THE PRAXIS OF CHINA'S 'SHENGTAI WENMING' (ECOLOGICAL CIVILIZATION): IMPLICATIONS FOR CPEC

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SEPTEMBER 2021

IN THE NAME OF ALLAH, THE MOST BENEFICIENT, THE MOST MERCIFUL

'By the morning light, and the night when it is still. Your Allah Has not Forsaken Thee, nor is He Displeased. And verily what is to come will be better than what has gone by.'

(Surah Al-Duha: 93)

Al Quran

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ABSTRACT

The impacts of human-nature violence translate as ecological crises which enable a fundamental reorientation of such concepts as 'justice.' It emerges that 'social' justice is a corollary of 'ecological' justice, with cultural and structural systems within the human world enabling select ways of 'knowing' and 'acting on' both. China's 'shengtai wenming' (ecological civilization) is treated as a cultural system with attendant implications for structural reform, which together present a governance-centric focus on ecological and social justice. The primary objective of this study, informed by critical realist metatheoretical understandings of nature, and the interrelationality of 'structure' and 'culture', is to explore Chinese praxis vis-à-vis ecological justice in the context of the Belt and Road Initiative (BRI). For this purpose, Pakistan is taken as a key site; using the example of the China-Pakistan Economic Corridor (CPEC) to determine a perceived 'duality' in Chinese climate/environmental governance. In light of this, this research examines Pakistan's fractured environmental governance regimes in order to assess the disparity between how operative structural and cultural systems aid/impede the 'knowability' and 'actionability' of climate change in both Pakistani and Chinese contexts. Additionally, key themes arising from China's prevalent 'cultural' systems are used to problematize understandings of 'positive peace' and how these engage with human-nature interrelations in the context of 'harmony' versus 'violence.' In doing so, it identifies how China's understanding of international engagement, under the rubric of 'non-interference' and 'win-win collaboration,' takes a different trajectory than the neoliberal paradigm, and acknowledges the agency of partner states such as Pakistan. Thus, this research examines how the environment-economy-society nexus has been addressed, in traditional Chinese history and philosophy, as premised on a nuanced understanding of 'harmony,' and how such an understanding is being revived in Xi Jinping's governance-centric approach to ecological, and social, justice.

Key words: Ecological Justice; Social Justice; Confucianism; Shengtai Wenming; Harmony; Culture-Structure Interplay; Critical Realist Metatheory; Environmental/Climate Governance; Climate Change; Human-Nature Violence; Peace Theory

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‘No man is an island entire of itself; every man is a piece of the continent, a part of the main …’

(Donne, Meditation XVII: Devotions upon Emergent Occasions)

An acknowledgement section is a humbling reminder of this simple fact – we are, as human beings, the product of a vast sleuth of influences, our mien drawn from a delicate tapestry of relations, weaved into the thread from which we embroider our identity. While I cannot hope to do justice to the debt of gratitude I owe to those who have been a source of guidance, and support, through the course of this study, I have faith that their generosity of spirit will pardon any failing on my part.

I am deeply grateful,

To Allah SWT – Al’Aleem (The All-Knowing), Al-Baasit (the Extender), Al-Lateef (the Subtle One, the Most Gentle)

To my Department: Dr. Bakare Najmideen Ayoola; Dr. Tughral Yamin; Dr. Muhammad Makki; Dr. Ahmed Waqas Waheed, and Dr. Imdad Ullah, for giving me a free hand in navigating the shoals of academic research in the direction I felt most drawn towards. Inexperienced seaman as I am, the freedom of navigation was instrumental in helping me get started on some sturdier sea legs.

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To my family – you are the wind in my sails, and the beacon that guides to the safest of harbors. My anchor, and my oar.

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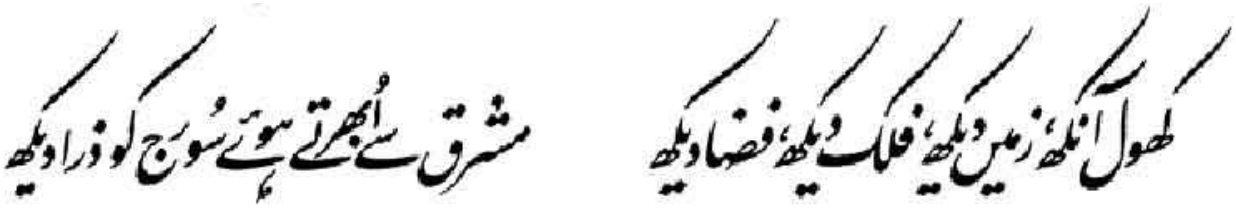
A Chinese proverb reads that a journey of a thousand miles begins with a single step – I pray that this work is that step. May He aid me on this journey, even as He has aided me in finding the courage, and the inspiration, to take this, the first of many steps (Ameen)

DEDICATION

To my family – an ideal I shall forever hold in my heart. And to my nation – a nation I hope to serve with the life I have been given:



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1. INTRODUCTION

The Intergovernmental Panel on Climate Change (IPCC) has recently issued its sixth assessment report on the state of the earth's climate. Contrary to past reports, this latest iteration is explicit in stating that "human influence has warmed the atmosphere, ocean and land. Widespread and rapid changes in the atmosphere, ocean, cryosphere, and biosphere have occurred." (IPCC, 2021) The scale of this human-induced change is deemed unprecedented, while its effects are being felt in weather and climate extremes in every region across the globe. Heavy rainfall caused major rivers to burst their banks in Western Europe in mid-July, resulting in an estimated 220 deaths in Germany and Belgium. Urban flooding also hit China's Henan province, with casualties mounting to 302. At the same time, temperature records were broken in Canada and the UK, with an unprecedented heatwave causing the mercury to climb to 49.6C in Lytton, British Columbia, killing 500 people. Simultaneously, wildfires broke out across much of the western United States, with 90 active fires reported on August 2nd, 2021, by CNN, one of which, Oregon's Bootleg Fire, grew to over 400,000 acres. A chronological listing of the extreme climate events that have transpired in the past six months alone would require more space, and time, than is permitted by this current study. Instead, the gravitas of the current global context vis-à-vis climate change can be illustrated by contextualizing the few events listed within the IPCC's 2021 report.

The World Resource Institute (WRI), in identifying key findings from this report, highlights how current extreme climate events have occurred under average warming of only 1.1 degrees C over pre-industrial levels:

> The IPCC Working Group I sixth assessment report shows that the world will probably reach or exceed 1.5 degrees C (2.7 degrees F) of warming within just the next two decades. Whether we limit warming to this level and prevent the most severe climate impacts depends on actions taken this decade (WRI, August 9th, 2021).

Despite this alarming proposition, the June 2021 G7 summit reflected a fundamental disconnect between climate/environment as phenomena encompassing human systems, and the structural/cultural factors within those systems that enable effective knowledge of, and action on, these phenomena. Proceedings labeled China, a country with a key stake vis-à-vis climate/environment by virtue of sheer scale alone, as an 'outsider' to joint action on addressing the same, positing an inherent difference 'in values' between China and the 'West'. Value-centric ideation has propelled the Biden administration's launch of the 'B3W' project i.e., 'Build Back Better World' as an alternative to China's Belt and Road Initiative (BRI), citing an emphasis on 'human' infrastructure in place of simple physical infrastructure. Writing for the Council on Foreign Relations, Hillman and Tippett argue that the BRI stands to inflict irreversible damage to global climate action and is cultivating energy dependency on nonrenewable sources in developing nations keen to capitalize on large-scale Chinese investment (2021).

Additionally, it is felt that China's manner of engagement with the developing world deviates from the standards of transparency and accountability set by 'the West;' a consequence of the nature of China's domestic governance model. In light of this, the Biden administration's White House Fact Sheet of June 12, 2021, presented the 'B3W' initiative as a "values-driven, high-standard, and transparent infrastructure partnership" premised on strategic competition with China. This 'us versus them' ideation speaks of an underlying cultural system that is fundamentally disconnected from the gravitas of the situation outlined by the IPCC. Further, it has resulted in 'structures' that assume 'human systems' to be somehow 'above' those of the natural world, instead of embedded in the same. Given the tendency of 'B3W versus BRI' debates to generate contradictory claims, and the dynamic nature of a fast-moving climate crisis, states such as Pakistan are faced with the need to proactively gauge how the nature of current infrastructure investments stands to interact with climate impacts over the long-run. Added to this is the importance of ascertaining the potential of a 'green BRI,' in light of China's lead role in green technological innovation and green finance. In turn, this necessitates assessing the implications of China's evolving model of social and ecological justice for its regional and international engagements. Thus, it is vital that the Pakistani state, a key partner under the BRI, engage with the 'cultural' systems at the heart of China's evolving climate/environmental governance models, and thereby analyze the 'structural' reforms being instituted in line with the

same. Such engagement must contextualize Pakistan's cultural and structural handling of its climate/environment context alongside China's 'governance-centric' approach, with implications for alignment through the China-Pakistan Economic Corridor (CPEC) project.

Climate change is a phenomenon situating man within nature, or the social world within an ecological system i.e., a biophysical world. Traditional positivist and interpretivist leanings fail to capture the and-both configuration of political ecologies engaging with climate change. Notably, Beck (1992: 80-1) argues that 'in advanced modernity, society with all its subsystems of the economy, politics, culture, and the family can no longer be understood as autonomous of nature'. According to Plant (2001), the idea that our reality may be seen as a relational product of the interaction between entities that form the biophysical world collapses Cartesian dichotomies of mind/body, person/community etc. In the context of peace and conflict studies, it is apparent that violence is not limited to the human world alone, but also corresponds to relations between this and the broader, natural world within which it is embedded. The impacts of human-nature violence translate as ecological crises which enable a fundamental reorientation of such concepts as 'justice.' It emerges that 'social' justice is intimately tied with 'ecological justice,' with cultural and structural systems within the human world enabling select ways of 'knowing' and 'acting on' these objectives. China's 'shengtai wenming' (ecological civilization) is treated as a cultural system with attendant structural implications, which combine to present a governance-centric focus on ecological and social justice. It is argued that the cultural systems underlying the global 'neoliberal' archetype have hitherto proven unable to actualize 'knowing' the natural world, in a manner enabling effective 'action' to ensure harmony or balance between this and human systems. Thus, this research aims to problematize the understanding of climate change, and environmental degradation, as 'governance' and 'worldview' issues premised on a context determined by both intransitive (biophysical phenomena) and transitive (structural + cultural systems) inputs.

1.1. Brief Background to 'Shengtai Wenming'

The phrase 'ecological civilization' first emerged on the global stage as an official Chinese slogan at the Chinese Communist Party's (CCP's) 17th Congress in 2007, where then-president Hu Jintao declared that the "construction of an ecological civilization will be given a prominent place and included in all aspects and processes in economic, political, cultural, and social development" (Meng, 2012). Oswald highlights the initially nebulous nature of the "aims, goals and methods" for implanting ecological civilization, with the slogan serving as a "a site for negotiation among different actors, institutions, and discourses" (Geall and Ely, 2018: 12). The concept was codified following Xi Jinping's rise to power, prompting a series of inquiries into the empirical geopolitics of energy and their relationship with the PRC's use of environmental governance as a lever for asserting global influence. Parallel to this emerged constructivist inquires dissecting the 'civilizational' rhetoric underlying the 'shengtai wenming' discourse emanating from mainland China. Related studies, such as Brace's inquiry into the ethics of an 'ecological-civilization' (2016), present a more metaphysical and aesthetic conceptualization of traditional human-nature dualisms problematized by the concept. Recently, authors such as Ball (2019) have begun to explore the praxis of 'Green China Inc' in terms of the economics of energy markets and infrastructure development projects. Overall, it can be argued that scholars remain divided on whether 'eco-civilization' presents an 'opposing' or 'alternative' narrative to the existing global movement on sustainable development (Williams, 2020; Marinelli, 2018; Geall and Ely, 2018).

Jeffrey Ball assesses China's standing apropos 'green' energy as somewhat paradoxical, citing a 'red, brown, and green' economy (2019). While the PRC burned half of all the coal consumed globally in 2017 (BP Statistical Review of World Energy, 2018), it also installed 53 gigawatts of solar-power capacity in that same year (Renewables 2018: Global Status Report). 'Green China Inc.' is illustrative of China directing the full brunt of its centrally-planned economy towards developing renewable energy resources in parallel with a circular model of economic activity. Ball's work (2019) cites the urban air pollution in major cities such as Beijing, in addition to the lucrative profits, domestic job growth, and global influence encompassed by emerging energy technologies, as key to assessing a 'green' PRC; with global climate change placed as a secondary concern. Nevertheless, scholars such as Ball (2019) and Williams (2020)

acknowledge, but do not further explore, the potential of the BRI in exporting China's brand of political ecology and environmental governance to partner states. The approximately 65 BRI countries constitute 62 percent of the global population and 75 percent of known energy reserves (World Bank, 2018). The China-Pakistan Economic Corridor (CPEC), a major 'economic regionalization' undertaking seen as a pilot project under the BRI presents a key case for exploring the implications of 'eco-civilization' in spaces outside of China proper. Of key interest are the disparate levels of environmental protection legislation and regulatory/monitoring capacities across the BRI, and how these stand to impact China's praxis of 'shengtai wenming' vis-à-vis infrastructure investment assessment.

1.2. Research Objectives

The primary objective of this study, informed by the framework outlined above, is to explore Chinese praxis vis-à-vis ecological justice in the context of the BRI, with Pakistan taken as a key site through CPEC to assess a perceived 'duality' in the same.

The 'greening' of the BRI is seen as a dynamic process evolving in sync with China's domestic reorientation of structural/cultural systems aimed at social and ecological justice. In the absence of proactive, forward-thinking investment planning, the dynamic nature of the climate crisis stands to impact anticipated profits from long-term infrastructure projects. 'Green China Inc' is reflective of this understanding, prompting an exploration of the new macroeconomic and developmental sectors that stand to arise as infrastructure adapts to climate stress. It remains to be seen whether such a model may emerge as a guarantor of not only domestic Chinese productivity, but the continued productivity of Chinese investments along the BRI – given proactive participation by partner states. Considering this, the study examines Pakistan's fractured environmental governance regimes in order to assess the disparity between how Pakistan and China 'know' climate change and are 'acting' on this knowledge in the light of preexisting structural and cultural systems.

Intransitive phenomena, existing independently of the human mind i.e., possessed of a material, objective 'reality,' are nonetheless made 'knowable,' as well as 'actionable,' through transitive, mind-dependent, systems of theorization and legislation subject to agent orientation. Therefore, this research examines structures, and attendant cultural systems, embedded within biophysical

phenomena, through the lens of critical realist metatheory. By adapting critical realism as a broad metatheoretical framework, it engages with the perspectives of 'elite' respondents. Such respondents are defined as actors in active correspondence with structural/cultural systems fundamental to the 'knowability' and 'actionability' of the relationship between environment-economy-society, and how this is impacted by climate change. Two key systems emerge as key to framing the Pakistani context, as is discussed in Chapter 3.

The study establishes a structure/culture conceptual framework around the context of climate change/environmental degradation in Pakistan and explores 'elite' perceptions of how this may aid or impede prospective action on social and ecological justice. It then examines how cultural systems premised on China's past as a 'civilizational' state are intrinsic to its present overhaul of structural setups aimed at climate/environmental governance. These cultural systems are examined in the light of a Confucian revival informing state-society relations in the PRC, and its implications for a governance-centric approach to climate change and environmental degradation.

Additionally, key themes arising from these systems are used to problematize understandings of 'violence' in peace theory, and how these relate with the concepts of 'conflict' and 'harmony.' Harmony is examined as a more comprehensive understanding of 'positive peace,' given how it incorporates both human, and natural, systems in its foundational premise.

1.3. Research Questions

1. How do Pakistan and China 'know' the relationship between environment-economy-society, and how does this knowledge inform state 'action,' given the impacts of climate change?
2. How can 'Green China Inc' emerge as a guarantor of not only domestic Chinese productivity, but the continued productivity of Chinese investments in partner states along the BRI?
3. How do cultural systems premised on China's 'civilizational' past inform its governance-centric approach to questions of social and ecological justice?
4. How do these compare with prevalent cultural systems in the Pakistani context? Do these systems, alongside their attendant structural setups, stand to aid, or impede, Pakistan's action on social and ecological justice vis-à-vis CPEC?

5. Can the themes underlying ‘shengtai wenming’ as a cultural system make any meaningful addition to peace theory?

1.4. Overview of Methodology

A comparative structure-culture assessment of Pakistan’s, and the PRC’s, approach towards climate change and environment, was conducted using feedback from local ‘elite’ experts having active engagement with key structures enabling climate/environment ‘knowability’ and ‘actionability.’ A dual focus on structures, as well as attendant cultural systems, became necessary to circumvent lack of local specialization in the cultural systems informing Chinese policy processes and reform-oriented governance. Culture, in this imagining, is developed as a meta-category by adapting Archer’s understanding of it as any theme or idea that may be conceptualized and, in turn, form a basis for further conceptualization. Such conceptualization is aimed at generating specific actions through self-reflexive praxis i.e., it informs the design of specific structures (1996). Thus, ‘working culture’ is premised on such themes as ‘value,’ ‘profit,’ ‘rule of law,’ and ‘prosperity’ etc., conceptualizations of the interrelations of which form an overarching ‘neoliberal’ cultural paradigm, which, in turn, informs institutions underlying such structures as economic and political systems. Thus, while ‘cultural systems’ are subject to the temporal and spatial influence of past experience and geography, they are not solely determined by these alone. The resultant culture/structure framework was developed through the course of data collection during online interviews and participation in interactive webinar sessions. Given limitations imposed by an evolving COVID19 situation, primary data has been supplemented by desk research involving both secondary documents, as well as audiovisual resources such as podcast interviews and YouTube state broadcasts. Thus, the present research enabled engagement with ‘digital research’ methods, involving both online media, as well as respondent-interviewer interaction over teleconferencing platforms and voice notes. Themes emerging from data-collection prompted engagement with the structure-culture nexus at the heart of the Chinese context of environmental/climate governance, contextualized through the praxis surrounding ‘shengtai wenming.’ This praxis was coupled with an overview of Pakistan’s fractured environmental/climate governance systems following the 18th amendment in order to identify the role of relevant structures and underlying cultural systems.

