

Disparity in Environmental Regulations Applicable to CPEC Projects

Hassan Bukhari, Teaching Fellow, School of Humanities and Social Sciences
Information Technology University

1 Abstract:

There is a wide disparity between the environmental standards that China Pakistan Economic Corridor (CPEC) projects in Pakistan must legally meet. Environmental regulations binding on CPEC projects range from the highest international standards (where CPEC projects are responsible for introducing the best environmental practices into the country and setting precedent for future projects), to little or no environmental standards (where CPEC projects may lead to significant environmental degradation).

This paper first briefly introduces the various applicable environmental laws and regulations that may be applicable to large infrastructure projects in Pakistan. These include Pakistani environmental law, international standards prescribed by international financing institutions, and environmental treaties that Pakistan is a party to.

The decision on the stringency of environmental standards applicable to each CPEC project are set by: Provincial Environmental Protection Agencies, co-financing banks, Chinese sponsor companies, Pakistani sponsors companies, or a combination of the above. Using case studies of approved and under-construction CPEC projects, the paper describes the extent of the disparity of applicable environmental standards between projects and the possible reasons that may cause this difference.

Lastly, the paper provides recommendations to promote the implementation of uniform and sufficient environmental regulation across CPEC projects in the country.

2 Introduction

The CPEC is a \$62 billion-dollar investment into infrastructure projects in Pakistan. A large proportion of this investment is earmarked for power projects¹, which is an important investment for Pakistan, where industry and society has been crippled² due to frequent blackouts and load shedding with power shortfalls reaching 50% of energy demand in recent years.³

CPEC projects are often talked with blanket terminology, however, each project is led and financed by a unique combination of project sponsors and financiers. Each project, even adjacent hydropower projects or coal power plants, have different implementation results due to differences in management, ownership, and lending structures. This difference is especially visible in terms of the environmental standards adopted by each CPEC project.

¹ Malik, Ahmad Rashid (7 December 2015). "A miracle on the Indus River". *The Diplomat*. Retrieved 11 December 2015.

² Kugelman, Michael (9 July 2015). "Pakistan's Other National Struggle: Its Energy Crisis". *The Wall Street Journal*. Retrieved 11 December 2015.

³ Ibid.

This paper highlights the causes of this difference which the author believes originate from the following:

- ☞ Each provincial Environmental Protection Agency has jurisdiction over its respective province. The capacity and willingness of the EPA may determine the level of environmental standards.
- ☞ Most Chinese companies and banks involved in large projects in Pakistan are state owned and therefore, can be said to generally follow Chinese state policy. Nevertheless, they each have their own distinct culture and modus operandi.
- ☞ The aforementioned is also true for projects which have a Pakistani Sponsor, as different Pakistani companies or government bodies adopt different policies and practices.
- ☞ If International Financing Institutions are involved in financing, then their standards are implemented on the project.

3 Framework for Environment Regulation

This section introduces the Pakistani laws and governing bodies, international financing standards and Chinese banking standards pertaining to environmental regulation.

3.1 Pakistani Laws and Governing Bodies

Pakistani regulation regarding environmental protection of impacts from large infrastructure projects is based on the environmental assessment which is reviewed and approved by the provincial Environmental Protection Agencies.

3.1.1 Environmental Protection Agencies and the 18th Amendment

One of the key components of the 18th Amendment to the Constitution, passed by the parliament in 2010, was devolution of power from the federal to provincial governments. Through this amendment, the concurrent legislative list of the constitution was abolished, and all legislative powers on subjects included in the concurrent legislative list, which included environmental protection, were transferred to the provinces. Previously, the key national environmental legislation was the Pakistan Environmental Protection Act (PEPA 1997). After devolution through the 18th Constitutional Amendment 2010, the provinces were given sole authority and responsibility to legislate on 'environment and ecology'. In this respect the following acts, largely based on PEPA 1997, were passed by the provinces:

- Balochistan Environmental Protection Act, 2012
- Punjab Environmental Protection Act 1997, (Amended 2012)
- Khyber Pakhtunkhwa Environmental Protection Act, 2014
- Sindh Environmental Protection Act, 2014

The Azad Jammu and Kashmir Environmental Protection Act 2000 is the principal legislative tool used for regulating environmental protection in the state of Azad Jammu and Kashmir.

3.1.2 Environmental Assessment Reports

Environmental Assessments (EA) are one of the most important legal documents that govern the environmental practices of a specific project⁴. An EA should contain all the possible impacts that may occur due to a project and should provide measures to mitigate negative impacts and enhance positive impacts. It also should present an environmental management plan that lists when these mitigation measures will be implemented, who is responsible for their implementation, along with an estimated budget.

