Authority

licence for groundwater extraction (KPK Water Act, Ch. 8). The charges for the water used are to be regulated by the Water Resources Authority. The creation of the KPK Water Resources Commission is promising more integrated management of groundwater and better control over abstraction. However, almost two years after the approval of the KPK Water Act of 2020, its implementation is still being planned.

The Challenges of Federalism in Water Governance in Pakistan

The above analysis of Pakistan's legal provisions for water resource governance at the federal and provincial levels reveals the complexity of water management posed by federalism. The range of federal and provincial institutions for water governance often results in overlaps in institutional functions or gaps in the governance of water.

As discussed earlier, the control and governance of water, as per the Constitution, lies with the provinces. In contrast to this general rule is the exception of the Council of Common Interests, the Water and Power Development Authority and the Indus River System Authority. The Council of Common Interests can set the policy of the Water and Power Development

Authority, which, in turn, by law, has the power to develop hydropower resources and underground water resources in any region of the country. To this extent, therefore, the federal government can still set policy on the subject of water. The federal Rules of Business support this proposition, with the Ministry of Water and Power responsible for the development of water and power resources, the Indus Waters Treaty 1960, the Water and Power Development Authority, the Indus River System Authority, as well as the Pakistan Transborder Water Organization.

The Indus River System Authority regulates the supply of surface water in accordance with the Water Accord. However, it is not concerned with groundwater. Abstractions from the Kabul river in Afghanistan will result in reduced flows in the Kabul river in Pakistan and, in turn, in the manner of allocating the shares of the provinces to the limited supply of water in the Indus river. IRSA does have the statutory authority to direct the Water and Power Development Authority, but it is doubtful such authority would be recognized if it is in conflict with a policy decision of the Council of Common Interests on the same subject.

Federal law in Pakistan also recognizes a number of personal rights in water arising from

the ownership and use of property. These individual water rights are effective against private parties but cannot be enforced against water being diverted or used by the government.

At the provincial level, legal and institutional provisions for water governance are well developed but face issues of overlapping jurisdictions and gaps in implementation. Often, new laws have superseded old laws, but it has not been stated that the old laws have been repealed. The control of water resources in the province of KPK is the responsibility of several departments created by old and new laws. While the Irrigation and Drainage Authority was created for the equitable and efficient use of water resources through the area water boards and farmers' organizations, in practice the Authority is not functional. There is a Khyber Pakhtunkhwa Integrated Water Resources Management Board with considerable powers that, if collectively exercised, could help with integrated water resource management in the province. However, the Board has largely been defunct in recent times. The KPK Water Resources Commission has been mandated under the KPK Water Act of 2020 to look after many of the functions that were originally specified under the KPK Integrated Water Resources Management Board.

The recently formed KPK Water Resources Commission and the KPK Water Resources Regulatory Authority try to embody a holistic approach towards the management of water resources in the province. However, since these institutions have been constituted recently, their efficacy with regard to water governance remains to be seen. The relationship between the recent KPK Water Act 2020 and the newly constituted KPK Water Resources Commission with existing institutions and laws related to water governance in KPK is also unclear.

In line with the challenges posed by federalism for water governance in Pakistan, groundwater governance is a key challenge that needs to be addressed. The National Water Policy 2018 called for the creation of a groundwater authority in Islamabad as well as water authorities within the provinces. However, more than three years into the policy's enactment, there has been little progress on its promise of sustainable groundwater governance. While IRSA and the Council of Common

Interests have a mandate over interprovincial water distribution, groundwater governance is not completely or clearly allocated to any institution. The KPK Water Act (2020) places all provincial water resources, including groundwater, under the control of the KPK Water Commission and the KPK Water Authority. This provides an opportunity for integrated management of groundwater resources, yet the challenge lies in the implementation of the Act.

Strengthening, Co-ordinating and Engaging Internal Governance for Improved Transboundary Water Co-operation

In recent years, there has been an increased effort within both Afghanistan and Pakistan to overhaul water governance. On the Pakistan side, there has been a progressive move towards better water governance at the federal and provincial levels exemplified by the country's efforts in enacting its first ever National Water Policy, as well as in the recent KPK Water Act of 2020. On the Afghanistan side, the Afghanistan Water Law (2009) and the Water Affairs Management Law (2020) signal the country's commitment to integrated water resource management and a river basin approach towards the governance of its water resources.

There are considerable similarities in the composition of internal water governance mechanisms within Afghanistan and Pakistan. While both countries have a range of formal national institutions and legal mechanisms for water governance, there is considerable reliance on local informal institutions for managing water. While the reliance on informal institutions is more pronounced in Afghanistan, customary water management is also prevalent in the tribal belt in the province of KPK in Pakistan.

Both Afghan and Pakistani water laws are primarily focused on surface water. While there are provisions in the laws of both countries that regulate the use and control of groundwater, neither country has any reliable data on the share of aquifers fed by the Kabul, Kurram and Gomal rivers. International transboundary

water law emphasizes the need for co-basin states to treat ground and surface water conjunctively while negotiating any transboundary water sharing arrangement.