Interviews, and interactive webinar Q/As with 'elite' respondents, form a key dimension of the critical realist metatheoretical framework adapted for this study. In the context of the agent-structure debate, critical realists tread middle ground between the Weberian tendency of reducing society to its individuals, and Durkheim's emphasis on social action whereby society presents as an entity in and of itself. Danermark et al. (2002) distinguish 'structure' as being made up of a set of internally related objects, while 'agent' illustrates the particular property of a person having the ability to set up goals in an attempt to reach them i.e., agency displays intention. This intentionality makes human beings the effective causes of society. Nevertheless, the action resulting from agency does not occur in a vacuum; structure presents the context in which action and social interaction take place, even as social interaction constitutes the site in which structures are either reproduced or transformed. To structure is added the effect of culture as outlined earlier, with the interplay between both giving rise to select 'contexts' subject to either reproduction or transformation through agential action. The metatheory, while allowing for the transitive nature of knowing, aims at the generation of 'better truths' i.e., more accurate descriptions of reality aimed at emancipation from debilitating social relations (O'Mahoney and Vincent, 2014). Pawson and Tilley (1997) codify this approach to include actors' understandings, and rationales for action, by developing the 'interview' as a mode of data collection under critical realism.

Select actor responses not only enable an identification of the underlying structural, and cultural, factors informing any given context, but also highlight potential aids/obstacles to action aimed at transforming/reproducing this context. Thus, the current study adapts the Pawson-Tilley model by opting for 'elite' interviews, premised on the selection of interviewees in relation to select categories of respondent expertise. Semi-structured interviewing provides room to explore the self-reflexivity of respondents, enabling examination of different aspects of the relation between environment-economy-society. Interviewees may have varying degrees of expertise on a given context, based on 'privileged access' to attitudes, motives, and reasons. In light of this, Pawson and Tilley (1997) distinguish between two categories of respondents: 'practitioners' and 'subjects.' Practitioners are seen as having expert knowledge regarding the structural and cultural factors that go into the making of select contexts. This study selects elite 'actors' as drawn from cultural/structural systems with particular bearing on the 'knowability' and 'actionability' of

climate change/environmental degradation, and how these may inform the questions of social, and ecological, justice in the context of Pakistan.

1.5. Research Significance

This research approaches the environmental concerns surrounding major infrastructure and energy projects such a CPEC from a lens hitherto unexamined: that of the disparate climate/environment regimes prevalent in both the PRC and Pakistan. These regimes are problematized through a structure/culture conceptual model that adapts critical realist metatheoretical understandings of the 'duality' of structure and praxis to examine the interrelations between environment-economy-society through the cultural-structural systems of these two states. In doing so, it not only engages with the cultural systems informing a governance-centric approach to climate/environment in China, but also explores how such systems may contribute to understandings of 'violence' and 'conflict' in peace theory. Thus, it problematizes human-centric understandings against alternate conceptualizations of human-nature violence, aimed at the realization of social and ecological justice. This study also addresses the underexamined implications of China's domestic structural reform on environmental/climate governance regimes along the BRI. It takes into account the implications of a cultural system advocating policies of 'non-interference' with respect to international engagement, in contrast to the 'export' of specific systems evidenced under the neoliberal paradigm.

The exploration of China's cultural/structural nexus comes at a time when the state is beginning to assert itself as a major power, while negative rhetoric against projects such as CPEC is mounting in international discourse. Further, climate change has emerged as a key global 'existential issue' following major climate crisis events in regions unused to such phenomena as Germany and Canada. In light of this and shifting geopolitical trends, the 'climate/environment' frame is frequently used to critique projects under the BRI as detrimental to global well-being, with B3W being touted as a more climate friendly, 'value-centric', alternative. Thus, the timeliness of this study must be outlined – it aims to employ a key project under the BRI to examine Chinese praxis vis-à-vis social and ecological justice, both within China and abroad. This involves deploying a conceptual model that addresses the 'knowability' and 'actionability'

of climate/environment, thus engaging in an interdisciplinary examination of Sino-Pak environmental/climate governance through the lens of cultural and structural systems adapted from critical realist metatheory. In doing so, it identifies, and engages with, the lack of interdisciplinary, China-centric research focus within the social sciences in Pakistan, despite the presence of 'CPEC University Consortiums.'

Another key aspect of this study is its incorporation of 'digital' data collection methods/sources that are relatively underused in Pakistan. Given limitations resulting from COVID19 (lockdowns, social distancing requirements etc.) this study employed interactive webinar participation, online interviews, and WhatsApp audio recordings as key data-collection tools, supplemented by the use of audiovisual resources such as YouTube digital recordings of state televised events and podcasts. Here again, the timeliness of the topic under examination proved instrumental, as the period for data collection overlapped with Pakistan hosting this year's 'World Environment Day' and the UN launching its 'Decade of Ecosystem Restoration.' Additionally, the global impacts of COVID19 enabled researcher participation in international seminars on Chinese developmental praxis (as a background to Chapter 4) that may not have been possible otherwise. Thus, this research combines innovative use of metatheoretical constructs, alongside underused data-collection methods, in order to examine a vital, though underexplored, theme of great relevance to the Pakistani context.

1.6. Thesis Outline

The second chapter outlines an interdisciplinary literature review of how contemporary literature has explored the 'actionability' of 'shengtai wenming.' Relevant studies fall into two distinct categories, the first of which focuses on the People's Republic of China's (PRC)'s use of the concept as a domestic 'environmental governance model' i.e., sustainable development with 'Chinese characteristics.' The second examines the global scope of such a model through various lenses, including postcolonialism; thus, addressing the implications of 'shengtai wenming' as a means of Chinese power projection along the BRI. This is followed by an overview of the literature focused on the environment-economy-society aspects of CPEC. The second section of the chapter examines how the concept of 'culture-nature interface' has been variously approached in recent studies, building up to select literature that envisage climate and

environment as ‘worldview’ and ‘governance’ challenges. This enables a contextualization of the focus of the present study under the heading of structural and cultural factors generating environmental rationality in Pakistan; a preview of the themes informing the data discussion section in the next chapter.

Chapter 3 outlines the process of data collection through ‘online’ fieldwork, with semi-structured interviews employed as a primary tool. An additional key source, for both data and interview respondent identification, is online webinars by national think tanks, explored in the section as transnational participatory spaces for information flows. These are examined alongside televised state events which, given the proceedings of the 2021 World Environment Day hosted by Pakistan, proved instrumental in verifying interviewee responses as well as allowing access to state executive comments on Pak-China perception of climate/environment. The chapter also outlines the process of selection of ‘elite’ respondents while analyzing key limitations identified during the course of the study. The second section for this chapter analyzes interview themes using a ‘cultural/structural’ factor framing, before discussing each of these in Pakistan’s context under a separate heading. Thus, two ‘structural systems’ in Pakistan’s environment/climate governance regimes, as identified from the data collected, are analyzed alongside two prominent themes under ‘cultural systems.’

Chapter 4 applies this structure/culture interplay assessment to ‘shengtai wenming’ in the PRC context, drawing on the writings of both Chinese and international authors to explore such themes as the Confucian revival in state—society relations and how this informs a governance-centric approach to social, and ecological justice. A key limitation encountered during research for this chapter was the inability to read the original Hanzi script, hence prompting a reliance on English translations of works assessing Chinese history and philosophy. The chapter also examines the relevance of identified cultural systems for peace theory, analyzing ‘tianrenheyi[1]’ in the context of Galtungian ‘positive peace.’ This is followed by an assessment of the

[1] Roughly translated as the ‘unity of Heaven and (hu)man,’ this Confucian concept is seen as forming a key sociopolitical component of premodern China. This study is interested in the inter-relational premise underlying the concept that envisages human-human equilibrium (inclusive of that between external and internal human nature; between the individual and the collective; and between various collectives) as intertwined with human-nature equilibrium.

implications of China's domestic structural systems aimed at social, and ecological justice, for BRI partner states.

Chapter 5 concludes with an overview of the findings discussed through the course of this study.

2. THE 'ACTIONABILITY' OF SHENGTAI WENMING

Jason Moore dubs the epochs succeeding the 18th century as the 'Capitalocene' i.e., a period in which the operation of neoliberal, market-based human processes stands to restructure planetary systems at the geomorphological level (Chomsky, 2020; Moore, 2016). As per this understanding, the social relations emerging in the wake of the Industrial Revolution commodified 'nature' to a degree as yet unprecedented in human history. Subsequently, economic models under a global capitalist political economy were transplanted from the industrialized, seafaring empires of the Global North to newly independent nation-states in the South. This transfer of select logics of economic development, and their attendant impacts on environmental sustainability, has prompted pushback from indigenous tribal groups in regions ranging from North/South America to Australia, as well as global environmental movements such as 'Extinction Rebellion.' Jernnas and Linner (2019) cite the discursive struggles at the heart of multilateral attempts at environmental governance which draw on how liberal environmentalism has historically approached 'nature' through the political economy of *value*. The emergence of alternative discourses, aimed at (re)imagining the human-nature binary that informs such utilitarian capitalist understandings of the global environment, must be contextualized using two key variables. Firstly, alternative discourses challenging the anthropocentric worldview at the heart of Western modernity are emerging at a time when climate change poses a severe existential threat to the long-term survivability of the human race. Secondly, such discourses are reflective of a decline in the cultural, if not economic, hegemony of the West, as the PRC launches on a global infrastructure and energy initiative with transformative implications for the current geopolitical landscape. 'Eco-civilization' (shengtai wenming) in such a context, deliberately replaces 'development' with 'civilization' to 'emphasize a shift from the economic, to the political, the cultural, and the moral dimensions' (Goron, 2018).

Heinzekehr (2020) identifies the emergence of a "green public sphere" in mainstream Chinese discourse, following concerted state attempts at reinterpreting earlier Maoist and Marxist views of the human conquest of nature using Confucian precepts. Scholars such as Schmitt (2016) trace

the critique of the neoliberal developmental paradigm at the heart of 'eco-civilization' as a key discursive component in the construction of a Chinese self-identity as a "fictionalized image of itself as an alternative to Western capitalism" (Heinzekehr, 2020: 163). Hansen et al. problematize the concept as a "sociotechnical imaginary in which cultural and moral virtues constitute key components that are inseparable from the more well-known technological, judicial, and political goals." (2018: 195) Thus, 'shengtai wenming' may be understood as a political ideology countering the ideological hegemony of neoliberal capitalism (Magdoff, 2011; Gare, 2010), by invoking the philosophical heritage of China's historical civilization as reinterpreted under a state-sanctioned normative project (Hansen et al., 2018). While the fact of "Beijing's effort to build the image of a normative and discursive power, capable to contribute new words to the global dictionary" (Wang-Kaeding, 2015: 45; quoted in Heinzekehr, 2020) is reflected in the literature hitherto discussed, its actual *impact* on policy and legislation, both within China and beyond, has incited contrasting interpretations.

2.1. Domestic PRC Environmental Governance i.e., 'Shengtai Wenming' as Sustainable Development with 'Chinese characteristics'

Williams (2020: 32) explores two alternate "ontologies and epistemologies of eco-civilization: those who consider eco-civilization as a new political ecology versus those who see eco-civilization as … sustainable development with "Chinese characteristics". William's categorization focuses on the role of eco-civilization as an emotional rhetorical device intended to assert the authority of the CPC as an environmental actor both within the PRC and globally. Similarly, streams in the literature on 'shengtai wenming' and China's investment in clean technologies present varying interpretations of the *intentionality* of the Chinese state as a purposeful actor. While some scholars view eco-civilization as a top-down sustainability project intended to cement the Party's control domestically (Salimjan, 2020; Hansen et al., 2018; Liu et al., 2018; Marinelli, 2018); using an affective politics of care to assimilate communities and territories in Western China under the Party program (Narayan, 1995), others interpret it as an alternative to the 'Western civilizational' modernization that is destroying both natural and human systems. Pan Yue, considered as one of the chief architects for the philosophical imaginary at the core of shengtai wenming (Hansen et al., 2018), perceives development as a liminal or dialectical process, with the world having gone through three stages identified as

primitive, agricultural, and industrial. The current climate crises evidence the need for a fourth stage which, though transcending the limitations of the previous iterations, will nonetheless "preserve and sometimes revive all that was best in these and other civilizations, allowing for diversity and difference and the preservation of the identities of previous civilizations" (Gare, 2010: 12). Similarly, Zhang and Wang (2013) identify the ethos of eco-civilization as gradually transforming the carbon-intensive and linear mode of production of industrialization, though whether or not this differs from the conceptual framework of sustainable development is never explicitly outlined (Williams, 2020).

Scholars such as Pan Yue and Zhou Jigang (2006), in drawing on the seminal philosophies of Laozi, the father of Taoism, and Zhuang Zhou, problematize eco-civilization as not only compatible with post-Mao socialism with Chinese characteristics, but as a pragmatic program for complete *harmony*, both between humankind and nature, and among humankind itself. In contrast, scholars such as Wang Lihua (2014), quoted by Hansen et al. (2018), though appreciative of the capacity of Chinese traditions to produce an ethical and philosophical program for environmental sustainability, criticize the incongruity between theory and practice. Wang argues how the loftiness of philosophical precepts obstructs the construction of a practical alternative to neoliberal praxis and how traditional Chinese philosophies were treated as "smelling dreadfully musty" post the May Fourth Movement of 1919. This deviation from traditional precepts is echoed by Zhang and Wang, who argue for the pressing need of instituting citizens awareness programs highlighting consumption activities "guided by the scientific point of view in accordance with eco-economic laws, and low-carbon and circular development" (2013: 190). Thus, such scholars present a twofold critique concerning the practicability of eco-civilization; the first revolves around a deviation from traditional cultural systems by the Chinese leadership over the course of the 20th century, the second addresses the practical implications of the rhetoric employed by the CPC in attempting to revitalize these cultural systems through structural reform.

Hansen et al. (2018) draw on this disconnect between the philosophical *ideal* of eco-civilization as an alternative to prevalent modes of sustainable development versus actual Chinese state *practice* using Jasanoff's understanding of sociotechnical imaginaries (2015). These are described as "collectively held, institutionally stabilized, and publicly performed visions of

desirable futures, animated by shared understandings of forms of social life and social order attainable through, and supportive of, advances in science and technology" (Jasanoff, 2015: 4) Thus, shengtai wenming is analyzed as aiming for the very growth-led development prioritized by neoliberal precepts, albeit with 'green' scientific and technological innovation used to mitigate the effects of the same in key sectors. Citing President Xi Jinping's address presenting "clean water and green mountains" as analogous to "gold and silver", scholars such as Faure (2020) build on Hansen et al.'s understanding of a Chinese environmental governance framework couched primarily in domestic economic growth. Faure's work on the export of shengtai wenming to countries along the BRI assesses the nature of environmental praxis prevalent in these countries as drawn from their experiences of colonial rule.

The application of environmental legislation from former rulers informs the lack of effectiveness of the same, as the imaginaries at the heart of the existing framework do not correspond with indigenous environmental knowledge and norms (Faure, 2020). As underscored by commentators such as Cobb and Vltchek (2019), Western environmental conservation practice is rooted in 'outsourcing' the costs of development to weaker states lacking rigorous institutional frameworks. Extractive industries exploit the poor governance, and lack of effective environmental legislation, in resource-rich regions of the Global South to accrue mass profits, while observing strict standards in richer regions such as Europe. Cobb and Vltchek echo Samir Amin's understanding of 'use-value transfers' as a form of imperialist rent drained from the global South in the process of commodity production. Quoted in Foster et al.'s work on imperialism in the Anthropocene (2019), Amin outlines how the extraction of resources devastates poor countries "faced with the expropriation (appropriation without equivalent or reciprocity) of the 'free gifts of Nature to capital' to be found in their territories, along with the ecological costs of extraction" (Foster et al., 2019: 72) This duality of praxis, whereby the Global North outsources environmental degradation to countries in the Global South, illustrates differences in standards of legislation and regulation that are equally at play in the relationship between the PRC and partner BRI states.

Authors such as Goron (2018) understand projects such as 'eco-civilization' as being indicative of a Chinese attempt to approach global governance through a nationalistic discourse deviating from the liberal traditions of the Western order. Callahan (2011) problematizes China's portrayal

of its traditional ethical value system as offering solutions to the issues plaguing the international system today. In such a context, 'shengtai wenming' presents an understanding of Chinese exceptionalism comparable to the 'manifest destiny' powering the American self-identity imaginary. As underscored by Ho, "… unlike American exceptionalism, which grows out of the idea that the United States is the world's first new *nation,* Chinese exceptionalism looks to 5,000 years of continuous history to see China as the world's first ancient *civilization*" (Ho, 2015: 166).

Jernnas and Linner (2019) have assessed how the nature of climate change as a political problem draws on the discourses embedded in such national imaginaries. The authors further cite Yanow's (2015) assessment of ensuing difficulties in interstate cooperation being based not on 'facts', but over contestation of what is perceived as a relevant fact due to differing interpretations of the problem at hand. Consequently, 'eco-civilization', assessed by Chen and Lees (2018) as a brand of environmental authoritarianism that is the "antithesis of emancipatory, decentralized environmentalism", has been contextualized by authors such as Jernnas and Linner (2019) using Hajer's understanding of discourses. This presents discourse as a "specific ensemble of ideas, concepts, and categorizations that are produced, reproduced, and transformed in a particular set of practices and through which meaning is given to physical and social realities" (Hajer, 1995: 44). Salimjan (2020) draws on this interpretation to argue that it is the CPC's selective, reductionist, and contested understanding of 'eco-civilization' that is being deployed as a top-down political discourse connecting ethnic hierarchies, epistemic violence, and ecological imperialism. Using the case of the Xinjiang Autonomous Region, Salimjan presents the Party's hegemonic vision of an 'ecological future' as marginalizing traditional knowledge systems and resulting in pastoralists' dependence on state assistance. Citing Sorace's (2017) idea of politics as a world-making activity, Salimjan's analysis traces a colonial trajectory in CPC policy making and knowledge production in regions such as Xinjiang.