The requirements for EAs of infrastructure projects is laid out in the various provincial environmental acts where it is made mandatory that the project proponents must prepare an environmental impact assessment (EIA) or an initial environmental examination (IEE) for the proposed project and obtain approval of the same from the corresponding EPA.

When an EPA grants approval after the review of the EIA, the approval (or No Objection Certificate) is granted based on the implementation of the measures as listed within the EIA report. Thereby, the mitigation measures in the EIA report become legally binding onto the project management.

Very limited guidelines are available about preparing environmental assessment in Pakistan. The Pakistan EPA has prepared several environmental guidelines which the provincial EPAs have adapted for their use that include:

- ⊗ Guidelines for the Preparation and Review of Environmental Reports, Pakistan Environmental Protection Act (PEPA), 1997
- ⊗ Guidelines for Public Consultation, Pakistan Environmental Protection Act (PEPA), 1997
- ⊗ Review of Initial Environmental Examination and Environmental Impact Assessment Regulations 2000

Furthermore, the capacity of the newly empowered EPAs is limited and at times, unable to provide a thorough technical review of the EA. Therefore, the quality and detail of the EA is voluntarily driven by the project sponsors or lenders. Consequently, the corresponding mitigation measures that are then legally binding on the project after approval by the EPA of this assessment have a wide variability. This means that there is strict review and oversight on projects that voluntarily report the various negative impacts of their project, whereas projects that choose not to do a thorough environmental assessment can easily slip through the cracks of the approval process.

3.2 International Financing Institutions

Along with the provincial EPAs that require and review EAs, International Financing Institution (IFI) also require and review EAs of projects that they intend to finance. Each IFI has different environmental standards and they vary in strictness: International Finance Corporation⁵ (IFC) environmental standards are industry leaders and are discussed below. Other IFIs such as the

⁴ Defined in the AJKEPA 2000 as “any activity, plan, scheme, proposal or undertaking involving any change in the environment and includes: (a) construction or use of buildings or other works; (b) construction or use of roads or other transport systems; (c) construction or operation of factories or other installations; (d) mineral prospecting, mining, quarrying, stone-crushing, drilling and the like; (e) any change of land use or water use; and (f) alteration, expansion, repair, decommissioning or abandonment of existing buildings or other work, roads or other transport systems, factories or other installations”

⁵ IFC is a sister organization of the World Bank and member of the World Bank Group

Asian Development Bank (ADB), Asian Infrastructure Investment Bank (AIIB), and the Japanese International Cooperation Agency (JICA) also have high environmental standards. Lastly, the Islamic Development Bank (IDB), and Chinese Banks do not have strict standards and often their environmental policies are not easily accessible.

3.2.1 IFC PS on Social and Environmental Sustainability

IFC's Environmental and Social Performance Standards (PS) apply to all projects financed by IFC and defines the responsibility of project proponents for managing their environmental and social risks. There are eight PS, last released in 2012. Together, they establish standards that the IFC's client are required to meet throughout the project life.

The applicability of these PS is established during the Social and Environmental Impact Assessment process, while implementation of the actions is necessary to meet the requirements of IFC, the PS are managed through the owner's ESMS.

- PS 1 Social and Environmental Assessment and Management System
- PS 2 Labor and Working Conditions
- PS 3 Pollution Prevention and Abatement
- PS 4 Community Health, Safety and Security
- PS 5 Land Acquisition and Involuntary Resettlement
- PS 6 Biodiversity Conservation and Sustainable Natural Resource Management
- PS 7 Indigenous Peoples
- PS 8 Cultural Heritage

Other IFC Guidelines

Other guidelines developed by IFC include general Environmental Health Safety (EHS) guidelines along with content specific guidelines for cumulative impact assessment, and land acquisition.

- ☞ **Land Acquisition Handbook:** Involuntary resettlement may entail both the physical displacement of people and the disruption of their livelihoods. The purpose of the IFC Handbook for Preparing a Resettlement Action Plan is to provide guidance in the planning and execution of involuntary resettlement associated with IFC investment projects. IFC's policy on involuntary resettlement applies to any project that may result in the loss of assets, the impairment of livelihood, or the physical relocation of an individual, household, or community.
- ☞ **EHS General and Industry Specific Guidelines:** The EHS Guidelines are technical reference documents with general and industry-specific examples of good international industry practice (GIIP). The General EHS Guidelines consist of Environmental, Occupational Health and Safety, Community Health and Safety, and Construction and Decommissioning components.
- ☞ **Cumulative Impact Assessment (CIA) Guidelines:** IFC's Good Practice Handbook of Cumulative Impact Assessment and Management: Guidance for the Private Sector in Emerging Markets, describes the need and presents guidelines for an effective CIA. It

recognizes that in some instances, private sector developers need to consider cumulative effects in their identification and management of environmental and social impacts and risks. Although the total cumulative impacts due to multiple projects typically should be identified in government-sponsored assessments and regional planning efforts, according to PS 1, IFC clients are expected to ensure that their own assessment determines the degree to which each project under review is contributing to the cumulative effects.