There is a need for improved co-ordination of national water governance policies in Afghanistan and Pakistan as stepping-stones to effective transboundary co-operation in the shared basins. As it stands, Afghan water governance is centralized with a river basin approach, deployment of river basin councils and sub-basin councils in line with the principles of integrated water resource governance (Shams and Muhammad, 2023). Water is a provincial subject in Pakistan, with the exception of the federal authority for the Council of Common Interests, WAPDA and IRSA to intervene in relevant matters. Federalism in Pakistan's water governance poses critical challenges to effective water governance both within the country and in its transboundary relationship with Afghanistan.

Afghan water law differs from Pakistani water law in that it would explicitly approach any arrangement on shared rivers using the river basin approach. This is distinct from the transboundary arrangements reached earlier in the Helmand River Treaty and the Indus Water Treaty, neither of which can be said to have employed a river basin approach. The former guarantees Iran a share of water from the Helmand and the latter divides the waters of the major tributaries of the river Indus between India and Pakistan but not between Afghanistan and Pakistan. Pakistani law is silent on how it would approach sharing water and has so far been accustomed to a division of water resources approach as evidenced in its relationship with India over the Indus Water Treaty since 1960. The Irrigation and Drainage Authority in KPK is required to ensure 'optimal utilization' of water on an 'equitable and efficient basis' but is not functional in practice. The recently established KPK Water Commission is silent on the issue of transboundary waters of the western transboundary river basins.

While efforts have been made to overhaul formal legal provisions and internal water governance in both countries, these have been stymied by implementation gaps and political economy issues. On Afghanistan's side, the recent implementation of well-meaning reforms

has been stymied by a change in the political regime. On the Pakistan side, the National Water Policy 2018 still awaits implementation almost three years after its enactment. Similarly, the relationship of the KPK Water Commission with existing institutions for water governance in the province is unclear, as well as the Commission's mandate to contribute to any transboundary water sharing agreements on the Kabul, Kurram and Gomal river basins.

Engaging multilevel stakeholders for improved co-ordination of water policies between Afghanistan and Pakistan can pave the way towards successful transboundary basin management in the Kabul, Kurram and Gomal river basins. There is an active debate in Pakistan to establish a mechanism of water sharing between Afghanistan and Pakistan on the western transboundary river basins, particularly the Kabul river basin (e.g. Basin, 2010; Shah and Nafees, 2020). In this regard, the role of the Pakistan Commission for Indus Waters (PCIW) becomes extremely important. There are some major changes in the PCIW which are currently being considered to address the issue of water sharing between Afghanistan and Pakistan. The Pakistan Commission for Indus Waters (PCIW) is part of the Permanent Indus Commission, which is a bilateral commission consisting of officials from India and Pakistan and was created to implement and manage the goals and objectives of the Indus Waters Treaty. The Commission maintains and exchanges data and facilitates co-operation between the two countries. Recently, its mandate has been proposed to be expanded to cover the other transboundary tributaries of the Indus with a change in name to the Pakistan Commission for Indus and Transboundary Waters. Under the newly proposed organization, three cells operate under the Pakistan Commission for Indus and Transboundary Waters. The Indus Water Cell, Research Cell and the Kabul River (Afghan) Cell. All matters pertaining to the western transboundary river basins, particularly the Kabul river, will be dealt with by the Afghan Cell. The cell will be supported by a joint commissioner, a deputy commissioner and an assistant commissioner dedicated to this cell. The summary for the new organization has been approved and the human resource required to take on these roles is being recruited. It is expected that once

these cells are fully resourced, it will allow the Commission to develop a more comprehensive strategy to deal with the affairs of the western transboundary river basins shared between Afghanistan and Pakistan.

Any efforts at transboundary co-operation will need an appreciation of the multi-scalar nature of transboundary basin management and the need to engage national, subnational and local institutions and stakeholders. The authority to engage in bilateral negotiations on the Kabul, Kurram or Gomal rivers would have to originate from the governments of both countries through their respective ministries of foreign affairs, before any agreement could be reached on water sharing or allocation in any transboundary river. This provides an opportunity for reliable data about water flow in the rivers and their tributaries to be made available

to both sides. The collection of such data on the Afghanistan side would primarily be the responsibility of the Ministry of Energy and Water and the Ministry of Agriculture, Irrigation and Livestock. The collection of such data in Pakistan would be the responsibility of the Khyber Pakhtunkhwa Irrigation and Drainage Authority, the Water and Power Development Authority and the Indus River System Authority.

How water is managed at the local, provincial and national levels has an important bearing on the water governance at the shared-basin level. Ultimately, meaningful transboundary co-operation cannot be achieved – even if Afghanistan and Pakistan enter into an agreement on the shared river basins – if internal water governance is not aligned towards achieving the benefits of co-operation (Sadoff and Grey, 2002).