Similarly, Williams (2020) effectively traces the role of eco-civilization as a means of reasserting the Party's authority by creating ecologically minded Chinese subjects, rooted in the deployment of emotions citing China's historical and philosophical heritage. Nevertheless, her analytical focus does not extend to the interactive interplay between the PRC-led eco-civilization as an ostensibly alternate model of environmental governance, and its reception by partner states in the BRI which stands to be most immediately impacted by shifts in developmental praxis on

mainland China. Similarly, a 2019 study by Jeffrey Ball for the Brookings Foundation, titled 'Grow Green China Inc.', explores the economic opportunities presented by Chinese investment in clean energy for Western markets, to the exclusion of those in BRI states. Thus, while 'Green China' is assessed as the world's "largest producer of renewable energy, the largest builder of nuclear-power plants, and the leading manufacturer and exporter of a variety of technologies necessary to harness cleaner electricity" (Ball, 2019: 3), there remains a gap contextualizing these developments under the broader umbrella of the BRI in general, and CPEC in particular. Ball's work does not engage with the normative potential of eco-civilization as political ecology, instead of focusing on the impact of environmental degradation on the CPC's investment in clean technologies as a means of pursuing regime stability and control. An attendant, if underexplored, theme is the impact of the PRC's mode of 'win-win', 'non-interference' developmental engagement on partner BRI states, a majority of which have been assessed as lacking effective environmental/climate governance models while being highly vulnerable to climate change.

2.2. Global Environmental Governance i.e., Implications of 'Shengtai Wenming' for Chinese power projection along the BRI

Unlike developed economies in the Global North, the underdeveloped Global South presents a cleaner canvas for the institution of ground-zero 'green' infrastructure projects under the praxis of a new political ecology. The lack of effective institutional and governance frameworks in these states, particularly in the context of environmental legislation, presents an opportunity for 'legal-transplants' of regulatory and institutional structures, as highlighted by Faure (2020). In a seminal text exploring the prospect of the export of eco-civilization to countries along the BRI, Faure examines the dynamic progress in environmental legislation in the PRC, while underlining the absence of a clear direction surrounding its implications for the BRI. A key highlight is that the "demand for environmental protection within a particular country or region will be dependent upon the preferences of the population, and those preferences can be linked to the level of development within that particular country or region" (Faure, 2020: 5). This echoes Corne's study on the subject, which highlights the need for the principles of eco-civilization to respect "the broader concerns of each participant under their respective 'living laws'" (2020: 200) Corne further dissects the role of 'eco-civilization ' as a set of culturally derived norms and customs

representing "an inclusive approach to cultural and ecological diversity" with potential to be deployed as a dispute resolution mechanism for countries along the BRI (Corne, 2020: 200).

It remains to be seen whether Corne's analytical framework has a bearing on environmental disputes plaguing Pakistan, a state highly vulnerable to climate change, and one that is host to CPEC as a 'pilot project' under the evolving 'green BRI' initiative. The transnational nature of water management issues facing South Asia, coupled with attendant risks of population displacement and food insecurity, necessitate the institution of cooperative mechanisms for effective resource management. This relates to the ability of the PRC to initiate 'South-South Cooperation'[2] on environment and development, as highlighted in a 2016 report issued by the annual conference of the China Council for International Cooperation on Environment and Development (CCICED). The conference situated 'shengtai wenming' within the ambit of sustainable development, while underscoring its emphasis on the intimate linkage between human prosperity and respect for the capacity of nature. Revisiting the spirit of the 1955 Bandung Conference, the report cites key lacunae in implementing an eco-civilization through Chinese assistance to developing countries, with a core focus on the implications of limited participation of actors beyond the central government. Combined with the lack of meaningful public information and effective guidance on public communication (CCICED, 2016: v), it is argued that the wide variety of needs of developing countries in the area of eco-civilization necessitate local ownership enhanced by stakeholder engagement. The report goes on to highlight the relatively nascent nature of eco-civilization vis-à-vis Chinese companies themselves, as corporations attempt to devise knowledge-sharing and capacity-building programs on green technologies and best-practice strategies for clean investment. It asserts that the framework for South-South cooperation on eco-civilization must be compatible with the broader Sustainable Development Goals (SDGs); adaptable to countries at varying stages of

[2] Authors such as Kazi (2020) explore China's design of domestic development institutions premised on engaging with the developing world through improving connectivity for trade. This is contrasted against the protectionist trends prevalent in the West, and their impact on infrastructure investment projects. The United Nations Conference on Trade and Development (UNCTAD) acknowledges the nature of China's economic interaction under the BRI as enabling the structural transformation required in partner countries to ensure effective policy. Compared to a parallel 'hands-off' approach evolved by the West in recent years, it is argued that the BRI allows partner states to both indirectly learn from China's domestic development reform, and directly draw on its evolving institutional capabilities by defining infrastructure priority areas for investment.

development; innovative in terms of scientific and technological models; and geared towards the promotion of environmentally friendly and low-carbon infrastructure (CCICED, 2016: vi)

The need for innovation identified by the report forms part of a paper by Geall and Ely (2018); aimed at examining the linkage between environmental governance and reform within China and the PRC's potential to take the mantle of global leadership on climate action. The authors view eco-civilization as a slogan metamorphosing into an official narrative, with the potential to influence 'pathways' to sustainability. Drawing on research by Leach, Scoones, and Stirling (2010), the paper explores how "the way that narratives are employed thus has not only a descriptive but also a normative significance, shaping approaches to science and politics and … the role of innovation for sustainability" (Geall and Ely, 2018: 7). Thus, narratives surrounding an issue determine the strategies adopted to address it, particularly in the presence of general uncertainty concerning policy focus. Geall and Ely trace the evolution of China's sustainability narratives all the way through from Mao's "man must conquer nature" era; the 1972 Conference on Human Environment in Stockholm; the 1992 Rio Conference; the PRC's 1994 'Agenda 21'; and the debut appearance of eco-civilization at the Central Committee of the Communist Party's (CCP) 17th Congress in 2007. This is followed by an analytical assessment of 'Central Document No. 12', presented by the authors as a non-legally binding, nevertheless, precedent-breaking text, issued by the CCP and the State Council in April 2015. The text heralded the inclusion of eco-civilization in key policy documents, while detailing the policies and approaches for its ostensible implementation, a key facet of which remains 'technological innovation.' As per the authors' assessment, this focus on energy-efficient, low-carbon technological innovation as a panacea to the issues of environmental degradation gradually evolved into an allusion to 'systemic innovation' which "may lead to a transition or transformation of the entire economy" (Geall and Ely, 2018: 14). Whether or not such innovation may characterize a challenge to neoliberalism remains hotly contested, particularly given multiple articulations of the meaning and scope of 'shengtai wenming' emanating from China proper. Nevertheless, in contrast to such scholars as Williams' (2020), Salimjan (2020), and Goron (2018), who view the concept as a top-down discursive device intended to cement the Party's control, authors such as Geall and Elly (2018) and Heinzekehr (2020) view this same discursivity as possessing the potential for creating real pathways of change. Document No. 12 committed China to abandoning "the concept of regarding economic growth as the only criterion in government performance

assessment" (State Council, 2015) with the emergence of GEP accounting i.e., 'Gross Ecological Product', first implemented in Yunnan Province, as a prospective counter to the traditional conceptual basis behind 'Gross Domestic Product' (GDP) Thus, as per Geall and Ely, the discourse embedded in the text "seemed to signal that China's efforts to achieve system innovation, linked to technological innovation but incorporating social change and governance reform, were set out at a high-governmental level under the rubric of eco-civilization " (2018: 16).

The 'high-governmental level' identified by Geall, and Ely (2018) has been problematized by Lord in a study that examines the rural-urban divide at the heart of China's environmental project, and how the economic and political and economic inputs informing environmental research in the PRC compounds the marginalization of rural-environmental questions (Lord, 2018). Lord's work presents environmental and socio-economic issues as co-produced, with environmental knowledge emerging out of specific political, ideological, and epistemological contexts. Goldman et al. (2018) contextualize the epistemological and ethical contexts outlined above as the human dimensions of climate change, challenging the idea of 'climate knowledge' as a stable category. The authors relate this to how "different ways of knowing the world affects how one acts in the world, thus changing it in certain ways (world making). Reciprocally, the way one acts in the world affects the way one knows the world" (Goldman et. al, 2018: 2). The authors also highlight how climate change must be situated in the processes of knowledge making, materiality, and discourse circulation, with implications for the actions precipitated by given knowledge claims. In examining the human dimensions of a given phenomenon such as climate change, Goldman et al. (2018) explore concepts of vulnerability which emphasize how "structured social relations mediate society-environment relations", treating vulnerability as a relational concept that is the product of human relations (Goldman et al., 2018: 4). This allows for a clearer engagement with the concept of 'co-production', as identified in Lord's (2016) work on the rural/urban divide vis-à-vis environmental knowledges and governance regimes in the PRC.

Goldman et al. cite Jasanoff's (2004) understanding of co-production as "understanding the interrelations between knowledge and power and how this, in turn, shapes social orders (and vice versa)" with two 'veins of co-production' identified (Goldman et al., 2018: 5). The first,

'interactional', concerns "interactions at the interface of science and politics and deals primarily with epistemic debates about scientific authority and expertise" (Goldman et al., 2018: 5). The second, 'constitutive', "raises ontological questions by tracing the ways in which knowledge production shapes social orders, coproducing science-society and nature-politics relations" (ibid). In the context of climate change, co-production involves regulative selection of specific epistemes and ethical framings grounded in local knowledges, with many instrumental approaches to co-production failing to engage with the power relations contained within the same. The (re)production of power differentials within the given selection is instrumentalized in adaptive decision-making processes. This interpretative framework allows a neoliberal framing, based on a nature-society dualism, to be presented as illustrative of the instrumental use of co-production, with 'sustainable development' emerging as a key adaptation intervention to counter the effects of climate change. Co-production is further analyzed as being tied to "larger, material, structural, political, economic, and social processes" (Goldman et al., 2018: 8), with scholars such as Webber and Donner (2017) emphasizing the need for reexamining the role of the political economy in the generation of certain climate landscapes.

We may situate eco-civilization as an alternate framing grounded in the rise of the PRC as an economic and geopolitical actor, using constitutive co-production and the discursive and normative interplay between discourse and broader institutional and processual structures. As outlined by Gare (2014), the concept revolves around a prospective redefinition of development in a manner suited to balancing ecology alongside post-mechanistic science, while still being attractive to the general public[3]. Norgaard (2009) outlines how 'development', connoting economic growth without limits, has emerged as one dominant story sidelining the cultures and 'life stories' of indigenous knowledge groups, with eco-civilization presented as an alternative narrative of identity (Goron, 2018). Constructed through interactive interplay between various cultural, and structural setups, eco-civilization as a political ecology may be problematized as a mechanism for societal transformation along the BRI in general, and CPEC in particular. An

[3] Gare (2010) further dissects the concept as a liminal or dialectical progression, comparable to Pan Yue's (2006) understanding of the three civilizational phases identified earlier, with states needing to attain a certain shared level of development via industrial civilization before advancing to emerge as an eco-civilization. While the perceived scope of eco-civilization remains actively contested across transdisciplinary literary streams seeking to problematize the intentionality of the Chinese state, its nature as a relational entity prompts some agreement.

additional theme is how this transformative potential engages with the agency of partner BRI states, and how this agency is mobilized through the structural/cultural systems within the same.

2.3. Implications of 'Shengtai Wenming' for the Pakistani Context

Within the streams of literature contextualizing CPEC under the broader debate on climate/environment, Pakistani academicians repeatedly cite the deleterious impacts of largescale infrastructure projects on biodiversity and forestation. Additionally, the 'energy' component of the corridor is problematized to draw emphasis on CO2 emissions accruing from carbon-dependent industrial setups and power generation, as well as the destruction caused by extractive coal mining operations. Munir and Khayyam (2020) argue for establishing 'ecological' and not merely economic corridors, citing the need for prioritizing sustainable development and biodiversity conservation efforts in initiating green projects under CPEC. Similarly, Ali, Sajjad, and Haleem (2020) promote the idea of 'climate engineering' in presenting scientific and eco-friendly solutions for CPEC related environmental issues. Both pieces cite the impact of road construction and coal-powered growth on Pakistan's vulnerable ecosystems, advocating for mitigative practice, which is nevertheless rooted primarily in the 'structural' world, and represents an 'end-of-pipe', effects-oriented reaction (Plant, 2001; Hoyer, 2007). A similar approach is evident in Zubedi et al.'s (2018) exploration of controlling carbon emission by means of a more efficient transportation plan. The authors engage with energy consumption vis-à-vis climate change, while expanding on the differentiation of the types of energy put to a variety of consumption-based usages i.e., the transport sector. Thus, energy production is placed alongside consumption in an attempt to wholistically dissect the factors contributing to environmental degradation, and how these may be sidelined by decision-makers in policy design. However, both works lack engagement with the 'knowability' of climate/environment in Pakistan's context i.e., the systems through which these phenomena are made knowable, and thus actionable, through a broad-based, multisectoral approach. A dual focus on 'actionability' as well as 'knowability,' aids in problematizing the lack of effective policy on climate/environment action.

The general focus of inquiry explicated in Pakistani research circles may be said to circumvent the role of 'cultural systems' as informing the actions of various social agents within attendant

structural setups i.e., legislative, bureaucratic, commercial, and political institutions etc. Furthermore, there is little mention of the interrelation between these cultural and structural setups, and how this informs the potential of transformative action across socio-ecological contexts. While international scholarship has acknowledged, if not actively engaged with, the nature and scope of China's eco-civilization as a 'culturally' grounded mechanism for instituting institutional and structural change, Pakistani academia has yet to address the potentialities of the same, both in domestic and regional capacities.

Additionally, the transdisciplinary and multisectoral nature of environmental governance has yet to penetrate mainstream academic inquiry which remains confined to 'natural' versus 'social' science binaries, to the neglect of hybrid schemes of study. Among the few studies addressing the role of cultural systems, Shafique and Kanwal (2018) outline the geo-ethnic dynamics of CPEC in Pakistan, focusing on cultural impacts under the mechanisms of global power. The role of multiple domestic identities in determining the dynamics of regional infrastructure development is highlighted using a historically grounded analysis. However, the study does not engage with the interplay between Pakistani and Chinese cultural systems, nor does it address the interrelationality between cultural and structural setups in the context identified.

Work by Awais et al. (2019) seeks to undertake such an explanatory study into the interplay between the 'economic, social, and environmental' dimensions of sustainability needed to ensure 'sustainable development' vis-à-vis CPEC. However, while extending to the three sectors identified, the focus of the study does not engage with the impact of underlying cultural and political systems on the same. The authors highlight how "international distribution of overseas investment not only supports economic growth, but also transfers its environmental risks to the host states" (Awais et. al, 2019: 6). However, the focus remains generalized, without examining the impact of eco-civilization as a cultural system espoused by a state that boasts a purportedly distinct 'non-Western' identity in designing its frameworks for developmental engagement. Thus, the question as to how the PRC's underlying cultural ethos stands to shape its evolving developmental praxis remains underproblematized.

Awais et al. (2019) embed the above-mentioned praxis within key tenets of existing international standards which, it may be argued, the PRC has sought to emulate, e.g., the 'social' sustainability

dimension highlights the three essential elements of "transparency, accountability, and extensive contribution of the community through information flow" (Awais et al., 2019: 8). Thus, while Chinese praxis may evolve to develop its own distinct modes and mechanisms of engagement in certain areas e.g., 'interest' and not 'values-based' collaboration, it nevertheless seeks to emulate such aspects of existing praxis as are compatible with its own evolving frameworks.

Nonetheless, the *processual* and *relational* nature of information production and circulation is not made the subject of critical inquiry, under-examining the role of partner states, while 'communication', identified as key to 'environmental ascendancy,' lacks similar contextual exploration. Ali et al. (2020), in a letter to the editor of De Gruyter, identify key scientific and eco-friendly points of intervention for CPEC-related environmental issues, premised on structural interventions revolving around scientific mitigative processes and technological interventions. While presenting the need for carbon canopy installation and flood control mechanisms, research themes identified by the authors seldom engage with the lived experience of climate change in subaltern Pakistani spaces, let alone attempt to contextualize proposed 'technical' interventions using broader social, economic, and political structures, and their attendant cultural systems. A more comprehensive analysis is afforded by Kouser et al. (2020) in assessing the broad, multisectoral impacts of CPEC coal-based energy projects, tree-cutting, and increase in vehicular traffic, on Pakistan's environment and biodiversity.

Nevertheless, as is consistently observed in the literature hitherto discussed, studies on the socio-ecological implications of CPEC examine these themes without attempting to connect the same with China's evolving praxis under eco-civilization. Further, studies either remain confined to a fragmented, technical examination of top-down 'scientific' solutions, sans engagement with integrated socio-economic systems, or attempt a general engagement with such systems without reference to the parallel role of Chinese praxis in informing the same. Thus, questions remain as to whether the CPC's objective of 'Green China Inc' may replicate European developmental praxis of safeguarding Western ecologies by outsourcing environmental degradation to the Global South, or whether rhetoric on eco-civilization will translate into a guarantor of 'green' productivity for both the PRC and partner BRI states.

Ahmed and Mustafa (2016), in assessing the benefits of infrastructure development for the agriculture sector in Pakistan, argue for CPEC as presenting a lucrative opportunity for increasing yields by means of technological innovation. The study carries the potential of greater engagement with broader themes falling under rural mechanization (as identified by such commentators as Cobb and Vltchek, 2019; Lord, 2018) which address the deleterious impacts of mechanized agriculture on long-term environmental conservation as well as the socio-economic and political autonomy of rural regions.

Technological innovation also features in Butt and Butt's (2015) study on the impact of CPEC on regional and extra-regional actors. The paper, while identifying key shared issues vis-à-vis growth and development as presenting major avenues for cooperative action, omits mention of climate change – a key 'shared' issue facing the region, and one with grave impacts for long-term profitability of CPEC itself, given Pakistan's high vulnerability to climate-induced disasters. While work by Muhammad et al. (2020); Ali et al. (2020; 2017); Ali (2018); and Zubedi et al. (2018) represents a growing body of material on technical interventions needed to address energy and infrastructure issues, studies problematizing cultural and structural reform with reference to Sino-Pak interaction through a 'green BRI' are largely absent. In lieu of this, academic studies specifically focusing on the role of cultural systems in propounding structural change within the Pakistani climate/environmental governance frameworks, as well as the role of local 'causal groups' in precipitating the same, could not be identified.

There remains a dearth of theoretically grounded studies seeking to problematize the intentionality at the heart of 'shengtai wenming' in non-Chinese contexts, with work on CPEC and environmental legislation focusing on fragmented, statistical studies premised solely on emissions data and biodiversity loss. Questions of the fundamentally social and relational nature of developmental praxis, and identification of the essential structures without which it cannot be (re)produced in societal setups, remain on the periphery. The conscious and intentional adoption of behaviors by individuals seeking to address climate change is unproblematized, with an overt focus on the impact of preexisting structures to the omission of agential action. Thus, themes such as 'environmental rationality' i.e., the 'knowability' of environment/climate through select cultural/structural setups, present a focus on these as 'worldview' and 'governance' challenges necessitating proactive engagement with local contexts.