3.3 Chinese Financing Institutions

The Export-Import Bank of China (EIBC) and the China Development Bank (CDB) now provide more financing to developing countries than the World Bank⁶. Furthermore, Chinese loans do not come with conditions⁷ such as trade liberalization and fiscal austerity that western backed finance is typically associated with.

Although Chinese banks have historically avoided committing to international standards, some banks are beginning to warm up to the idea, as more and more banks establish a global presence. The environmental policies of selected Chinese banks are given below:

- ☞ **Export-Import Bank of China:** The *Guidelines for Environmental and Social Impact Assessments of the China Export and Import Bank's Loan Projects* specify that social and environmental impact assessment is required for overseas projects, and that borrowers must follow laws and regulations of the host country.⁸
- ☞ **China Development Bank (CDB):** The CDB's target is "to become the world's first-class development finance institution (to provide the foundation for sustaining economic, social and environmental sustainable development and ultimately achieve common development)" Unfortunately, many of CDB's policies and their content are publicly unavailable.
- ☞ **Industrial and Commercial Bank of China (ICBC):** The ICBC is the largest bank in the world by total assets.⁹ In 2008 ICBC was the first Chinese Bank to adopt the Equator Principles, an international set of social and environmental standards for financial institutions. However, international environmental groups have criticized ICBC for failing to adhere to its social environmental standards and of being hypocritical.¹⁰

Environment-related political risk can severely affect the bottom line of major Chinese development banks to the extent that local skepticism and protests result in delays or even loss of projects. Doing the right thing on the environment and human rights would help maintain China's market access and help mitigate risks to China's development banks.¹¹

⁶ http://www.ase.tufts.edu/gdae/policy_research/NewBanks.html

⁷ <http://www.brettonwoodsproject.org/2005/08/art-320869/>

⁸ "Guidelines for Environmental and Social Impact Assessments of the China Export and Import Bank's Loan Projects", China Export-Import Bank. <https://www.internationalrivers.org/resources/guidelines-forenvironmental-and-social-impact-assessments-of-the-chinaexport-and-import>

⁹ ICBC overtakes Wells Fargo as world's most valuable bank brand". South China Morning Post Retrieved May 4, 2017

¹⁰ Ethiopia Dam Blot on China's Aid Record". South China Morning Post, Hong Kong. 7 June 2010. Archived from the original on 28 March 2014. Retrieved 2 September 2012.

¹¹ <https://www.theguardian.com/global-development/poverty-matters/2013/jul/10/china-development-banks-environment>

3.4 International Conventions and Obligations

A list of international conventions applicable to Pakistan and focus on biodiversity issues is given in **Table 1**. With shared goals of conservation and sustainable use of biological resources, the biodiversity-related conventions work to implement actions at the national, regional and international level. In meeting their objectives, the conventions have developed a number of complementary approaches (site, species, genetic resources and/or ecosystem-based) and operational tools (e.g., programs of work, trade permits and certificates, multilateral system for access and benefit-sharing, regional agreements, site listings, funds).

The AJKEPA 2000 recognizes that it is necessary to fulfil the obligations envisaged under the biodiversity related Multilateral Environmental Agreements ratified by the Government of Pakistan.

Table 1: International Agreements on Biodiversity and Pakistan's Status

<i>Convention</i>	<i>Date of Treaty</i>	<i>Entry into Force in Pakistan</i>
Indus Water Treaty	1960	12 Jan 1961
Convention on Biological Diversity	1993	26 Jul 1994
Convention on International Trade in Endangered Species of Wild Fauna and Flora	1975	19 Jul 1976
Convention on Conservation of Migratory Species	1979	01 Dec 1987
Convention on Wetlands of International Importance especially as Waterfowl Habitat	1971	23 Nov 1976
Convention Concerning the Protection of the World Cultural and Natural Heritage	1972	08 Dec 2011

4 Case Study: Hydropower Projects (HPPs) in the Jhelum River Basin

The hydropower developments in the Jhelum River Basin upstream of Mangla Dam make for an interesting case study of the difference in environmental standards of CPEC projects for several reasons. Firstly, it is bifurcated into three EPA jurisdictions, namely: Khyber-Pakhtunkhwa (KPK) EPA that covers most of the Kunhar River, the Punjab EPA that covers the western bank of the lower part of the Jhelum River up till Mangla Dam and the Azad Jammu and Kashmir (AJK EPA) that covers the remaining portion within Pakistan. The Jhelum Basin also falls within India and therefore, Indian environmental standards and international tribunals also play a role, such as the rulings on the Kishanganga dam¹² by the International Court of Arbitration.