Notes

¹ There were no provincial laws on water that were identified during research for this paper.

² Article 2347 of the Afghanistan Civil Code (1977).

³ Articles 2346–2347, *Ibid.*

⁴ Article 2349, *Ibid.*

⁵ Article 2353, *Ibid.*

⁶ Article 2348, *Ibid.*

⁷ Article 2352, *Ibid.*

⁸ Article 2350, *Ibid.*

⁹ Article 2351, *Ibid.*

¹⁰ Article 1, Environment Act (2007).

¹¹ Article 4(10), *Ibid.*

¹² Article 34(1), *Ibid.*

¹³ Article 34(2), *Ibid.*

¹⁴ Article 35, *Ibid.*

¹⁵ Preamble to Afghanistan's Water Law (2009).

¹⁶ Article 2, *Ibid.*

¹⁷ Article 40, *Ibid.*

¹⁸ Article 4, *Ibid.*

¹⁹ Article 5, *Ibid.*

²⁰ Article 6, *Ibid.*

²¹ Article 7, *Ibid.*

²² Article 8, *Ibid.*

²³ Articles 10 and 11, *Ibid.*

²⁴ Article 12(1), *Ibid.*

²⁵ Article 12(2), *Ibid.*

²⁶ Article 14, *Ibid.*

²⁷ Article 18, *Ibid.*

²⁸ Article 16, *Ibid.*

²⁹ Article 18, *Ibid.*

³⁰ Article 23, *Ibid.*

³¹ Article 24, *Ibid.*

- ³² Article 25, Ibid.
- ³³ Article 27, Ibid.
- ³⁴ Article 34, Ibid.
- ³⁵ Article 35, Ibid.
- ³⁶ Rasooly, 2019
- ³⁷ Rasooly, 2019
- ³⁸ https://winrock.org/wp-content/uploads/2021/08/Afghanistan_Country_Profile-Final.pdf
- ³⁹ https://winrock.org/wp-content/uploads/2021/08/Afghanistan_Country_Profile-Final.pdf
- ⁴⁰ Personal communication (Afghanistan water resource governance specialist)
- ⁴¹ Article 142 of the Constitution of Pakistan. Note that Article 142(b) allows both parliament and provincial assemblies to make laws with respect to criminal law, criminal procedure and evidence.
- ⁴² Article 97 of the Constitution of Pakistan.
- ⁴³ Article 137 of the Constitution of Pakistan.
- ⁴⁴ Section 8(1) of the Water and Power Development Authority Act 1958.
- ⁴⁵ Section 4 of the Easements Act 1882
- ⁴⁶ Section 2(a) of the Easements Act 1882.
- ⁴⁷ Preamble of the Water and Power Development Authority Act, 1958.
- ⁴⁸ Section 8(1) and 8(2) Ibid.
- ⁴⁹ Section 11(1)(i)(a) Ibid.
- ⁵⁰ Section 11(2) Ibid.
- ⁵¹ The Rules were made in 1973 but most recently updated in 2015 to reflect change post-18th Amendment.
- ⁵² Paragraph 13 of the Water Apportionment Accord (1991). The Indus Rivers System Authority was established under the Indus Rivers Systems Authority Act 1992 (discussed in section on Water Apportionment Accord (1991) above).
- ⁵³ See paragraph 14(b), Ibid.
- ⁵⁴ Ibid., p. 23.
- ⁵⁵ Section 8 of the Indus Rivers Systems Authority Act 1992.
- ⁵⁶ National Water Policy 2018, p. 5.
- ⁵⁷ National Water Policy 2018, p. 15.
- ⁵⁸ Preamble to the Khyber Pakhtunkhwa Canal and Drainage Act 1873.
- ⁵⁹ Preamble to the Khyber Pakhtunkhwa Irrigation and Drainage Act 1997.
- ⁶⁰ Section 8, Ibid.
- ⁶¹ Personal communication, KPK Irrigation Department
- ⁶² Section 33(2)(g) Khyber Pakhtunkhwa Forest Ordinance 2002
- ⁶³ Section 36(1)(v) Ibid.
- ⁶⁴ Section 44(g) Ibid.
- ⁶⁵ Section 8 of the Khyber Pakhtunkhwa River Protection Ordinance 2002
- ⁶⁶ Sections 10 and 11, Ibid.
- ⁶⁷ Section 2(r) of the Khyber Pakhtunkhwa Local Government Act 2013
- ⁶⁸ No. 4, Part II, Third Schedule, Ibid.
- ⁶⁹ Section 29 Ibid.
- ⁷⁰ Preamble to the Khyber Pakhtunkhwa Environmental Protection Act 2014
- ⁷¹ Section 2(r), Ibid.
- ⁷² Sections 6(1)(v), (vi) and (vii) Ibid.
- ⁷³ Section 2(eee) Ibid.

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