SECTION II

2.4. Culture-Nature Interface: Climate and Environment as 'Worldview' and 'Governance' Challenges

Hansen et al. define eco-civilization as "a sociotechnical imaginary," citing an interplay between cultural and moral virtues that is intrinsically intertwined with such structural factors as known judicial and political goals. (2018: 195) Sustainable development, a corollary to eco-civilization, is in itself an abstract concept, commonly presented through an anthropocentric, utilitarian ethos absent any normative 'virtue' based understandings. Following the 1972 Stockholm Conference, concepts such as 'sustainability' were presented as managerial concerns necessitating national and international assessment, without engaging with such underlying questions as to how cultures prevalent in these settings may influence sustainability. The importance of a culture-nature interface in framing climate change and ecosystem restoration as socio-ecological challenges has been tacitly acknowledged by the United Nations Educational, Scientific, and Cultural Organization (UNESCO) as informing the 2015 Sustainable Development Goals (SDGs). Thus, the organization defines culture as 'both an enabler and a driver of the economic, social and environmental dimensions of sustainable development.' This illustrates a key dimension of the construct of 'sustainability' as first outlined by the Brundtland Commission's 1987 report: its multisectoral nature.

The current debate on sustainability is punctuated by a lack of consensus on the relationship between its three dimensions (Ekins, 1993), with implications for policy initiatives intended to institutionalize the same. In light of this, culture-nature interfaces problematize the utility of abstract internationalized 'sustainability' and 'development' for heterogenous context-sensitive settings in the developed versus developing world. It is argued that the Chinese conceptual framing of 'shengtai wenming' introduces the cultural and political frames needed to define a harmonious interrelation between the three sectors identified by Brundtland; while allowing for a more comprehensive understanding of 'sustainability' than the 'needs-based' assessment put forward in 1987. An attendant theme concerns how culture-nature interface frameworks utilize indigenous knowledge policies and lived experiences of the environment and climate across

rural-urban landscapes. Authors such as Castro (2017) trace the impacts of colonialism and imperialism on environmental law, identifying the role of symbolic, as well as systemic, violence in reproducing metanarratives that sideline perceptions rooted in traditional belief-systems. Thus, symbolic violence manifests as language imposing universal meaning on context-sensitive phenomenon, and systemic violence as the functioning of the global political and economic order as the penultimate form of 'development' (Castro, 2017; Zizek, 2008). The formation of international environmental and climate legal instruments is not devoid of the impacts of this violence but rather, as argued by Castro (2017), is predicated on the (re)production of totalizing views sidelining questions of epistemology and ontology. Faure's (2020) examination of the interplay between economics, development, and law, may be said to build on the dynamics of these exclusory discursive practices through a 'legal transplants' phenomenon.

The transfer of legal rules from a donor (colonizing) country to a host (colonized) country results in the promulgation of environmental governance models that may not be compatible with prevalent contexts. In light of this, climate adaptation and environmental conservation may be envisaged as 'worldview' and 'governance' challenges, whereby climate vulnerable states in the Global South struggle to balance the universal construct of 'sustainability' with postcolonial 'development' needs. The experience of colonialism, as well as the transition to independent statehood, forms a key basis for the discourses and practices on climate and environment prevalent in states such as Pakistan. An additional concern is the Pakistani state's inability to translate its commitments via multilateral environmental agreements (MEAs) into domestic law (Shafqat, 2019), and the subsequent weakening of institutional frameworks geared toward coordination, monitoring, and implementation of needed legislation. In contrast, the Chinese experiment of (re)negotiating the meanings underlying sustainability presents a performative attempt to align discourse with national context. Authors such as Karl (2020) and Wang (2014) explore China's experience of modernist economic and political precepts through the lens of its civilizational history and traditional heritage. The project to build a harmonious society envisages situating China in a new global framework by means of deploying its Confucian past as a key discursive platform. A blend of Confucian and Taoist ideologies may be said to align eco-civilization with the Galtungian notion of 'positive peace', whereby structural, cultural, and direct interventions embody an integrated approach towards climate and environmental governance (Bennett, 2016). This prompts an inquiry as to how parallel structural/cultural

systems in the Pakistani context inform state attempts at climate/environment governance, as embedded in a local brand of 'environmental rationality.'

2.5. Structural and Cultural Factors generating Environmental Rationality in Pakistan

Knowledge-production on climate and environment inform perceptions of these as subjects of eco-sociological governance, while shaping general attitudes towards, and the very contours of, subsequent policies, practices, and ideas. The sites for such 'knowledges' may be expanded beyond academia to include the role of multimodal media sites allowing real time interaction between transnational publics and policy makers/academics/industrialists, as well as the role of legal commentaries and precedents in informing the conceptual basis for legislative and policy action. Thus, preexisting public attitudes towards the culture-nature interface in Pakistan, alongside the operation of the research-policy interface, are essential preliminaries for examining the basis for the development-environment paradigm. To this may be added the functioning of formal state institutions i.e., the judiciary, in shaping how 'environment' and climate are conceived as subjects of executive state action. This action is subject to the mode of political organization operating in a state, informed by a set of normative cultural 'value-systems' which may aid or impede the design of effective structures of governance. As per Leff's understanding of environmental rationality, profound causes of the environmental crisis may be found in "dominant ways of knowing" and are thus rooted in "the epistemological bases of modernity" (Eschenhagen, 2012: 423). A key aspect of modernity is the nature and scope of institutional mechanisms and processes allowing coordinated action on issues requiring state intervention. This study sets out to engage with some of the contours of the structural and cultural bases for 'knowing' climate change as a condition necessitating active management premised on context i.e., the disparate lived experience of climate change when it comes to states and their populations.

In light of this, policy implications of eco-civilization in the context of CPEC must problematize the nature of existing knowledge production and attendant policy action on environment and climate. Disparate environmental legal safeguards, varying levels of socioeconomic development, and differing degrees of state-community engagement on the subject of climate

change in Pakistan and China present both a challenge as well as an opportunity. To this may be added the role of culture-nature interfaces as (re)presenting a certain understanding of state-citizen social contracts in the context of the climate crisis. The potential of concepts such as 'shengtai wenming' as generative mechanisms for structural transformation necessitate cross-examination of the culture-nature, as well as research-policy interface. Different political systems, and markedly contrasting encounters with 'modernity', whereby both states continue to (re)negotiate the meanings of statehood and governance, emerge as a key theme, alongside the impacts of such socio-economic structural constraints as corruption and bureaucratic red-tapism. The primary concern remains one of (re)negotiating the meaning states give to climate change/environmental degradation vis-à-vis development, and how such meanings are embedded in cultural systems which may aid or impede action on adapting structures to withstand the impacts of the climate crisis. Such cultural systems operate within the broader ambit of formal structures e.g., laws on pollution, business regulations etc., and are instrumental in shaping these, even as they are shaped by them in turn.

Studies have examined the impact of such structural factors as the nature of the political organization (i.e., federalism) operating in a state, in relation to the nature and scope of environmental governance regimes. Ahmed Rafay Alam (2018) undertakes a seminal assessment of the evolution of environmental laws and policies in Pakistan, in conjunction with the state's attempts to design a more effective mode of federalism. Alam's work examines the impact of MEAs in shaping Pakistan's policy and legislation, thus highlighting the role of environment and climate in diplomacy and international commerce. An emergent theme concerns the legal gaps between Pakistan's international commitments and its domestic environmental legislation, wherein failure to incorporate MEAs into local law may be examined through the lens of the shifting legislative landscape post 2010. In examining the role of institutions in shaping the conceptualization of climate and environmental as the subjects of legislation, Alam traces the key role played by Pakistan's superior judiciary. The 1973 Constitution makes no specific mention of the environment (or climate for that matter) in relation to the question of rights. Through such landmark cases as Shehla Zia vs. WAPDA, the Supreme Court of Pakistan introduced the concept of environment as a fundamental right, while the Sindh High Court, in Sindh Institute of Urology and Transplantation vs. Nestle Milkpak, contextualized the same using the 'doctrine of public trust.' Alam analyzes how these legal developments have failed to

translate into policy despite precedent-breaking legal action by the courts. The contextual disconnect between state institutions (the judiciary and the executive) is further echoed by the failure to institute a mechanism to allow for Province-Federation interaction on the subject of MEA implementation post 18th amendment. Khayam and Ahmad (2020) explore the impact of the decentralization in the wake of the 18th amendment as generating coordination and implementation concerns vis-a-vis climate action, particularly given the controversy surrounding any potential rollback of the powers devolved to the federating units.

Pakistan's signing of the 1972 Stockholm Declaration prompted the inclusion of the subjects of 'environmental pollution and ecology' in the Concurrent Legislative List (CLL), thereby outlining the basic foundation for the country's nascent environmental governance regime. This regime may be said to have undergone a fundamental restructuring with the abolition of the Ministry of Environment (MoE) in 2011/12. Nevertheless, key defining principles/themes have remained the same, as outlined in Ali Tauqeer Sheikh's work aiming to make the debate on governance and climate action accessible to the general public. Sheikh highlights how the country's first environmental legislation under General Zia, the 1983 Pakistan Environment Protection Ordinance (PEPO), formally separated state environment and development agendas and set a course whereby agriculture, land-use, land-use change, and forestry (the last three collectively known as LULUCF) remained on the sidelines of environmental action. These sectors are today responsible for more than half of Pakistan's greenhouse gas (GHG) emissions (Sheikh, DAWN: June 2021). He assesses how an inordinate focus on urban issues by provincial governments following 2010 failed to realize the importance of an alternative overarching approach based on healthy ecosystems, the benefits of which would transform urban health. Ecosystems based approaches, as per Shiekh, stem from democratic norms by virtue of reviving local governments and empowering local environmental champions. Failure to engage with local communities vis-à-vis environment/climate action defeats the purpose of such legislative acts as the 18th amendment and the spirit of greater federalism envisaged therein.

The overlapping legislative competence of the federation and federal governments on the subject of MEA implementation, coupled with inoperative mechanisms to manage the same, have prompted inter-jurisdictional competition and nonuniformity of environmental standards (Khayam and Ahmad, 2020). A similar theme underlies Shafqat's (2019) work on the

institutional frameworks informing Pakistan's attempts to mainstream SDGs into its domestic policy through international cooperation, particularly in the context of large developmental projects. Thus, legislative, and institutional structures, coupled with the cultural modes through which they are conceptualized, indicate the means through which climate and environment are made knowable. The next chapter identifies key structural, as well cultural, systems highlighted by respondents while problematizing the 'knowability' and 'actionability' of climate/environment in the Pakistani context; and whether these stand to aid, or impede, transformative action on social, and ecological, justice.

3. STRUCTURAL-CULTURAL INTERPLAY in the PAKISTANI CONTEXT: ENVIRONMENT/CLIMATE 'KNOWABILITY' and 'ACTIONABILITY'

The knowability of intransitive, or mind-independent, phenomenon, e.g., climate change, is vested in transitive theories and practices which entail a means of apprehending the same through the design of adaptive social structures. As per Bhaskar's framing of 'reality', that which exists beyond discourse or theory is the very thing that makes discourse or human knowledge possible. Laws premised on resultant discourses form a means of corresponding with the transitive, even as they entail a form of knowledge of the same. In light of this, an inability to translate international commitments on climate and environment action into local laws may be reflective of both structural and cultural constraints impeding the 'knowability,' and thus 'actionability,' of climate/environment. Structural constraints may be said to embody the tangible, material aspects of effective legislative and policy action e.g., access to capital, state of existing infrastructure, energy needs, population size, the impact of temperature and precipitation on food security etc. In contrast, cultural constraints indicate a form of heuristics prompting an inflexible, context-incompatible conceptualization of the very issues necessitating policy action. Thus, the manner in which the lived experiences of climate and environment are made 'knowable' has bearing on the scheme of governance designed to manage the same.

3.1. Data Collection

As part of an attempt to gauge the framing of climate and environment in relation to infrastructure development, this study engages with the worldviews presented by experts from both academic and bureaucratic circles. Individuals were approached for comment on how climate change vulnerable states such as Pakistan may approach development projects such as CPEC, particularly in light of the state of existing environment/climate governance. What emerged during the course of the interviews was a majority predilection towards environmental conservation *versus* economic growth framing, wherein growth is seen to necessitate environmental loss. Only a few respondents saw the idea of environmental conservation as a

means of growth, whereby alternative avenues for 'green investment' would enable developing economies to treat climate change as an opportunity as opposed to an obstacle. Questions varied in length and content based on interviewee expertise, however, select focus questions were asked from all respondents from the beginning. A key guideline was whether respondents were in a position to know what they were commenting on i.e., how the setting or action contained within responses related with respondent experience.

The detail, consistency, and clarity of the responses was gauged in light of respondent profiles, especially when individuals from academic, versus bureaucratic backgrounds, when questioned about the same theme or event, displayed manifestly different viewpoints. It proved difficult to secure access to Chinese respondents, compared with their Pakistani counterparts, hence the section on China outlined in the next chapter is grounded primarily in desk/secondary research. Similarly, owing to COVID19 standard operating procedure (SOP) restrictions, and the refusal/unresponsiveness of state representatives from relevant bodies i.e., the Centre of Excellence for CPEC, the Ministry of Climate Change, and the CPEC Authority when it came to engaging in online interviews, the primary data in the current section has been supplemented by additional sources. These include YouTube interviews by these same authorities to local think tanks; podcasts; and the state broadcaster (Pakistan Television)'s televised proceedings of the 2021 World Environment Day. All supplementary materials revolve around themes relevant to the line of inquiry adopted by this study, while allowing access into the manner in which the selection of particular rhetorical frames in digital media emphasize particular cultural framings in the arguments advanced.

Legal gaps in MEA implementation; difficulties in coordinating between central and provincial governments on climate action and environmental reform; and a disconnect in how climate and environment are perceived in domestic versus international contexts; are among the themes that arose during the course of data collection. Respondents commented on the adoption of China's export industrialization regime as a baseline for expanding Pakistan's industrial base, emphasizing Special Economic Zones (SEZs) geared toward rapid development in infrastructure and energy. Concerns emerged as to the absence of comparable environmental baselines, wherein the discrepancies evidenced in provincial Environmental Protection Agency (EPA) capacities, magnified the impact of a predominant disregard for rigorous conservation practice.

Many respondents familiar with international environmental governance praxis in general, but not China's attempts to ground the same in select cultural systems, exhibited ignorance of 'shengtai wenming' as a construct. A key theme was how academia makes the environment 'knowable', with representatives of senior faculty at lead local Universities commenting on the need for hybrid disciplines merging the study of the physical world with its social and cultural undercurrents. The framing of 'Environmental Science' (ES) as a 'technical', 'natural science' discipline meant that respondents teaching in ES departments were overtly focused on the chemical and biophysical aspects of the discipline without addressing how such aspects interact with socio-economic factors through the lens of cultural ideation and policy design. This was echoed during the course of the webinars attended as part of the data-collection process, with panelists drawing on their teaching, research, and civic mobilization experiences to highlight the need for interdisciplinary, interprofessional, proactive collaboration on the subjects of environment and climate.

3.2. 'Online' Fieldwork – Primary Data Collection: Semi-structured Interviews

The Covid-19 pandemic highlighted a previously underexamined component of qualitative field research given the practical requirements of social distancing i.e., the state of digital penetration in academia and governance in the developing versus the developed world. It also catalyzed researcher engagement with emergent multimodal audio-visual primary data sources e.g., teleconferences and webinars. Lobe et al. (2020) explore the impact of 'online' field research on qualitative research design, underscoring the 'sociology' of the research process. The pandemic has refocused attention on the nature of research as a social process impacted by the disruptions in the social order (Teti et al., 2020), with computer-mediated communication presenting an alternative, highly socialized form of interaction (Joinson, 2005). The current research project, conducted entirely within the technical limitations imposed by the pandemic, presented an opportunity to critically examine these limitations as reflective of assumptions informing the research process. The nature of the project, guided by critical realist framing, aims to explore the ideation of key 'agents' i.e., political, and intellectual 'elites', concerning such themes as governance, ecology, development, climate change, and environmental degradation, in exploring the transformative impact of ideas in contrasting structural settings.

The constraints imposed by social structures i.e., economic, political, and social, in impeding the actualization of ideas as entities capable of transforming society, necessitates exploring the *experience* and *perception* of these structures by social agents. A key theme identified during the course of data-collection was the *trust* of these agents in these structures, particularly as pertaining to the public sector, and its impact on the perceived probability/possibility of change.

Thus, interaction and communication form a key component of the methodology employed for the current project, categorized as 'intensive' (qualitative) research under critical realism. The experience of conducting this interaction via online teleconferencing, in setups ranging from one-on-one interviews to webinar teleconferences attended by the researcher as a participant, allowed a deeper exploration of how the medium of communication influences the *content* of the ensuing conversation. Authors such as Nehls et al. (2015); Archibald et al. (2019); and Lobe et al. (2020) examine the processual nature of real-time audio/video communication, in comparison with face-to-face (FTF) in-person interviews. Deakin and Wakefield (2014) comment on the viability of online interviews, distinct from telephonic or email exchanges, as a useful mode of interaction in their own right, as opposed to being secondary alternatives to FTF. In light of this, the COVID-19 pandemic presented the opportunity to critically reflect on the concepts informing computer-mediated communication (CMC). Out of 15 'elite' interviews conducted, 13 involved teleconferencing over Zoom, with respondent video feeds enabled for all except 1. Kock's 'psychobiological model' on the link between the naturalness of CMC and FTF argues that the "the higher the degree of 'naturalness' of a CMC medium, the lower the 'cognitive effort' required to use it for communication" (2004: 333) This 'naturalness' is further defined as including elements of communication commonly associated with FTF e.g., audio-visual cues involving body language. During the interviews, it was felt that having access to both audio and video feeds facilitated this feeling of 'naturalness' and allowed for a feeling of rapport enabling more effective (as well as *affective*) communication.

Kock's model further outlines the importance of 'schema alignment', whereby the user experience of a particular CMC medium may differ between the researcher and the subject. Differing experiences impact expectations associated with an interview setting and may impede development of rapport or understanding. 7 of the 15 respondents interviewed for the current study are professional academicians engaged in full-time University level teaching/research,

while the remaining 8 comprise of serving or retired government officials, civil society representatives, and think-tank analysts. While disparate rates of digital penetration, coupled with nascent cyber protection and regulatory mechanisms have impeded widespread use of CMC in the Pakistani digital 'public' sphere, the COVID-19 pandemic escalated adoption of the same given the need for social distancing.