The various upcoming hydropower projects in this basin are listed in **Table 2** and shown in **Figure 1**. **Figure 1** also shows the provincial boundaries and the line of control which illustrate the jurisdiction of the various EPAs.

4.1 Main Environmental Issues in a River Ecosystem

The main environmental areas of concern for run of the river hydropower projects are as follows:

- ☞ **Diversion of River Water:** Water from the reservoir is often diverted through a diversion tunnel that can be several kilometers long to the powerhouse. Due to this diversion the river reach downstream of the weir is dewatered. To mitigate the complete loss of life in this dewatered reach a minimum amount of water is not diverted to the powerhouse and instead released downstream of the weir as an environmental flow release. The decision on the environmental flow release is a point of contentious negotiations between the developers, environmental regulators, NGOs, fish and wildlife departments and local communities. Higher environmental flow releases are better for the ecosystem however they reduce the amount of electricity generated by the project.
- ☞ **Peaking Flows:** HPPs may store water during the day in the dry season and use it for electricity generation during peak hours. This peaking operation results in lower than dry season flows during the day due to storage and almost flood season flows during the peak hours when all the water stored during the day is released over a few hours. This daily fluctuation in flows is very detrimental to the fish and fauna that are less active in the cold dry season and cannot cope with daily large flushing flood flows. Good environmental practice reduces peaking or operates the HPP as a baseload plant¹³.
- ☞ **Impoundment or Reservoir:** HPPs in the Jhelum River basin can have reservoirs that stretch for tens of kilometers. This is especially true of the main stem of the Jhelum River, where tall weir heights and narrow valleys result in reservoirs that stretch for many kilometers behind the weir wall. Native river species are not adapted to lake like conditions that exist in a reservoir, whereas alien species that prefer clear still water can thrive in the reservoirs thus upsetting the natural balance. Large reservoirs also have large resettlement requirements. Good practices involve considering design options that minimize the size of the reservoir.

¹² The Kishanganga Dam is in Indian Administered Kashmir and diverts water from the Neelum River to the Jhelum River.

¹³ In baseload hydropower schemes all water entering the HPP is released with no storage.

- ☞ **Fishing and Mining:** There is a lot of illegal fishing and sand mining that takes place in the local rivers which are decimating the river ecosystems. Good practice includes providing funds for protection of the rivers to offset impacts due to the project.

4.2 Environmental Attitudes of Main Stakeholders in the Jhelum Basin

4.2.1 Chinese Sponsors

It can be noted from **Table 2** that there are two Chinese companies involved in most CPEC projects in the Jhelum Basin. These are namely China Three Gorges South Asia Investment Limited (CSAIL) and China Gezhouba Group Co Limited (CGGC). The environmental stance of these companies is described below:

4.2.2 China Three Gorges South Asia Investment Limited (CSAIL)

CSAIL is a subsidiary and investment arm of the China Three Gorges Corporation, a Chinese state-run firm. CSAIL is planning to invest \$7 billion in Pakistan. CSAIL has already completed a 50 MW wind farm and has six other renewable projects in its pipeline, including three large hydropower projects (as shown in **Table 2**).

IFC World Bank equity ownership in CSAIL

In 2015 the IFC agreed to acquire a 15 percent stake in CSAIL. IFC's investment in CSAIL forms an integral part of the World Bank Group's 'Transformational Energy Initiative' for Pakistan, which aims to mobilize investments of up to \$10 billion over the next five years to address the country's power shortage.¹⁴ IFC equity ownership of CSAIL requires CSAIL projects to implement IFC Performance Standards.

IFC has taken precautions to mitigate key risks that they have quantified as the following: cumulative impacts on biodiversity, including potentially eliminating the Golden Mahaseer fish population, and extinction of the Kashmir Catfish. The IFC's solution is the assessment of impact on an entire region and interconnected ecosystems; multi-stakeholder effort to develop a common and all-encompassing approach to environmental and social risk management for all hydro power plants in the Jhelum Poonch River basin including funding basin wide environmental assessments and capacity building. A June 2016 headline on the IFC website reads "How Two Fish are Changing Hydropower in Pakistan" demonstrates the impact of the environmental considerations on decisions related to hydropower.¹⁵

CSAIL has developed a corporate environmental and social management system (ESMS) in line with IFC's PS and international good industry practice. The ESMS articulates CSAIL's overarching environmental and social policies, objectives, principles, procedures, and sustainable measures to achieve sound and sustainable environmental and social performance.