Following campus and office closures post-March 2020, most academic institutions and government bodies were forced to shift to online spaces, along with think tanks and civil society organizations. As the interviews for this study were conducted over the period of May-June 2021, it is assumed the experience of the preceding year allowed potential respondents a greater degree of familiarity with such popular CMC platforms as Zoom. Furthermore, the identified respondents were situated primarily in urban provincial capitals, with access to the devices and internet infrastructure needed to ensure seamless online interaction. Nonetheless, some unanticipated variables were identified during the course of the interview outreach process, chief among which was how *access* to digital infrastructure is distinct from the *behavioral changes* needed to ensure adoption of digital practices. Thus, despite such state-led initiatives as 'Digital Pakistan', it was found that *state* bodies approached for interview evidenced poor public information practices, with invalid email IDs uploaded to official websites, and the absence of accessible designated public relations officers/ information wings for select ministries. Therefore, the impact of the digital divide on e-government, as identified in the UN's E-Government Development Index (EGDI) group in 2020, emerges as a function of *access* (capacity) as well as prevalent *attitudes* (political will) as reflected in institutional 'cultures' in the public sector.

Meyrowitz's 'medium theory' (1994) and Short et al.'s theory of 'social presence' (1976) allow for a problematization of the influence of CMC on communication as subject to individual perception. Meyrowitz characterizes 'situations' or events not as physical spaces but as "information systems", whereby media influence the patterns of information flows. In developing societies with uneven rates of digitization, prevalent attitudes towards CMC may be colored by issues with net connectivity, power breakdowns, and uncertainty surrounding the security of collected data. An additional element is identified by social presence theory as the subjective quality of a communication medium whereby participants may reject certain media

(i.e., Zoom video teleconferencing) in favor of others (i.e., WhatsApp voice-notes) based on their understanding of the degree of 'presence' required for a given interaction. Thus, of the 2 respondents who did not opt for Zoom, 1 preferred to forward recorded responses to pre-set questions as WhatsApp voice notes, and the other chose a voice-only online call. The 'presence' of a respondent through CMC involves both verbal and non-verbal cues, modulated by the nature of the research and the attendant purpose of the interview. In projects involving a simple transference of information, voice-only interaction is considered sufficient; the degree of presence holding less salience (Nehls et al., 2015).

However, given the current project's aim to gauge the attitudes and perceptions of respondents towards certain social structures, considered a prerequisite for their agency as human beings, voice-only interaction proved unsatisfactory, especially in the context of recorded voice-notes. While prosodic features such as stress placement, rhythm, or intonation may be said to communicate deeper meaning, the researcher's lack of familiarity with the respondent's typical speech patterns, coupled with the abortive nature of voice-note recordings, impeded analysis in the absence of non-verbal cues. Audio distortion and background noise presented similar concerns.

3.3. Webinars by National Think Tanks: Transnational Participatory Spaces for Information Flows

2020 catapulted debates on global systemic crises to the limelight, bringing attention to a lack of systems-level thinking in most national-level crisis models (Weck et al. 2020). Policy challenges during COVID-19 have prompted comparisons with the climate crisis by drawing certain key parallels i.e., the impacts of delay, psychological bias, inequality, and lack of multilateral cooperation in designing timely and effective mitigation/adaptation strategies (Klenert et al., 2020). 2021, a year marking the start of the United Nations' 'Decade on Ecosystem Restoration (2021-30) has witnessed global and regional efforts at conceptualizing interventions necessitated by the climate crisis vis-à-vis institutional and societal action. In light of social distancing requirements, online webinars emerged as key sites for problematizing policy knowledge production, bringing together coalitions of trans-professional elites for understanding the dynamics of climate governance. In the context of Pakistan, think-tanks, categorized by scholars

such as Meyer (2010) as knowledge *brokers* or intellectual *mediators*, emerged as essential heuristic spaces for conceptualizing the manifestations of climate change as a global crisis. Denham and Garnett (1998) highlight the nature of think tanks as 'third spaces' fostering 'ideological fellowship' for 'professionals located outside dominant policy paradigms' (Tchilingirian, 2019). Campbell and Pederson further situation this operation of think tanks within national knowledge regimes i.e., "the organizational and institutional machinery that generates data, research, policy recommendations, and other ideas that influence public debate" (2014: 3) Given Pakistan's high vulnerability to climate change, as identified by the Germanwatch Global Climate Risk Index, in contrast with its small carbon footprint, the question of climate adaptation and mitigation has featured quite prominently on the state's policy agenda. Pakistan is a party to key multilateral conventions on biodiversity, atmospheric protection, and climate change, with the federal center tasked with maintaining ratification status of international agreements, and the subjects of environmental protection and ecology falling under provincial purview post-18th amendment (Abbas, 2019). In light of this prominent Pakistani think tanks, such as the Center for Global and Strategic Studies (CGSS) and the Sustainable Development Policy Institute (SDPI), may be examined as platforms problematizing existing state institutional frameworks vis-à-vis the climate threat, and conceptualizing the changing dynamics of governance through elite networks. These organizations tapped into the potential of online spaces as transnational information hubs in the COVID-19 era, organizing webinars with transitional, trans-professional experts on themes such as the nature of climate change as a non-traditional security threat, and the impact of climate induced disasters on the economic outlook of the South Asian region.

The current study involved attending two such webinars as a live participant, the first of which was hosted by SDPI on the 25th of March 2021, under the heading 'Non-traditional security challenges - Environmental and Energy Crises.' The second, a roundtable discussion organized by CGSS in collaboration with the Hanns Siedel Foundation Pakistan (HSF), was held on June 2nd, 2021, and titled 'Climate Change as a Non-Traditional Security Challenge: Relevance for Pakistan.' Participation featured a twofold aim. The first was observation of the *processual nature* of webinar interaction in and of itself, whereby discourse on climate change may be treated as a social and relational phenomenon partially derived from the everyday experiences of policymakers, academicians, and analysts concerning both climate and the routine functioning of

the market economy. There followed an examination of how such discourse *framed* climate, environment, and development in light of ecological modernization and social transformation in domestic and regional contexts. To this end, the themes used to advertise the webinars were of key interest, given the use of 'security' as a conceptual basis for analyzing needed interventions vis-à-vis climate change. The second objective concerned the identification of a sample of experts for elite interviews, with select panelists participating in both webinars later approached for one-on-one sessions on pre-identified research themes. This had the additional advantage of identifying a CMC platform with which respondents were both comfortable and familiar. As both webinars were organized through Zoom teleconferencing, the same application was used by the researcher for approaching identified respondents for one-on-one audio-visual sessions. The question-and-answer sessions for both webinars allowed some insight into themes resonating with attendees (80 for the CGSS discussion, a total figure could not be traced for SDPI) and allowed the researcher the opportunity to attempt interaction with the assembled panel.

3.4. Televised State Events

Global events such as `World Environment Day' (WED) broadcast by state media to an international audience constitute a type of political discourse. Televised events feature a spectacle of meaning creation whereby state officials, intellectuals, and creative elites come together to present a select rhetorical framing on the environment as a 'knowable' object. Framing presupposes certain attitudes and beliefs on part of the viewing publics. The proceedings for the 2021 WED hosted by Pakistan presented Pakistanis as agents of change not culpable for climate change or environmental degradation, but actively engaged in addressing the impacts of the same. Presupposition informs the perceived best course of action for addressing climate and environment as 'problems' necessitating 'nature-based' intervention i.e., public engagement in 'environment friendly' acts such as tree plantation. In light of this, mitigative action dominated proposed policy action at WED 2021, with adaptive measures relatively underdiscussed. Engagement with climate change and environmental degradation as distinct, but interrelated, *conditions*, as opposed to 'solvable' problems, did not feature in the discourse, neither did assessment of the systemic impact of prevalent governance models on addressing the same. Edelman cites how frames used to define arguments evoke particular orderings of social reality for "Far from being stable, the social world is … a kaleidoscope of potential realities, any

of which can be readily evoked by alternating ways in which observations are framed and categorized" (1993: 232). While climate and environment are not phenomena fully dependent on the social world, per say, the discourses, texts, and practices through which they are made 'knowable' translate into actionable praxis on which social systems are built. Furthermore, the structures, mechanisms, processes, and events occurring in the social world are built on parallel possibilities defined by the physical, even as they draw on cultural practices through which we navigate the same. Thus, the substance of the arguments on climate and environment governance draw on meanings "embedded in a frame or story line that organizes them and gives them coherence, selecting certain ones to emphasize while ignoring others" (Gamson, 1989: 157). Proceedings of the WED 2021 featured such storylines, framing the action of the Pakistani state vis-à-vis development and climate action through select ways of 'knowing' the same.

WED 2021 commemorated the start of the 'UN's Decade of Ecosystem Restoration', featuring addresses by key state leaders from across the world. In the context of 'cultural' frames, President Xi Jinping's message, read out by a representative of the CCP, outlined key themes informing 'shengtai wenming,' emphasizing the imperative to 'respect nature' as a distinct entity in the interests of 'harmony'. Prime Minister Imran Khan's address highlighted the accountability of man for actions committed, as well as the impact of those actions on future generations. The intergenerational theme was common to both analyses, though the Prime Minister's focus remained on 'nature-based' solutions to the exclusion of legislative interventions needed to adapt existing systems of governance to the impact of climate change and environmental degradation. A key frame identified in the WED viewing echoed respondent concerns surrounding the impact of partisan cultures on crises such as climate change and is later discussed under the heading of interview data analysis.

3.5. Selection of 'Elite' Respondents

The interdisciplinary nature of the theme under investigation i.e., governance, climate action, and Chinese cultural 'value' framing as a means of environment knowability and actionability, necessitated going over the departmental profiles of higher education institutions operating in Pakistan. As the topic revolves around CPEC, institutions listed under the CPEC Consortium of Universities were cross-referenced against the Times Higher Education (THE) Rankings to

identify top three Universities in Asia, based in Pakistan, ostensibly working on issue areas revolving around CPEC. Official websites for all three were scanned for departmental programs/research initiatives echoing the themes under study, as well as members of faculty specializing in areas relevant to the same. These individuals were then approached for online interviews, the process being repeated for top three highest ranked Chinese Universities. Of the six approached, only one, Lahore-based, institution had faculty willing to engage in online interviews on the identified subject area. In another Pakistani institution, faculty focused on CPEC did not specialize in China's environmental governance praxis as a theme, while those in environmental science were focused almost exclusively on 'hard science,' having little to no experience working on such social processes as governance and 'cultural' framing. This issue was repeatedly encountered in multiple Universities, not limited to the ones identified. Sinology, as a discipline, has yet to penetrate mainstream academic institutions in Pakistan, while more specialized research areas, such as those revolving around Chinese environmental governance praxis, remain a long way off.

The two webinars attended during the course of data collection proved instrumental in the identification of potential respondents. Q/A sessions allowed interaction with members of senior Pakistani faculty working on climate action, a few of whom are active members of civic action groups. Panelists from both webinars were approached for one-on-one online interviews over Zoom (the same platform on which the webinars were conducted), allowing interaction with respondents including a former Chairman of the Pakistan Agriculture Research Council (PARC), and a former Director General (DG) of the Pakistan Environmental Protection Agency (EPA). EPA offices situated in all provincial headquarters were approached for online interviews, along with the Ministry of Climate Change (MOCC), and the Centre of Excellence CPEC. Of these, only the DG EPA in Azad Jammu and Kashmir acceded to a session. A key issue repeatedly encountered across almost all state operated sites (e.g., the official site for MOCC) was incorrect contact information, with given email IDs failing to deliver messages to the identified respondents. Phone-calls, and WhatsApp messages to identified public information officers/personal assistants, went unattended. A similar problem was encountered while attempting to approach the Centre of Excellence, a body that specializes in research initiatives meant to inform policy around CPEC. While a FAQ's page lists responses to 'frequent queries' surrounding the project for public awareness (https://cpec-centre.pk/cpec-faqs-responses/), there

is no mechanism for submitting a question to the given list of 16 pre-identified queries. Of these, Q. no. 12 deals with the subject of 'Environmental Impact Assessment,' choosing to treat the subject as a yes/no binary where 'each project has to pass through EIA,' without addressing the nature of concerns surrounding the rigor/efficiency/effectiveness of the same:

- Q.no.12: Is Environmental Impact Assessment conducted prior to development of each project under the banner of CPEC?
- Ans: Each Project has to pass through Environmental Impact Assessment.

There is no mention of climate change, or its potential impact on CPEC investments, in the list, with Q.no.11 choosing to address the pollution caused by coal power in isolation from its overall impact on the climate. The answer to no.11 lists out Pakistan's energy crisis, the cheapness, quickness, and easy availability of coal, and the fact that 40 % of global electricity is generated through coal, while 'ours' would be 20 % by the next 'few' years. This us/them binary, framed through a 'climate accusation' lens, came up quite frequently during interview sessions and shall be discussed. The last response to Q.no.11 features 'use of supper critical technology' and other 'environmental safe guards' (errors from the original) as being 'under adoption' without citing any particular examples or commenting on the rate of progress of adoption. Nor is there any mention made of any plans to use CPEC as a means of investing in 'green' technology, given China's lead in the solar power industry.

- Q.no.11: Why CPEC Energy Projects mostly include coal power plant and what measures are taken to avoid pollution from these projects
- Ans: Pakistan was facing worst electricity shortage in 2013
- Coal in the quickest and relatively cheaper source and by now 40 % of global electricity is generated through coal. Ours was 0 % share and would be around 20 % by next few years.

- Use of Supper critical technology and other environmental safe guards are under adoption.

The focus is on adoption, not adaptation, while a majority of the remaining 14 queries revolve around the economic and political aspects of CPEC, with one memorable question addressing its comparison to the 'East India Company' (this is, in fact, Q.No.1) Only 2 of the given 16 questions focus on environment and climate, none address the economic potential of a 'green China' for green infrastructure investment in Pakistan, or the risks posed by climate catastrophe, to which the country is dangerously vulnerable, to the investments currently being made. Given incidents of flooding and wildfires in the last six months alone, the concept of 'stranded assets,' whereby current investment in coal power fails to yield dividends in the 'next few years' (the life of an average coal power plant being much more than this) is unaddressed. This list has received over 6056 views as of August 19th, 2021. Repeated requests for online interview, coupled with messages over the in-site 'contact us' feature, went unanswered.

Given the lack of response/willingness from state institutions, additional respondents were identified by parsing local publications on the subject of comparative environmental governance models and 'green China Inc.' from the period of 2015-2021. 2015 was selected as a baseline given the significance of the revamped SDGs, the Paris Climate Accord, and China's impact on global climate action initiatives in the vacuum created by American withdrawal from the same under the Trump administration. Guidance on 'greening' the BRI was issued by the Chinese Ministry of Ecology and Environment in 2017, while in 2018, 'ecological civilization' was written into the Chinese constitution. In December 2020, Pakistan and China agreed to turn CPEC into a model green BRI initiative for the benefit of the entire South Asian region. The period also overlaps with the launching of the Clean Green Pakistan Movement (CGPM) in 2018, and the 'Protected Areas Initiative' in 2020, and culminates with Pakistan hosting World Environment Day (WED) in June 2021. While publications identified during the course of the literature review did engage with the climate and environmental impacts of CPEC, no academic publication on the subject of a comparative study of Sino-Pak environmental/climate governance could be traced. Work on China's environmental/developmental praxis vis-à-vis the BRI in general, and CPEC in particular, proved even more elusive. The main reference to 'shengtai

wenming,' assessed through the lens of CPEC, and its implications given the impact of the climate crisis on development, was traced in articles by two lead think tanks i.e., CGSS and SDPI. Authors of these pieces were approached for online interview, with only one responding and agreeing to a session. Reluctance to comment on CPEC in relation with the climate crisis proved a recurrent theme, with panelists refusing to engage with questions on the subject during one of the two webinars attended.

SECTION II: DISCUSSION AND ANALYSIS

3.6. Interview Themes: 'Cultural Versus Structural' Factor Framing

The given figure outlines the conceptual model used to process themes emerging from a thematic analysis of interviews coducted during the course of the study. The culture/structure frame adapts Bhaskar and Archer's understanding of structuralism/humanism to Bennett's (2016) analysis of how culture/structure inform the nexus between peace studies and ecology through the lens of context. Collier (1994) highlights how Bhaskar's relational model of society processes social structures as key to determining social ontology. These structures are not construed as atomistic individuals, groups or institutions, but as the persistence of the relations *between* these. Thus, structures emerge as a set of interrelations, and are presupposed on a lattice work of other relations operating at different times, locations, and hierarchical levels. Culture, in contrast, is described by Archer (1998: 504) as "constituted by the corpus of existing intelligibilia – by all things capable of being grasped, deciphered, understood or known by someone." Cultural systems operate alongside structural setups, both being subject to what critical realists describe as the stratification of reality, where 'reality' is stratified or layered. This corresponds with what Bhaskar (1989) describes as the hermeneutic mediation of meanings whereby our systems of knowing must be treated as distinct from the *objects* of our knowledge. In light of this, physical/chemical/biological layers exist as intransitive (mind-independent) objects 'made knowable' through transitive theory. A degree of *existential* intrasitivity may further be attributed to 'social structures' which, though produced by and dependent on the human mind, exist as distinct referents relatively autonomous of investigation. Nevertheless, structures, being a part of 'social reality,' are less *causally* intransitive than objects of study in 'natural reality' are thus treated as separate from it. Therefore, critical realism's ontological framing is premised on three key ideas, two of which, in turn, underly the given model:

i) Ontological Realism (especially as concerning 'natural' realties i.e., climate/environment, and causally intransitive 'social' realities i.e., economic structures premised on neoliberal capitalism/the fossil fuel industry)

ii) Epistemic Relativism (human 'knowing' is finite, contextual, and fallible, and produces a plurality of assertions as to the 'right' knowledge)

The interaction of culture and structure, relative to the impact of biophysical phenomena that encompass both, highlights how the natural world influences social arrangements and undertakings premised on how humans experience and give meaning to the same. Bennett identifies 'context' as the site "emphasizing the inseparability of organisms from their relationships and environments … (drawing) attention to the webs of relationships that humanity is embedded within" (2016: 168) She relates the idea of context to Galtung's positive peace, conceptualizing a world based on social, as well as ecological, justice. Cultural systems such as 'shengtai wenming,' allow for equal emphasis on both these aspects, alongside such alternates as 'earth democracy' (Shiva, 2006). It is argued by scholars such as Gare (2014), Lipitsky (1984), and Daly (1990, 1993) that alternate cultural systems such as 'sustainable development' are premised on a mechanistic, anthropocentric hermeneutic scheme that views environment/climate through a consumption-oriented lens. Thus, 'profit,' 'growth,' 'consumption,' emerge as key ideas informing the system, with 'social justice' treated as a distinct, rather than interrelated, category vis-à-vis ecological justice. The context identified by Bennett may be further analyzed using Bhaskar and Archer's understanding of transformational social activity, that problematizes the internal relation between structures and agents. The 'orientation' component outlined in Figure I may be interpreted through agential action, whereby agents, operating through structural and cultural systems embedded in broader biophysical phenomena i.e., climate crisis and environmental degradation, act to reproduce, or transform, the prevalent context. This orientation is premised on two key aspects of critical realist thinking: duality of structure and duality of praxis.