¹⁴ IFC and China Three Gorges Corporation to Address Power Shortage in Pakistan Retrieved April 02, 2018, from <https://ifcext.ifc.org/ifcext%5Cpressroom%5CIFCPressRoom.nsf%5C0%5C3309592B37A2384985257E2F00353D52>

¹⁵ How Two Fish Are Changing Hydropower in Pakistan. (n.d.). Retrieved April 02, 2018, from http://www.ifc.org/wps/wcm/connect/news_ext_content/ifc_external_corporate_site/news%20and%20events/news/ho w%20two%20fish%20are%20changing%20hydropower%20in%20pakistan

All CSAIL projects in the Jhelum Basin, namely the Kohala HPP, Mahl HPP and Karot HPP are planned at the highest international level of environmental standards. Environmental assessments of these projects are reviewed and approved by the regional IFC board. Projects that are in critical habitat or natural habitat must display net gain or no net loss for those respective species. These projects also include integrated watershed management and detailed assessments to determine what level of environmental flow should be released downstream of their weir. These projects have also budgeted funds to protect the river from illegal fishing activities to offset possible losses caused by their projects.

4.2.3 China Gezhouba Group Company Limited (CGGC)

CGGC is a transnational corporation under the jurisdiction of the State-owned Assets Supervision and Administration Commission of the State Council of China. Its business scope covers water conservancy, hydropower, thermal power, nuclear power, wind power, electromechanical installation, power transmission and transformation, highways, railways, bridges, municipal works, airports, ports, waterways, the design, construction of and investment in industrial and civil buildings, as well as real estate development, the production of cement, civil explosives, machine manufacturing and shipbuilding. With strong financing capability, CGGC it has expanded its business in more than 100 countries and regions. CGGC has invested in more than 20 hydropower stations and thermal power stations.

CGGC Environmental Standards

International Rivers, states that CGGC has “*vague social responsibility commitments*”¹⁶ whereas the website *Kings of Coal* states that CGGC does not have a public grievance mechanism and does not publish much information about its staff on its website.¹⁷ Projects undertaken by CGGC, namely the Neelum Jhelum HPP and the Suki Kinari HPP, have low environmental standards and have conducted sub-standard environmental assessments. For example, both projects have minimal environmental flow release, high peaking flows and have not set aside funds for intergrated watershed management or protection of river ecology to offset impacts caused by them.

4.3 Pakistani Sponsors

4.3.1 Water and Power Development Authority (WAPDA)

WAPDA is a government-owned public utility which maintains water and power resources in Pakistan. WAPDA assets include Tarbela and Mangla dams. As a government body they often seem above voluntary adoption of strict environmental standards.

WAPDA is the main sponsor and equity owner of the Neelum Jhelum HPP. Financing for the project also does not require them to achieve high environmental standards. Overall, the Neelum Jhelum HPP has poor environmental standards, with no funds set aside for protection of the river or integrated watershed management. Damage to springs, and households from drilling of the

¹⁶ <https://www.internationalrivers.org/campaigns/china-gezhouba-corporation>

¹⁷ <https://www.kingsofcoal.org/companies/gezhouba>

diversion tunnel was poorly assessed and then not mitigated appropriately when damage occurred.

4.3.2 The Laraib Group

The Laraib group is a leading renewable energy developer in Pakistan with a tight focus on hydropower development in the private sector. The group has partial ownership of the New Bong Escape Hydropower Project, an 84 MW downstream of Mangla Dam. This project has been financed by ADB, and IFC among others and therefore, the group has had experience and capacity built on working at high levels of environmental management. Some of their staff has experience with working with other IFI funded HPP projects in the basin. Therefore, in their involvement with the Azad Pattan HPP of which the Laraib group has 20% equity share (compared to 80% owned by CGGC) they have been able to push for sufficient environmental standards for this project as compared to other CGGC projects in the basin (as discussed above).

4.4 Environmental Protection Agencies

The AJK EPA has had great capacity building after reviewing the multiple CSAIL HPPs projects and the ADB/IFC funded Gulpur HPP on the Poonch River. They now understand the level of environmental assessment and standards that are required for run of the river hydropower projects and expect similar standards for all new upcoming projects. The AJK EPA and AJK Government have also had to deal with the negative consequences of poorly executed projects (from an environmental perspective) such as drying up of mountain springs due to the Neelum Jhelum HPP and are cognizant of the importance of proper environmental checks. Therefore, even if the project sponsor or the lender does not pursue strict environmental assessment there is now pressure from the AJK EPA for the environmental assessment to be of a high standard.