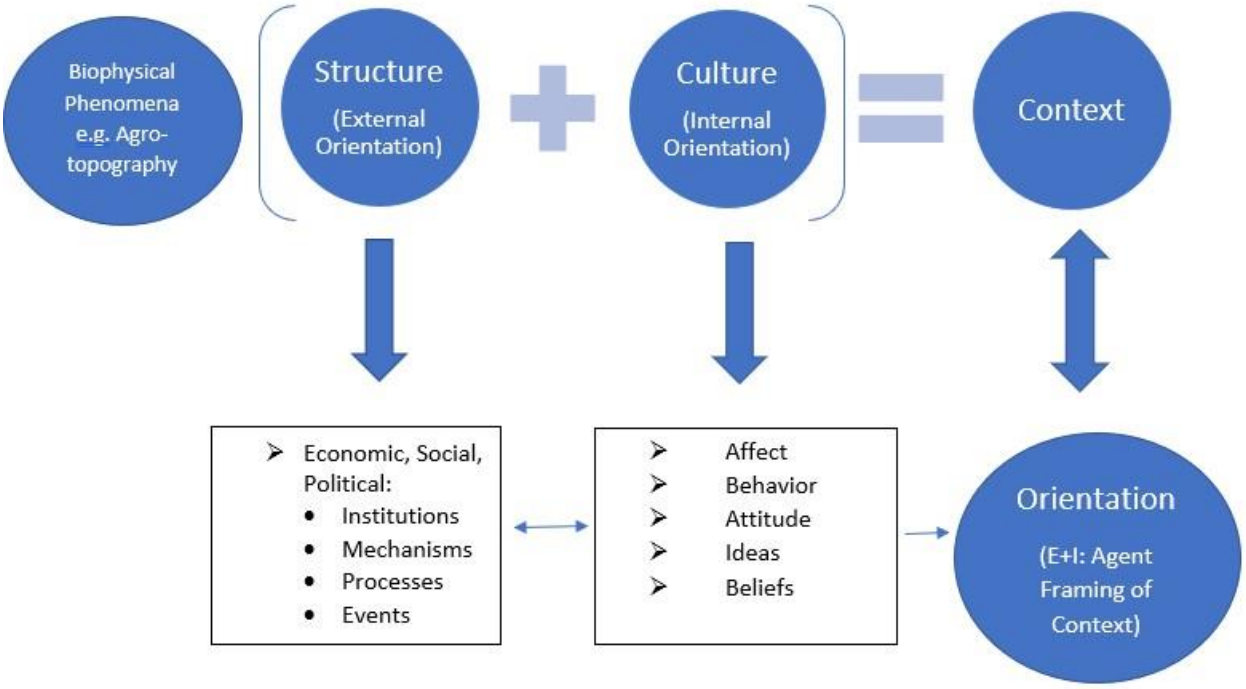

Figure 3.1

The first implies that structures are both the ever-present condition (or material cause) of human action, as well as its continually reproduced outcome. Thus, there emerge two kinds of causality: purposive, whereby people make structures, and structural, whereby structures make people. The second highlights how human action entails both the conscious production, and (normally unconscious) reproduction, of the *conditions* of production itself i.e., structures and cultural systems. Thus, structures are both the outcome of action, as well as a condition needed to enable it, and human beings function both as the causes of society, as well as it effects. In light of this, agents are understood to be purposive, i.e., they act with some conception as to the nature and scope of their action, premised on their framing of a given context (orientation).

Additionally, past actions interact with past social structures, predating any subsequent human activity and exerting a causal influence on the same (structural conditioning). It is intriguing to note how conditions of stress or flux, especially in the biophysical realm i.e., the climate crisis, impact human action, resulting in an overall context which may aid, or impede, the realization of 'peace.' The Earth Charter, a list of actionable principles produced by the Earth Charter Commission, and endorsed by the International Union for the Conservation of Nature (IUCN) and UNESCO, articulates a vision of peace that aims to be holistic: "peace is the wholeness

created by right relationships with oneself, other persons, other cultures, other life, Earth, and the larger whole of which all are a part" (Prinicple 16(f)). Thus, the idea of 'social reality' as premised on interrelations, embedded in (and not autonomous to) the biophysical world, allows for 'positive peace' to address both social and ecological justice through human action.

Figure 3.2

Interviews with 15 elite 'experts' from Pakistani academia, bureaucracy, and civil society were analyzed using this culture/structure frame, a complete table for which is given in Appendix I. Respondents were asked if they see environmental conservation and climate change adaptation/mitigation practice in Pakistan as corresponding with local 'lived realities' of climate change. This prompted an examination of the role of education, laws, and policy in defining a bottom-up, pluralist model of ecological transition that addresses the question of growth through infrastructure investment versus climate crisis/environmental degradation. Respondents commented on the role of cultural systems through which locals navigate state structures of governance, as well as the potential within these systems to 'know' the impacts of the climate crisis on existing economic, political, and social structures i.e., using self-reflexive praxis. The scope of 'knowability' (the ability to gauge climate/environment in terms of their structural impacts) was paired with that of 'actionability' (the ability to take action to effect needed change). Structural and cultural constraints impeding both local knowability and actionability were identified, frequently through a comparative analysis of the operation of parallel structural and cultural systems in the PRC. A key theme frequently encountered in sessions concerned the disparity between Pakistan's international commitments on environment and climate, and the

state of domestic laws intended to mainstream the same. This was followed by respondents analyzing the impact of disparate environmental legal safeguards, varied levels of socioeconomic development, and differing degrees of state-community engagement on the subject of climate change across China-Pakistan.

Multiple responses felt the onus to be on inaction by the Pakistani side, citing lack of effective 'structures' premised on cultural systems failing to present viable state-citizen relations in the public sphere. Assessment of Chinese action on climate and environment vis-à-vis the BRI prompted references to Pakistan's urgent need to overhaul both structures, and attendant cultural systems, in order to better capitalize on the potential of the climate crisis as an enabler of 'green investment.' An alternate interpretation featured a 'climate accusation' frame, whereby China's developmental model was seen as a blueprint for Pakistan to adopt, regardless of its impact on the environment. This was usually followed by a securitization frame citing the need for 'energy' security through coal sector investment. Further, the idea of the West's 'climate guilt' was used to defend Pakistan compromising on environmental costs 'in the short term.' This prompted a discussion on the phenomenon of 'Green China Inc.' as a prospective means of 'climate-proofing' green investments. The idea that 'green investments' would yield better dividends in the long run than assets stranded by climate change, i.e., coal, prompted agreement, but also references to the state's current lack of systems (cultural + structural) needed to ensure the same.

Of the structures most frequently cited by multiple respondents as impeding the 'knowability of' and 'actionability on' the current climate crisis/environmental degradation context vis-à-vis infrastructure investment, education and legislation were of key significance, with attendant impacts on 'cultural' conceptualization.

3.7. Structural Systems in Pakistan's Environment/Climate Governance Regimes:

i) Education

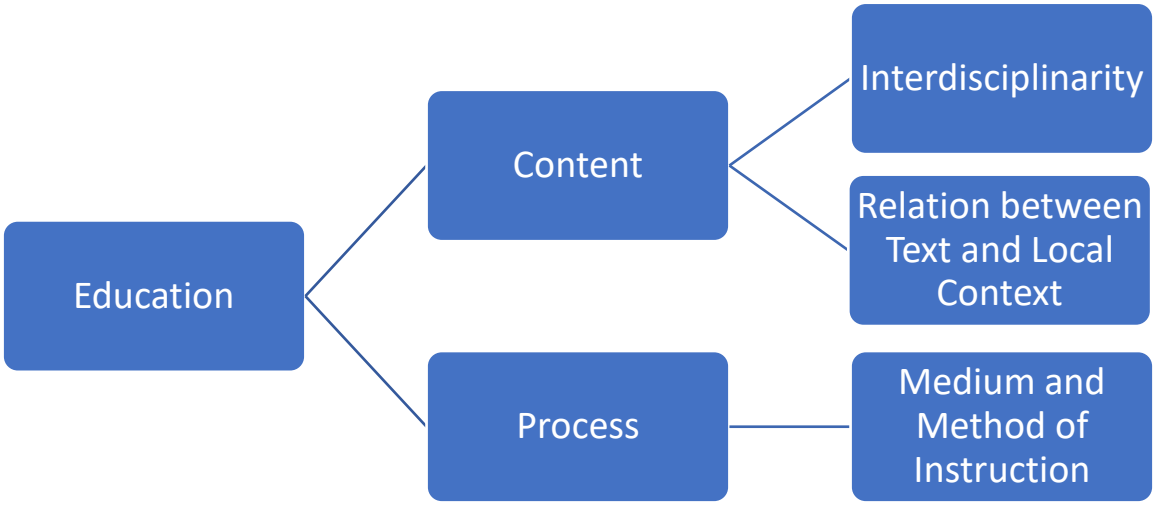

Figure 3.3

The given figure categorizes the themes drawn from responses on the role of the education system as an essential structure enabling both cultural and technical ways of 'knowing' phenomena such as the climate crisis and environmental degradation. The efficacy of such a system was assessed through two key parameters, broadly divided into the *content* of education, versus the *process* through which it is conducted. Analysis of the content focused on the relation between the prescribed text and local contexts, as well as on the interdisciplinarity (or lack thereof) of the curricula. Respondents felt that education at the primary level, particularly in the public sector, does not enable sufficient technical understanding of climate and environment on a conceptual level. Students are unable to engage with these as 'lived experiences,' which later translates into a cognitive dissonance where the urgency and severity of the climate crisis fails to register with the broader population. A key concern for the social sciences is the failure of curricula to engage with local structures and local cultural systems, particularly from the rural

periphery. The ensuing rural/urban divide fails to engage with local 'knowledges' of the natural world, contained in indigenous languages, and presents an anglophonic, atomistic understanding of the same. Another theme under content assessment addressed the lack of interdisciplinary research at local higher education institutions, particularly concerning such vital themes as economic growth amidst the climate crisis.

Mainstream categorization of 'Environmental Science' as a hard science discipline lacking effective correspondence with socioeconomic structures illustrates this, as experienced during the course of fieldwork for this study. Few local Universities feature departments focused on hybrid disciplines, fewer still boast research centres premised on interdisciplinary initiatives across such related disciplines such as Rural Sociology, Climate Anthropology, and Environmental Governance etc. One respondent felt that while *disciplines* such as Economics were evolving to reflect the hybrid, crossdisciplinary nature of modern day issues, the *curricula,* particularly at the primary level, continued to reflect redundant conceptual understandings. This had the effect of impeding student engagement at higher levels, wherever more holistic curricula might be available.

Lack of engagement also featured as a key processual issue, whereby classrooms did not enable dialogic engagement but were based on a 'lecture delivery' model encouraging rote learning. Teacher training was highlighted as a key lacuna, with most national initiatives on education reform focusing on overhauling the curricula alone. Respondents commented on the link between academia, the state, and industry, whereby modes of behavior adopted during the course of learning/teaching impeded engagement with other stakeholders in addressing climate crisis/growth as multisectoral themes. Though the ensuing 'communication gap' was not solely attributed to academia, it was felt by one respondent that Universities were inclined to engage in a 'blame game' of scapegoating the government for the state of research in the country, without taking the necessary initiative. An additional concern cited the impact of a data-poor environment on research that reflected contextual realities accurately enough so as to inform effective policy interventions.

The securitization of data, resulting in questions as to availability, reliability, and transmissibility, was highlighted as impeding the kind of on-ground, locally based research

initiatives tied to climate/environment. Parallels were drawn between state finance for research and development in Pakistan versus China, with a few respondents assessing the lack of indigenous specialized expertise as cultivating a culture of dependence on private, foreign consultation firms. The political economy of the international consultation business was subject to much criticism, drawn from the general feeling that it drained precious resources and formed a dangerous nexus with local pressure groups. Critique of the state of academia was particularly vociferous when it came to disciplines related to Agriculture and Forestry. It was felt that CPEC Phase II, oriented towards boosting agricultural productivity, could not meet its full potential given poor local research and analysis of emergent, and prospective, areas requiring intervention. This malaise in the education sector was also analzyed in relation to the concepts of community and civic action as engendered by school environments, and is later discussed under the heading of cultural systems.

ii) Legislation and Regulation

Aside from education, a key structural system identified by respondents in relation to effective action on the environment/economic growth conundrum, under the impact of the climate crisis, was that of the national legislature. Assessed in relation to the role of the judiciary in making the subject of environment 'knowable' and 'actionable' through law (the word 'environment' not being found in the text of the 1973 Constitution) it was felt that groundbreaking precedents set by the judiciary had failed to prompt necessary legislative intervention by law makers in order to address the gaps in implementation and enforcement. Groundbreaking action by the judicial system may be illustrated through citing the example of three key cases. The first, Shehla Zia vs. WAPDA (1994), saw the Supreme Court recognize the right to a clean and healthy environment as part of the Fundamental Right to Life guaranteed by the Constitution, asserting that the Right to Life:

> casts an obligation on the State to protect it in a manner different from other Fundamental Rights … the State must not wait for a violation of the Fundamental Right to Life to be reported before springing into action, but … remain vigilant of any threatened violations … (Alam, 2018: 15)

This implies a proactive approach to legislation that respondents felt was lacking in the face of ad hoc, abortive action in the fact of a threat as dynamic and multifaceted as climate change, and its impacts on infrastructure investment. Second, the superior courts evolved a 'doctrine of public trust' (Sindh High Court in Sindh Institute of Urology and Transplantation vs. Nestle Milkpak Limited, 2005 CLC 424, Karachi) whereby natural resources such as groundwater are declared as 'national wealth,' enjoining upon the government the task of protecting "the resources for the enjoyment of the general public rather than to permit their use for private ownership or commercial purposes." Respondents to interviews observed the irony of Pakistan lacking a national groundwater policy, or even the incorporation of a comprehesive groundwater governance scheme in the 2018 National Water Policy, in light of this ruling. Further, the role of the tanker mafia, and the abrupt drop in groundwater given unchecked operation of tubewells, was contrasted against the need to ensure access to 'national wealth' for the general public. Lack of availability of necessary data to inform critical policy formation and ineffective institutional arrangements were further identified as impeding vital action on groundwater, which sources 73 % of crop irrigation in Pakistan (Qureshi, 2020).

The state of existing governance mechanisms was assessed in the light of proposed projects under CPEC Phase II, which aim to increase agricultural yield by establishing 8 new private agricultural institutes jointly facilitated by the Pakistani and Chinese states. Dearth of public sector policy mechanisms and regulatory setups was seen as setting a bad precedent for the operation of proposed projects, with more than one respondent citing a need to 'get our own house in order' in order to ensure adoption of cost-effective and efficient new techniques/methods compatible with the national context. One respondent, a former Chairman of the PARC, noted that Pakistan, despite being an agrarian country, was reduced to massive food imports given lack of investment in local research and development (R&D) and effective institutional formation. He futher observed that the Chinese attitude to development being to take the needs of partner countries on board, Pakistan was currently not in a position to "tell them what we need, (because we don't know it ourselves)."

The third case concerns the Lahore High Court breaking international precedent by recognizing climate justice as a part of the framework of the constitution (Asghar Leghari vs. Federation of Pakistan, 2015) The order dated September 4th, 2015, specifies that

> (while) Environment and its protection has taken a centre stage in the scheme of our Constitutional rights. It appears we have to move on. The existing environmental jurisprudence has to be fashioned to meet the needs of something more urgent and overpowering i.e., climate change. From Environmental Justice, which was largely localized and limited to our own ecosystems and biodiversity, we need to move to Climate Change Justice. Fundamental Rights lay at the foundation of these two overlapping justice systems. (Alam, 2018: 22)

This allowed the courts to use the given justice systems as a frame of reference for gauging government action in addressing the multisectoral impacts of climate change. This order may be read in conjunction with a ruling of the Lahore High Court in Imrana Tiwana vs. Province of Punjab (PLD 2015 Lahore 522), which outlined the role of EPA as:

> guardian of the people and the Nature … (having) the onerous responsibility to safeguard the constitutional value of social justice which includes environmental principles of sustainable development … To achieve this objective EPA needs to be fiercely independent and autonomous in reality. (Alam, 2018: 23)

Respondents queried on the role of EPA were quick to note that the body lacked both 'teeth' and 'expertise,' with EIAs treated as ceremonious 'cosmetic' practices. One respondent, having worked in the capacity of ex-DG EPA, highlighted how the Chinese Export-Import Bank (EXIM) would not release funds prior to the filing of an EIA, citing international practice. In contrast, the Pakistani side treated EIAs as 'business as usual,' to be summarily issued with no mechanisms in place for later enforcement or regulation. The respondent further noted how, while working with the National Highways Authority (NHA) on minimizing the impact of CPEC routes on local ecosystems, EIAs were subject to the deleterious effects of political pressure applied to a body (EPA) that is neither fiercely independent, nor autonomous. Furthermore, "there are no qualification or technical expertise requirements under the law for personnel/officers reviewing Environmental Impact Assessments … (which) does not make it mandatory on the EPA to hire experts to review EIAs" (Alam, 2018: 32). Thus, as per one respondent, untrained, poorly informed individuals can, and frequently do, serve on EPA panels, having little by way of expertise in relevant fields. This, in turn, raises questions as to the validity and reliability of issued EIAs.

Regarding the state's role in Climate Change Justice, a respondent who was the recipient of the "Kingdom of Saudi Arabia Award for Environmental Management in the Islamic World" (KSAAEM-2018/19) noted the disconnect between Pakistan's signing of MEAs, and the

mainstreaming of the same through local law and policy. It was highlighted that while MEAs have been key to shaping policy and legislation, and thus the systems of 'knowability' and 'actionability,' vis-à-vis the environment from 1972 onwards, the 18th amendment presents a watershed that dispensed with existing frameworks without necessarily providing viable alternatives. Thus, while the Federation possesses the absolute authority to enter into, negotiate, or execute international agreements on climate/environment, the Parliament ceded its competence to translate this activity into domestic law (implementation) to provincial legislatures. No mechanism allows for federal-provincial interaction on MEA implementation (Alam, 2018), while provinces display disparate levels of capacity in implementing such agreements. Rules and regulations made under the Pakistan Environmental Protection Act, 1997, have been adapted, or scrapped by provinces sans any coordination scheme, removing the regulation of environmental pollution and ecology from the executive ambit of the federal government. The creation of a separate Ministry for Climate Change, lacking a clear modus operandi and in many instances duplicating tasks performed by various bodies at lower levels; the assignation of a state Minister lacking a background compatible with climate/environment governance to this Ministry; and the non-operationalization of bodies such as the Pakistan Climate Change Council (established in 2017 as part of an institutional overhaul of existing climate governance apparatus) speaks of a structural impasse, and a lack of institutionalization of effective cultures of governance.

The role of existing governance structures prompted much debate in one of the webinars attended, raising questions as to the efficacy of nature-based solutions sans legislative nature safeguards and enforcement mechanisms. An attendant concern was the state's reliance on isolated, project-not-policy based interventions, such as afforestation schemes, which though useful do not represent a multisectoral, institutionalized approach to a dynamic, fast-evolving crisis. The Special Assistant to the Prime Minister (SAPM) on climate change, in an online interview to the Islamabad Policy Research Institute (IPRI), dated July 18th, 2021,[4] commented on the vital role of the Climate Change Council, as a key legal body, without addressing the difficulties surrounding its operationalization. Queries referencing threats such as urban flooding, in relation to the lack of regulation of sectors such as property and real estate in Pakistan, were

[44] (https://www.youtube.com/watch?v=CwRzjSlhSAg&t=185s)

met with statements such as ‘our government cannot go and operate in Karachi.’ The underlying framing of an ‘our versus their’ ideation, tempered at times by references to ‘synergetic’ intiatives such as ‘Clean Green Pakistan,’ speaks to the state of coopertive federalism later discussed under the heading of cultural systems. The mention of select government initiatives, attributed to one particular party regime sans any mention of preceding, comparable intiatives, introduces a partisan framing. Glimpses of this framing were also evident in the WED 2021 proceedings televised across the world, as the event showcased state action on climate change justice as the province of select personalities, as opposed to a multistakeholder, multisectoral sphere. The impacts of partisan parochialism were contrasted by respondents against the unified Chinese approach to climate action, formally institutionalized in the constitutions of both the Communist Party and the Chinese state. The difference in approaches, resulting from different models of governance, and the ensuing lack of structural coherence and innovation, was seen to be at odds with the severity of the threat faced by Pakistan. Thus, while phrases such as ‘existential threat’ were frequently employed by legislators in reference to climate and environmental degradation, the nature of legislation spoke of a cognitive dissonance surrounding the immediacy, and scope, of the danger.

Respondents having hands-on experience with the legislative, and regulatory, structural setups in Pakistan identified a ‘knowability’ gap where key legal instruments on forestry and land distribution were in need of assessment and revision. These instruments, such as the 1927 Forest Act, indicate how the ‘knowability’ of climate/environment, through laws and mechanisms aimed at informing structural setups for regulation, illustrate a temporal and spatial disconnect. Drafted by a foreign power in the 20th century, the lack of a law reform commission compounds the impact of such laws in imposing a redundant means of ‘knowing’ the local context, with attendant effects on the viability of structures designed in line with such knowledges. Mr. Shafqat Abbas, Focal Person for Ministry of Industries and Production on Environment and Climate Change, and the winner of the “Kingdom of Saudi Arabia Award for Environmental Management in the Islamic World” (KSAAEM-2018/19), highlighted how the lack of a ‘compatibility analysis’ of laws affected action on ecological justice. The prevalent disconnect, between Pakistan’s extant colonial era laws and a context changing under a phenomena as dynamic as climate change, impedes the national law development process, an additional impact of which is on the state’s inability to translate international MEAs into domestic legislation.

Former DG-EPA, Dr. Mohammad Khurshid, also highlighted the need to revise 'black law' clauses within such instruments as the Forest Act, alongside much publicized 'project-based' approches such as tree plantation drives. Without legislation 'incentivizing' ecological justice as key to social justice, any adhoc, project-based approach was identified as presenting limited gains, subject to the whims of the party in government.

3.8. Cultural Systems and Environmental/Climate Governance

i) Spirit of Cooperative Federalism and Trickle-Down Effects

The structural lacunae identified above were assessed in line with the power of structures, such as institutions, to influence actor perception of their role and situation by generating motivations (March and Olsen, 1989). Structural processes, and the nature of the interrelations on which these are premised, were also analyzed with reference to the generation of greater or lesser degrees of certainty of other actors' responses to select actions (Hall and Taylor, 1996). Respondents working in academia, with experience of collaboration with state structures in attempting to develop research-policy interfaces, commented on the nature of 'cultural systems' embedded in structural setups as being the primary obstacle to effective praxis on the environment/economy question. The 18th amendment, by reorienting structures shaping power distribution and resource allocation, attempted to reshape precepts surrounding the relationship between the Federal Government and the Federating Units. Thus, decentralization was intended to remodel the interrelations that constitute Federalism to better institute the spirit of cooperation and trust vis-à-vis governance. In light of environment/climate, it was felt that the biophysical diversity of Pakistan's landscape necessitated greater influence being accorded to local, provincial structures, which would be more in tune with the needs and perceptions shaping local contexts. Therefore, interprovincial, intraprovincial, federal-provincial, and intraregional cultural and structural setups were referred to by respondents in assessing the nature of climate/environment governance, though the focus remained on the domestic context.

It was felt that the weak coordination, and poor fiscal decentralization, resulting in the aftermath of the 18th amendment (despite its intended objectives) was derived from a lack of correspondence between proposed structural amendments, and prevalent cultural systems. Thus, while the amendment attempted a complete structural reorientation of the model of federalism

prevalent in the country, it failed to present an effective scheme of engagement with the preexisting perceptions/behaviors/beliefs/ideas etc. that would need to evolve so as to enable structural change. Respondents frequently cited the partisan handling of issues deemed 'existential threats' by political parties as reflective of the disconnect at the heart of the existing federal structure. Thus, following decentralization, the reduction of environmental quality has been seen "as a consequence of 'destructive inter-jurisdictional competition' leading to lax environmental regulations or a so called 'race to the bottom'" (Khayam and Ahmad, 2021: 103). More than one respondent felt that the structural setups already in place (at least on paper) were adequate for the purpose of navigating climate/environment governance vis-à-vis CPEC – provided they were operationalized. Deeply entrenched behaviors under 'working' and 'political' cultures were seen as a key hurdle. An equal proportion of respondents felt that some structural overhauling was urgently needed, particularly with regard to regulatory and enforcement mechanisms/processes/bodies, but that the same 'cultural' barriers identified posed a major obstacle.

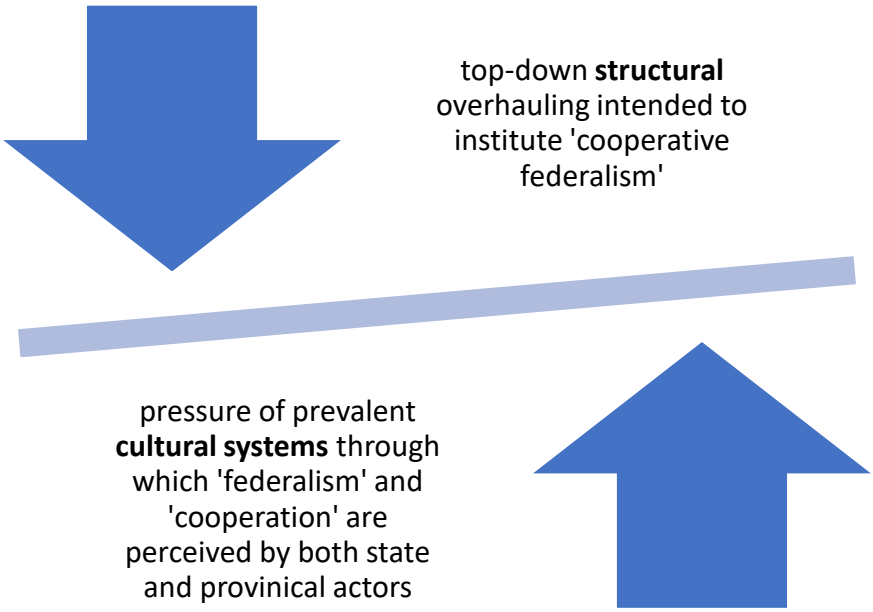

Figure 3.4

Khayam and Ahmad cite how "Despite the differing capacities of the provinces to roll out climate change related initiatives, no province has yet exercised its constitutional right to request Parliament to pass a Federal law related to an aspect of climate change" (2021: 110). The Dean of the Department of Environment Science at IIUI, among other respondents, commented on the nature of bureaucratic red-tapism and federal-provincial distrust as impeding necessary coordination on climate change/environment justice. A parallel lack of communication, and thus trust, between academia and political executives, both at the provincial and federal levels, further exacerbates the overall lack of certainty referred to earlier. Lack of institutional capacity is itself seen as a product of the misallocation of scarce resources, compounded by resource distribution schemes lacking effective coordination under the spirit of 'national welfare.' It was noted that climate change, seen as a crisis multiplier in contemporary literature, has magnified the crisis of governance at play in the structural and cultural inputs informing the Pakistani context. CPEC presents a site of contestation where the effects of this crisis of governance stand to play out over the long-term. It also allows comparative assessment with an alternate model which has the Chinese nation effectively shape its structural systems using a cultural imaginary premised on a holistic understanding of 'positive peace' i.e., social and ecological justice. The 'duality' of China's praxis, for mainland China versus BRI states, was seen by respondents as the product of China's own brand of 'exceptionalism.' Rather than impose its own structures of governance on partner states in line with the liberal peace paradigm of 'exporting' democracy, China's cultural system recognizes 'Zhonghua,' or the Middle Kingdom, as the first civilizational state. It is argued that the uniqueness of China's encounter with modernity, reflected in its becoming the second largest economy in a remarkably short amount of time, means that its systems cannot be exported, with China's developmental and diplomatic praxis premised on engaging with partner states for 'win/win collaboration' alone. Thus, respondents queried on the role of the Chinese state in ensuring 'green investments' along the BRI felt that any such scheme necessitated Pakistan first putting 'its own house in order.' Multiple respondents commented on CPEC not being a 'philanthropic' undertaking, with the Chinese having 'no responsibility' to force better options on Pakistan over those adopted through the state's prevalent legislative and policy-

making structures. The lack of a broader national perspective, including an inability to engage the public on the subject of state action on climate change and environment justice, were repeatedly highlighted in relation with this.

Respondents actively involved with the youth/future generation in a professional and civic capacity highlighted the processual nature of academia as instilling the very 'cultural' perceptions and behaviors that are today impeding coordination and collaboration at the state level. The lack of civic engagement evidenced by the education sector, alongside methods of assessment which promote rote learning sans critical engagement, were seen as producing a brand of 'culture' where concepts such as community, ecology, harmony, and innovation lacked scope. To this may be added the overarching impact of the neoliberal paradigm, both on how local cultural systems perceive the environment/climate/economy, and how this perception shapes structures aimed at governing the same. The 'knowability' of climate/environment through the atomistic, mechanistic, and anthropocentric orientation preferred by neoliberalism is connected with mass exploitation of natural resources in the pursuit of unending growth. The neoliberal archetype was analyzed by some respondents in relation to the impact of resource extractivist colonial regimes on developing states. The lack of correspondence between key environmental 'laws' and local contexts, the anglophonic nature of the discourse on environment/climate, and the obstructionist influence enjoyed by feudal and industrial elites were variously categorized as the legacy of the British Raj by respondents commenting on the structural/cultural impasse in the Pakistani context. An intriguing, and frequently employed, frame in relation to the impact of colonialism was that of 'climate accusation,' whereby some respondents felt 'global warming' to be subject to a sort of ethical accounting. In light of this, states spearheading the industrial revolution were seen to shoulder the blame for fallout from the 'Anthropocene.' This accusation presented both structural and cultural iterations. The former revolved around the economic and political structures propounded by the West as entailing 'the end of history' at the close of the 20th century, with liberal democracy and neoliberal capitalism seen to herald the pinnacle of human political and economic organization. The second highlighted that climate change, environment, and 'prosperity' (i.e., growth) were not simply premised on physical manifestations but were made knowable through a certain mode of framing, prompting a select type of orientation, that in turn prioritized certain themes over others (Hulme, 2010). Thus, the exclusion of pastoral traditions, and other indigenous modes of living,

from the very definition of 'development,' outlines the influence of neoliberal cultural systems at the global stage. This cultural predominance was seen as going hand-in-hand with the export of structural systems premised on consumption and material growth. In light of the standards set by the West, respondents employing the accusation frame felt it was the 'right' of developing states to 'secure' their own growth and development through methods employed to this effect by the West. Authors such as Douglas (1982) have outlined how cultures of blame, with their associated narratives of culpability, inform risk perception in societies, with impacts on attendant structural systems.

ii) Cultural Systems and the Perception of 'Environment' versus 'Growth': Climate Accusation

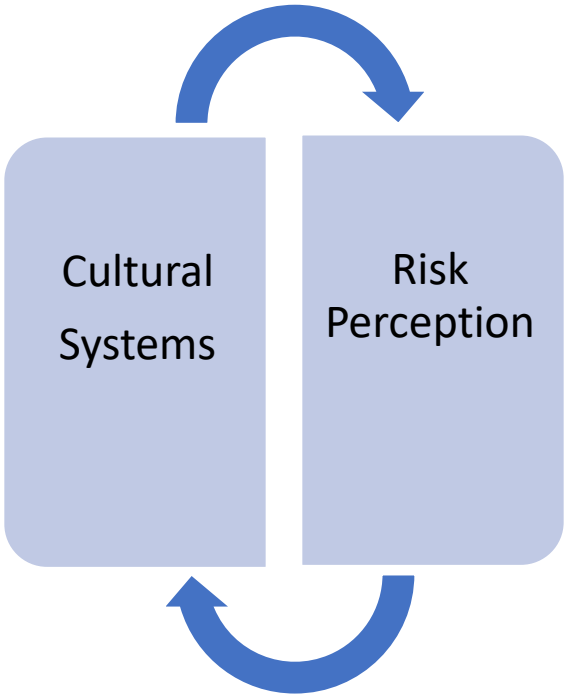

Figure 3.5

Peter Rudiak-Gould applies Douglas' writings on risk to the climate crisis, highlighting how:

> When a society constructs a risk by selecting a danger for attention, it assigns culpability for the threat according to its prexisting tendencies: preconceived villains (depending on the society, these may be out-groups, rivals within the in-group, or the victim himself) will be deemed blameworthy, and appropriate action will be taken… (2014: 372)

Respondents commenting on the nature of climate change/environmental degradation frequently cited Pakistan as the victim of given biophysical realities over which it exercises no control. The tendency to assign blame to 'the other' for catalyzing the current climate crisis was frequently coupled with an agency framing whereby countries such as Pakistan were seen as having little to no clout in taking assertive action on climate change or environment justice. This was coupled with citing the impact of colonialism on existing cultural and structural systems which were seen to lack correspondence with local contexts. Thus, the 'other' was culpable not only for the climate crisis, but for deliberately implanting top-down systems impeding the realization/mobilization of action needed to address said crisis. Climate accusation was also linked with a prioritization of segmented approaches eyeing short-term gains i.e., attaining 'energy security' through use of coal by compromising with nature for the immediate future, thus harvesting 'easy,' 'cheap' and 'quick' gains. The cumulative impact of the climate crisis on said gains prompted little by way of response, with the risk of 'stranded assets' seen as too remote to pose any significant danger.

A parallel theme was observed whereby an 'in-group' i.e., the political, industrial, and academic establishment, was seen as lacking the necessary attitudes and approaches for 'knowing' and 'acting on' climate change and environment justice. Intriguingly, no accusation framing was leveled against China, the world's largest CO2 emitter, though China's 2013 'airpocalypse' was cited by more than one respondent as illustrative of the pitfalls of a 'growth-centric' approach. One prospective reason identified was the effectiveness of China's political, economic, and social structures in responding to changing contexts through a process of constant reform. One respondent, a retired officer of the foreign office having more than a decades' worth of experience in China, and the author of a seminal treatise on China's 'soft power code,' analyzed the nature of the Chinese system as dynamic, innovative, and culturally grounded in value systems informing all state structures. Commenting on China's civilizational stature as prompting an understanding of 'prosperity' through millennia (i.e. long-term), an emphasis on

‘guanxi’ i.e., relationships, was identified as essential to the functioning of these structures. The respondent outlined the co-existence of Taoism/Buddhism/Confucianism in China, with Confucianism being the key concern of the literati/knowledge circles. He cited the CCP’s record of service delivery over the course of the past century, highlighting how the Chinese structural system, premised on reform informed by key cultural beliefs about ‘authority’ and ‘leadership’, inspired public trust in public policies – more so than in the USA or Pakistan. Thus, the level of credibility of governments at municipal or local levels was ranked as far higher than in either of these two states, with a structured process of reform premised on ‘reverse engineering’ time-tested leadership strategies.