On the other hand, the KPK EPA has had limited interaction with large IFC or ADB funded hydropower projects. Therefore, they did not require strict environmental standards for the Suki Kinari HPP. However, through the ADB funded Balakot HPP being developed by the KPK Government both the government and the KPK EPA are building capacity regarding environmental standards required as the project proceeds.

Lastly, as the possible environmental impacts in Punjab of these projects are very limited, the involvement of the Punjab EPA with these HPPs is also limited.

4.5 International Judgements on Indian HPPs

Pakistan appealed to the International Court of Arbitration, contesting India's construction of the Kishanganga Hydroelectric Project on the Neelum River (known as the Kishanganga River in India) under the Indus Water Treaty. Pakistan argued on the need for a high environmental flow release to maintain the river ecosystem downstream of the dam. In the final award the court specified that 9 m³/s of natural flow of water must be maintained in Kishanganga river at all times to maintain the environment downstream. The Indian bench responded that Pakistan was holding Indian project to a very high standard, even though HPPs within Pakistan were not held to such standards. Therefore, the court further ruled that future HPPs in Pakistan must be also undertake environmental assessments and impose similar environmental standards as requested by Pakistan in the Kishengana case.

International lenders such as the ADB and the IFC are cognizant of the direct ruling of the International Court of Arbitration and ensure projects are assessed to the same degree as laid

down in the court. However, Pakistani and Chinese sponsors of projects or other funding sources may or may not be aware of this ruling. As an example of this, the Neelum Jhelum HPP being constructed by WAPDA, has a 2 m³/s environmental flow release, much lower than the 9 m³/s required from the Kishanganga HPP. This is despite the fact that Neelum Jhelum HPP is much further downstream on the Neelum River and so has higher baseline flows and hence should have higher environmental flow releases than the Kishanganga HPP, if not at least equal.

4.6 Conclusion

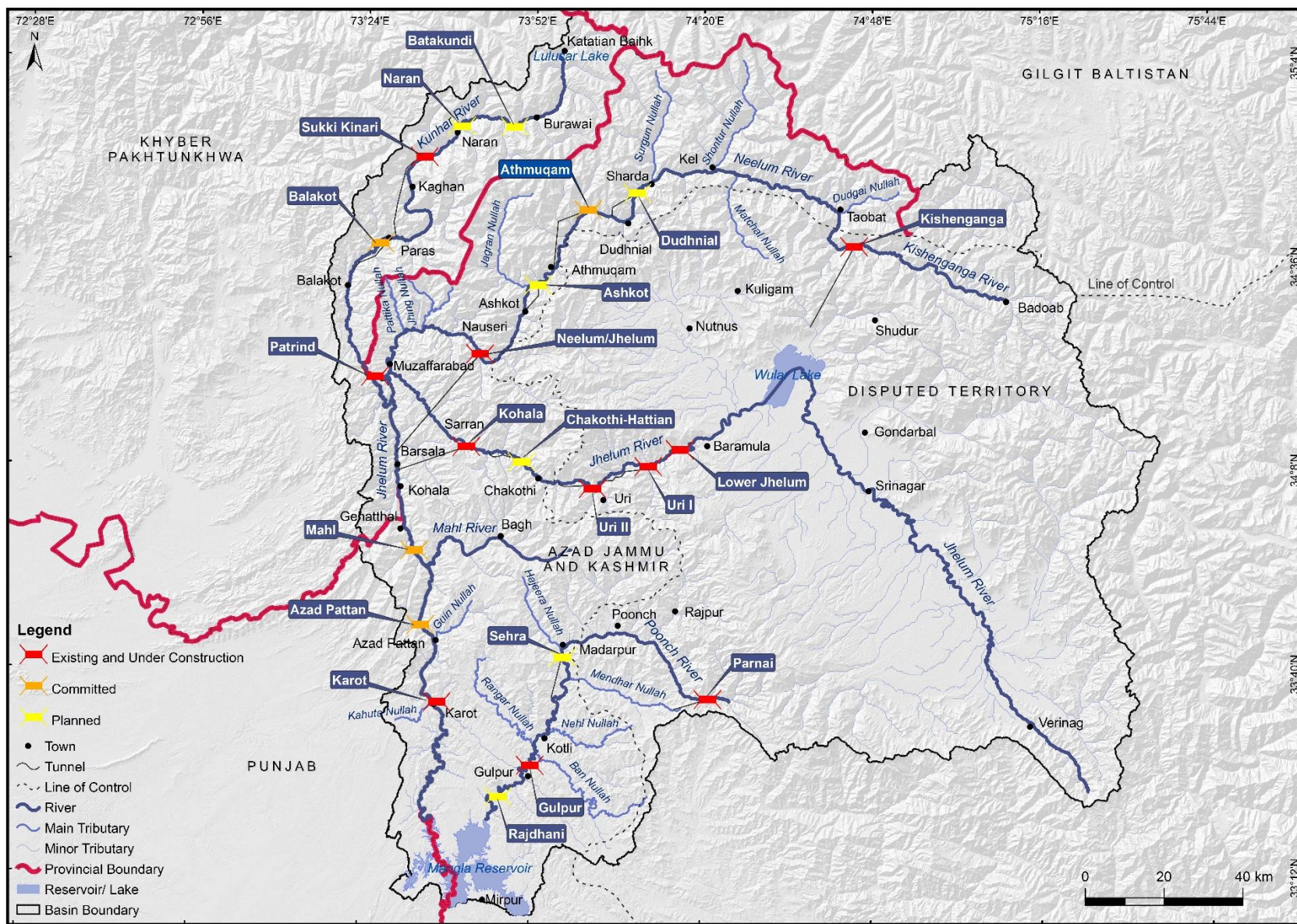
Within the Jhelum basin different CPEC projects have different environmental standards. CSAIL, because of IFC ownership, has pursued strict environmental standards on its projects. CGGC has shown a lax attitude towards environmental protection, other than the case of the Azad Pattan HPP where the Pakistani co-sponsor was able to aspire for better environmental protection. Capacity building over the years, of the AJK EPA has resulted them to require better environmental performance of upcoming projects in their jurisdiction whereas other EPAs are slowly catching up.

Table 2: Upcoming Projects in the Jhelum River Basin

<i>Project</i>	<i>Status</i>	<i>Governing EPA</i>	<i>Project Sponsors</i>	<i>Debt Financer</i>	<i>Source</i>
Jhelum River					
Kohala HPP 1124 MW	BC	AJK, Punjab	CSAIL	INA	kohalahydro.com
Mahl HPP 640 MW	BC	AJK, Punjab, KPK	CSAIL	INA	ctgsail.com
Azad Pattan HPP 640 MW	BC	AJK, Punjab	CGGC Laraib Group	INA	azadpattan hpp.com
Karot HPP 720 MW	UC	AJK, Punjab	CSAIL	The Export Import Bank of China IFC China Development Bank Silk Road Fund	karotpower.com
Neelum River					
Neelum Jhelum HPP 969 MW	UC	AJ&K	CGGC WAPDA, Government of Pakistan	Islamic Development Bank Saudi Fund for Development OPEC Fund for Development Kuwait Fund for Development China EXIM Bank-I China EXIM Bank-II	wapda.gov. pk
Kunhar River					
Suki Kinari HPP 870 MW	UC	KPK	CGGC Al-Jomaih Holding Company, Saudi Arabia Eden Inc. Berhad, Malaysia Haseeb Khan, FCA, Pakistan	Export-Import Bank of China Industrial and Commerce Bank of China Ltd	skhydro.com
Patrind HPP 147 MW	UC	AJK, KPK	K-water, Government of the Republic of Korea Daewoo Engineering & Construction Co Ltd	IFC ADB The Export Import Bank of Korea	patrind.com
Poonch River					
Gulpur HPP 100 MW	UC	AJK	Korea South East Power Company DAELIM Group Lotte Engineering and Construction	ADB IFC Export-Import Bank of Korea FMO (multilateral Development Bank of Netherland)	mira- power.com

INA: Information not available; BC: Before Construction; UC: Under Construction

Figure 1: Location of Upcoming Projects in the Jhelum River Basin



5 Case Study: Coal Power Projects in Thar and Punjab

IFIs such as IFC have refrained from involvement in Thar coal due to the negative environmental impacts of the projects. Therefore, there is no forced reason for project sponsors to follow international standards. Moreover, this has resulted in less capacity building of the Sindh EPA to deal with large open pit coal mines and coal power plants. Furthermore, the Sindh EPA may also approve and expediate Thar coal projects due to political reasons.

Engro Powergen Limited in the Block II coal mine and powerplant has attempted to implement good environmental practices at their project site. However, as they provide transparency with possible impacts and engage with the public and institutional stakeholders, they are as a result denigrated by the media and civic society. This can be compared to projects such as the coal mine in Block I where environmental practices are unknown, undiscussed, and questionable. Again, as with the HPPs, active involvement by Pakistani sponsors (such as Engro, Hub Power and Habib Bank) in Block II, which have significant social capital to protect, have pushed the project to adopt safe environmental practices, whereas the Chinese sponsors in Block I have made limited progress on following proper environmental protocol.

The Sahiwal, Hub and Port Qasim CPPs are based on supercritical technology and will run on imported coal. This is advanced clean coal technology and imported coal is environmentally cleaner than Pakistani coal. Sahiwal CPP was under litigation with a court stay order issued against it due to environmental issues. As can be seen from **Table 3** the Sahiwal project only has Chinese sponsors and financing and so it is possible that the management had a role to play in the initial environmental issues that plagued it.

Table 3: Selected Upcoming Coal and Power Projects

<i>Project</i>	<i>Status</i>	<i>Project Sponsor</i>	<i>Debt Financer</i>
Block I, mine and CPP ^A	UC	Sino-Sindh Resources Private Limited China Coal Technology and Engineering Group Corp,	Industrial and Commercial Bank of China
Block II, mine and CPP ^B	UC	Sindh government Engro Powergen Limited Thal Limited Hub Power Company Habib Bank Limited China Machinery Engineering Corporation State Power International Mendong	Habib Bank Limited, United Bank Limited, Bank Alfalah Limited and Faysal Bank Limited. China Development Bank Construction Bank of China Industrial and Commercial Bank of China
Block VI, mine and CPP ^C	BC	Oracle Power PLC SEPCO Electric Power Construction Corporation Yanzhou Coal	INA
Port Qasim 1320 MW CPP ^D	OP/UC	PowerChina (Sinohydro Resources) (51%) Al Mirqab Capital, Qatar (49%)	Export-Import Bank of China
Sahiwal 1320 MW CPP ^E	OP	Huaneng Shandong Rui Group, China	Industrial and Commercial Bank of China

Hub 1320 MW CPP ^F	UC	China Power Hub Generation Company (Private) Limited HUBCO	China Development Bank Export & Import Bank of China
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INA: Information not available; BC: Before Construction; UC: Under Construction; OP: Operational
Source:

^A Financial closure: Sino-Sindh Resources likely to see delay. Express Tribune Business, (2015, Oct 21). Retrieved April 06, 2018 from <https://tribune.com.pk/story/976402/financial-closure-sino-sindh-resources-likely-to-see-delay/>

^B Thar coal project achieves \$2bn financial close after govt guarantee. Dawn News, (2016, April 12). Retrieved April 06, 2018, from <https://www.dawn.com/news/1251498>

^C Ministry of Planning, Development & Reform P block Pak-Secretariat, Islamabad, Pakistan. (n.d.). Retrieved April 06, 2018, from <http://cpec.gov.pk/>

^D Company to build power station in Pakistan, China Daily USA (2015, March 4. Retrieved April 06, 2018, from http://usa.chinadaily.com.cn/epaper/2015-04/10/content_20406053.htm

^E Application for a generation license of Huaneng Shandong Ruyi for its 2 x 660 mw imported coal fired power project at Sahiwal, Pakistan " NEPRA. p. 94. Retrieved 17 December 2015

^F China Power Hub Generation Company Signs \$1.5 billion Foreign Financing Agreement with Chinese Lending Consortium Retrieved April 06, 2018, from www.chinapowerhub.com

6 Conclusion and Recommendations

The following are the conclusions of this paper:

1. The environmental measures for CPEC projects are generally voluntarily set at the time of the environmental assessment and these voluntarily standards are then made legally binding after the environmental assessment is approved by the relevant EPA.
2. It is shown that the environmental measures can be made of high standards and follow industry best practice with the push of even one key stakeholder involved in the project. These can either be the Chinese sponsor in the case of CSAIL projects, the Pakistani Sponsor in the case of the Azad Pattan HPP, or the AJK EPA in the case of any upcoming HPPs in AJ&K.
3. Project sponsors that are cognizant of environmental issues are more transparent with the environmental impacts of their project. They will also place the environmental assessment of their project onto their website for public viewing. These sponsors are also more open to stakeholder and community consultation during the project. Therefore, these projects come under increased scrutiny as media, NGOs, and communities are aware of these projects and the consequent environmental ramifications.
4. Project sponsors that are not conscious of environmental issues will not conduct a thorough environmental assessment, and when approved, they will have fewer legally binding environmental requirements for their project. Furthermore, they may not conduct consultations or place their environmental assessments online and therefore, civil society will not bring their project under the spotlight.

The following recommendations are presented:

1. All environmental assessments conducted for CPEC projects should be made available on a single platform for researchers, NGOs, legal experts and communities. This will allow for comparisons between poor and high quality environmental assessments.
2. There should be cooperation and exchange of skills between provincial EPAs. While the AJK EPA has gained significant expertise, there are not very many upcoming HPP

locations within AJK. Potential HPP locations are present in in Gilgit Baltistan and KPK and expertise gained by AJK EPA should be shared throughout relevant government organizations.

3. Previous environmental performance and future commitment of Project Sponsors, both Chinese and Pakistani should be given weightage when determining which group will be awarded a project.