A comparison of the Sino-Pak context illustrates what authors, e.g., Buckley (2021), have identified as China’s ability to integrate such internationalized abstract concepts as ‘sustainable development’ into local cultural systems, thereby overcoming potential obstacles to structural reform under the ‘climate accusation’ frame. Thus, while ‘climate change’ may once have been seen as an attempt by developed, Western nations to impede China’s economic growth in domestic discourse, this is no longer the case (Goron, 2018). Instead, transformative action on structural reform vis-à-vis ec-civilization has been rooted in traditional cultural systems with a comprehensive conceptualization of the interrelations informing environment-economy-society. Thus, while in the past China was inclined toward ‘climate accusation’ as a key means of outsourcing responsibility for climate change to the West, it is now an advocate of transformative action which equates ‘putting nature first’ to ‘putting people first,’ given the overarching concept of ‘human-nature’ harmony. The effects of the ‘climate accusation’ frame in the Pakistani context were identified by a respondent engaged in field experiments in Quetta (2005) and Swat (2006), aimed at ascertaining how preexisting cultural, and structural, systems in the Pakistani context may be employed for mobilizing behavioral change in public attitudes towards climate/environment. Dr. Muhammad Irfan, the Dean of Environmental Science at International Islamic Univerity Islamabad (IIUI) and organizer of the two studies, highlighted how locals, when told of the idea of climate change, and attendant behavioral interventions, were predisposed to dismiss it as a ‘Western conspiracy.’ The same message, translated into established conceptualizations of ‘hassanah,’ and the objectives of the shariah in relation with the interrelation between man and nature, prompted a much more positive response. Members of the local public were approached to reflect on climate and environment from the lens of such

concepts as ‘beautiful conduct’ in Islamic teaching, alongside the ‘Maqasid-ul-Shariah’ (objectives of the Shariah). When asked to view nature, and natural resources, as a baseline for safeguarding the fundamentals for sustaining and protecting life, lineage, intellect, and faith, the public response proved more positive than when these same concepts were presented merely as ‘international goals.’ Dr. Irfan further highlighted the need for employing the mosque as a key structural setup for consolidating efforts for better ‘knowing’ and ‘acting on’ climate/environment, with the Friday sermon presenting a key, if underutilized, means of action for the state.

A parallel interpretation of employing indigenous cultural systems for ‘knowability’/’actionability’ highlighted how the (re)production of such systems was reflective of the degree of agency exercised by states, particularly in a postcolonial context. Thus, the ‘outsourcing’ of climate blame, and the expectation that Western states take the sole onus for the corrective and adaptive measures necessitated by climate change, may be seen as having multiple attendant effects. One of these effects, identified by respondents commenting on China’s approach to multilateral engagement, concerns the perpetuation of a relationship of dependence between the developed world and their ex-colonies. Thus, former colonies display a reliance on an aid-based model for tackling climate change, citing the need for the developed world to take sole intiative. Such states are also inclined to display a proclivity for what Hanson dubs the ‘progress trap’ i.e., a tendency to adopt short-term approaches to long-term problems, “vulnerability to takeover by vested interests, overspecialization in solutions, and, in an age of globalization, of underestimating the difficulty of overcoming governance shortcomings” (Hanson, 2019: 7).

While the importance of climate finance can not be denied when it comes to adaptation and mitigation efforts in countries faced with an acute scarcity of capital resources, the expectation that capital influx alone is a catch-all solution for ‘acting’ on climate/environment can only yield short-term gains. Such an influx, sans indigenous efforts at mobilizing prevalent cultural systems to undertake necessary structural reforms to institionalize needed changes, prompt a project- and not policy-based scheme of intervention that fails to reorient prevalent attitudes to adapt to changing contexts under climate change. Respondents commenting on Sino-Pak negotiations over CPEC highlighted the effects of this ‘aid-based’ mode of action on Pakistan’s ability to

identify areas demanding immediate investment and innovation for longterm benefit. To this end, the lack of synergetic research and development initiatives, designed to proactively identify credible solutions, presents a key issue. Dr. Yousaf Zafar, Former Chairman of the Pakistan Agriculture Research Council (PARC), and International Cotton Advisory Committee (ICAC) Cotton Researcher of the Year (2012), commented on a typical interaction between Pakistan-China representatives on the subject of agriculture investments through CPEC. China, as per Dr. Zafar's analysis, presents a non-aid based model of engagement premised on soft-loans for investment as identified through the input of local political elites. CPEC Phase-II being geared towards boosting agriculture yields, lack of preexisting investment in research and development surrounding agriculture, and the absence of a research-policy interface, meant that the Pakistani side, when asked to identify priority areas for investment, could not effectively do so. As per Dr. Zafar, 'we don't know what we want from them;' highlighting a need to 'get our house in order.' The 'house' motif came up frequently during the course of multiple interviews as respondents felt that the Pakistani side lacked the unity, and clarity, of purpose evidenced by their Chinese counterparts, as successive political regimes continued to take issues such as climate/environmnet as a matter of 'routine business,' regardless of the threat they posed. In contrast, it was felt that the Chinese side was more diligent in its attempts to ensure that projects under CPEC met established international requirements of environmental feasibility and sustainability. Nonetheless, given China's 'non-interference' model, the onus is on local structural setups to monitor and regulate such requirements which, as per the former DG of EPA, Dr. Khurshid, are subject to a degree of political pressure.

At the time of writing, China faces unprecedented levels of heavy rainfall causing flooding, and mounting infrastructure damage in provinces like Henan. The Guardian, reporting on the damage inflicted by heavy rains, cites Cheng Xiaotao, a member of the China national committee on disaster reduction, as commenting on China's need "to develop a coordinated emergency response mechanism for such situations" (Guardian, July 26, 2021). The newspaper further quotes an official Chinese news agency, Xinhua, and the Central Commission for Discipline Inspection, as underscoring the need to acknowledge climate change as the cause of recent extreme weather events around the world. Jia Xiaolong, the deputy head of the national climate centre, is reported to have told the China News Agency that the heavy rainfalls in Henan occurred "against the backdrop of global warming", adding, "This year, whether it's in China or

elsewhere in the world, the frequency and intensity of extreme weather events are all closely related to global warming" (Guardian, July 26, 2021). Given the impacts of the climate crisis on existing infrastructure, and its potential to decimate dividends from prospective investments, it is mandatory that the cultural systems underlying structural setups in politics and economics be cognizant of the need for grounded risk calculation and dynamic reform. The cultural values at the core of China's governance, it is argued, reflect the potential to do so, as indicated by the innovative dynamism reflected in the CCP's reforms. The next chapter explores how China's cultural system, drawing on Confucian influences, is evolving in response to the impact of rapid economic growth, modernization, and climate change. 'Shengtai wenming,' as a concept reflective of this dynamism, is explored using the the Galtungian notion of 'positive peace,' albeit with a balanced focus on social, as well as ecological, justice in peace theory.

4. Structure/Culture Interplay: 'Shengtai Wenming' in the Chinese Context

In continuation of the structural/cultural conceptual framing outlined in the previous chapter, it is intriguing to note that the origins of 'shengtai wenming,' a concept key to President Xi Jinping's 'China Dream,' lie in academia. Authors such as Agnew speak of the importance of the 'places' of knowledge production, citing "sociologically meaningful but also typically localized sites where local, national, and long-distance influences on thinking and research practice" align (2011: 303-4). Thus, 'shengtai wenming,' assessed by Buckley (2021) as a conceptual distinct alternative to the 'green economy,' draws on the 'knowability' of man's place in nature through the lens of cultural systems grounded in Chinese history and philosophy. Ye Qianji, the first to use this concept in relation with developing sustainable agriculture in China, drew on "a radically different ethical foundation … when compared with industrial civilization: respect for nature to realize ecological justice as opposed to utilitarian, profit-driven and technology-innovation oriented functionalism" (Marinelli, 2018: 373).

Lila Buckley, writing for the Green Economy Coalition (GEC), examines the collaboration between Chinese leaders, researchers, and companies in finding innovative solutions for accelerating structural reform in the age of the climate crisis. She notes that the innovativeness of 'eco-civ' 'is not in green policy proposals, but "(in bringing) together a singular, structural vision for ecological development as expressed formally in the 13th Five Year Plan (FYP)" (2021: 12). In light of this, Xi Jinping's vision interprets environmental progress as "inextricably linked to good governance" (Buckley, 2021: 12) necessitating measures such as a new evaluation system for assessing the performance of leaders and economic actors, as well as a strong crackdown on corruption. Therefore, while the proposed targets of eco-civ seem to echo those of 'sustainable development,' the approach adopted under the concept is far more comprehensive. The 'civilization' aspect problematizes the role of governance in reforming the structural prerequisites underpinning models of growth, grounded in cultural precepts of China's multilayered identity as a 'civilizational state' (wenming guojia).

The use of cultural systems to initiate a wider push for structural reform capitalizes on existing cultural resources in order to legitimize and sustain change. Qin Pang (2019) comments on a key consequence of China's rapid economic modernization, i.e., creating an increasingly powerful and autonomous society. To this may be added a second major impact of fast-paced economic growth – the alarming deterioration of China's domestic ecosystems, and its attendant effects on global ecological stability. These twin effects must be understood in the context of the Chinese state which, according to Qin, "is not an integrated power entity as described by most existing theoretical models, but a set of scattered power entities which conduct multilevel and multidirectional interactions with society" (2019: vii). An intriguing sidenote is how prevalent cultural systems conceptualize what is considered a 'crisis' situation. The Chinese compound word for crisis, 'weiji,' translates as both challenge and opportunity, implying the need, as well as the scope, in the present moment of reenvisaging the heuristics behind 'growth' and 'the good life.' Thus, eco-civilization is threaded through with Xi's 'four comprehensives' (the comprehensive completion of a moderately prosperous society, comprehensively deepen reform, comprehensively promote the rule of law, and comprehensively and strictly manage the Party), in line with the 2017 'China Dream' of national rejuvenation. However, the modernization envisaged by this vision is not synonymous with Westernization, featuring a development pathway rooted in indigenous cultural systems.

Rafatjoo (2020) highlights the ethos of Chinese rejuvenation (not *rise)* as a destined return to China's natural place as the 'Middle Kingdom' through rapid sociocultural change. Thus, eco-civilization is not merely a process of technical restructuring but indicates a social and cultural reshaping of governance through a "combination of old values of civilization, culture, and nature, along with impetus for modern digital infrastructure and technocratic policy" (Buckley, 2021: 18). In light of CPEC, and the BRI, an attendant, equally vital, implication of this process may be surmised as global security.

The 'Ecological Civilization Opinion Paper' underscores this security component in two ways. The first concerns the traditionally accepted notion of conflict stemming from climate change resource depletion and environmental pollution, and the attendant risk of societal unrest. The second, more dynamic assessment, highlights the risk of conflict (both within China, and between China and the world) inherent in structural change itself, as "leaders push through the

contentious process of overcoming vested interests and realizing structural changes" (Buckley, 2021: 18-19). In the age of disinformation and shifting geopolitical power balances, this foregrounds the need for centralized, reform focused organizations coordinating external and internal security in line with the master narratives of China's rejuvenation. These narratives draw on key pillars of Confucian and Daoist philosophy which, as per scholars such as Qin Pang (2019); Schonfeld and Xia (2019); and Liu et. al (2018) are undergoing a revival in informing China's innovative, reform-focused understanding of state-society relations.

Pan Jiahua, Director of the Institute for Urban and Environmental Studies at the Chinese Academy of Social Sciences, highlights the need to go beyond a narrow understanding of shengtai wenming as an abstract set of 'moral and ethical behaviors' aimed at 'harmony' between man and nature. For Pan, the concept is premised on social justice and respect for nature which "are fundamental social values which should inform political economy" (Marinelli, 2018: 380). In the context of peace theory, shengtai wenming aims at easing an increasingly intense, albeit understudied, form of conflict – that between man and nature – while promoting the prioritization of a social form of civilization that sees people, society, and nature engaged in harmonious living (Pan, 2013). Liu et al (2018) outline how the concepts of social and ecological justice outlined above are not merely drawn from international discourse but resonate deeply with philosophies at the heart of China's cultural systems.

In practical terms, the impact of 'eco-civilization' as premised on 'harmonious' interrelations between environment-economy-society has prompted a synergetic program for transformative action within China. Goals such as establishing a circular economy and pollution reduction operate in sync with rural vitalization; prompting schemes for green 'innovation' strengthening and the incentivization of green 'finance.' A governance-centric approach to climate and environment has seen the CPC pursue poverty alleviation alongside 'eco-civilization,' with proof, as per Hanson (2019), that decoupling between economic growth and environmental pollutants is beginning to take shape. Hanson (2019) further argues how eco-civilization has added two new dimensions to the environmental, social, and economic sectors informing sustainable development, as identified in the 1987 Brundtland Report.

The areas of politics and culture, therefore, allow a structured process of reform ensuring synergetic interlinkages between the other three sectors, by comprehensively coordinating planning and accountability. Thus, the Yangtze River Economic Belt (YREB) is indicative of ensuing policy-oriented reform, with ecological red lines restrictions deployed alongside a stop to further large dam construction (Groff, 2018). Zhejiang and Guizhou Provinces further evidence the transformative potential of eco-civilization in terms of synergy, the first presenting an eco-economic experiment involving a 'five-system approach,' centered on a circular economy. The second, Guizhou, highlights a modernization transition involving hi-tech industrial innovation, and education geared towards the protection, and enhancement, of ecological assets. Such a transition aims for poverty alleviation through the creation of new economic sectors, with macro-level reform involving the integration of IT and artificial intelligence in expanding the service industry.

A key element of the ethos prompting China's drive for ecological, as well as social, justice, is the disruptive nature of restructuring existing systems, which entails equal distribution of both the burdens, and the benefits, resulting from alternate structures. This is especially relevant given the emphasis on rural vitalization contained within eco-civilization, as the establishment of nature-spaces i.e., ecological redlining, national parks, green corridors, and functional zones, necessitate displacement of certain populations. In light of this, a focus on 'village rejuvenation' has been coupled with practices of co-management, where local communities, offered capacity development training in marginal areas, co-manage authority in setups such as the 'River Chiefs' system. New auditory setups, such as the eco-environmental audit in the YREB, are intended to ensure provision of essential services to the people of China while determining the impact of eco-civilization on development improvements (Hanson, 2019; Chan, 2018). Hanson (2019) identifies key pilot provinces and cities that illustrate the potential of eco-civilization as a practicable plan for structural reform, premised on a cultural conceptualization of environment-economy-society interrelations. Of these, Shenzhen, Xiamen, and Changsha have been acknowledged by the United Nations Development Programme as model eco-cities (2016). China's 14th Five Year Plan (FYP), approved by the National People's Congress in early 2021, highlights the importance of high-quality green development and innovation in addressing the reduction of poverty and inequalities alongside environmental protection, by building on the climate and energy focus of the 13th FYP.

The 14th FYP addresses ground-level ozone pollution (the first document of its kind to do so) as well the role of GHG emissions in addition to carbon dioxide i.e., methane and nitrous oxide – a comprehensive approach meant to incorporate agriculture and water resource management alongside sectors such as industry and energy. Spatial planning and ecological redlining are highlighted as key to tackling climate change, desertification, and biodiversity loss through an integrated, synergetic approach involving the participation of local, provincial, and national administrations. To this may be added the role of green finance, with the central government coordinating with private capital in order to create a market-supported system of ecological compensation which realizes the value of 'ecological products.' Thus, spatial planning and development, premised on a conceptualization of 'space' and 'progress' that incorporate attendant concepts of 'harmony,' are key to Xi Jinping's vision of a 'Beautiful China.' The concept may be seen as geared toward not only environmental protection and conservation, but also comprehensive poverty reduction through the pursuit of social justice alongside ecological justice.

4.1. Cultural Systems and 'Shengtai Wenming': Confucian Revival in State—Society Relations

Ye's use of the concept of eco-civilization may be contrasted against what Crutzen and Stoermer (2000) characterize as the theory of the Anthropocene, both of which are premised on cultural systems used to conceptualize such themes as harmony, prosperity, inter-generationality, and livelihood. This implies the need for rethinking the cultural bases at the heart of the modern neoliberal paradigm, in order to ascertain the kind of institutional changes needed to restructure governance in line with social and ecological justice. Liu et al. (2018) identify how these intertwined themes are approached in 'shengtai wenming' through an interrelationship between minsheng (livelihood), suzhi, and zaofu zisun houdai (benefiting future generations), which may be further contextualized through the impacts of a revival of Confucian thinking within Chinese society as highlighted by Qin (2019). A fundamental thread connecting all these systems is a focus on collective action vis-à-vis well-being and quality of life, as opposed to the orientation of neoliberal environmentalism and consumerism towards individual responsibility, justice, and skepticism in relation to the same (Diprose et al., 2018). Thus, as per Liu et al.,

> In contrast to neoliberal self-governance which appreciates the blurring of private life and the political/public through the minimization of state power, the value of individuals in the Chinese sociopolitical context emphasizes their contribution to the public/nation … affirms a hierarchical political structure which places the collective and the nation ahead of the individual. (2018: 7)

This impacts structures used to 'know' and 'act on' human-human, human-nature, and nature-society harmony, premised on an acknowledgment of the mutual reinforcement, co-existence, and interdependence between the same that is unparalleled in Western understandings of sustainability (Zhang, Li, and An, 2011). As per Sneddon western ecological economics tends to "overplay the 'economic' in relation to the 'ecological'" (2000: 528), while 'eco-civilization' places people's well-being at its center by indicating the need to ensure harmony between human and nature through both social and ecological justice.

Minsheng, a key component of social justice, therefore, emerges as strongly centered around environmental sustainability, for given lack of access to "clean water and air, safe food, and a comfortable environment, social conflicts and struggles for a better environment could result in political and social instability" (Liu et al., 2018: 5). It also highlights the dual needs of avoiding intergenerational transmission of poverty, while ensuring the successful transference of culture. Key to this culture is 'minsheng' envisioned under the overarching precept of 'small prosperity,' or Xiaokang, a Confucian imagining of the ideal society. Such a concept enables focusing on 'the good life' beyond such modern metrics of development which "value efficiency without equity, pay too much attention to urban development while ignoring the rural and emphasize the increase of GDP while neglecting the promotion of the quality of life" (Liu et al., 2018: 5). To this may be added the idea of 'suzhi,' which has been roughly translated as 'human quality.' The physical, emotional, and mental 'quality' of people has been central to Chinese governance cultures from the 1980s onwards. Such quality, translating into ability, is intimately connected with the *context* in which material and spiritual lives are fashioned, spread across physical, moral, cultural, and scientific components. Authors such as Jacka (2009) and Kipnis (2007) relate social inequality with disparate levels of suzhi, which may be further analyzed through the lens of inter-generationality (daiji) The 'suzhi' of future generations (houdai) is reflected in the well-being of the environment, an analysis which is more comprehensive than the utilitarian 'needs -based' assessment of western discourses on sustainability. According to the People's Daily:

China's construction of ecological civilization … pursues social and ecological justice and ecological security rather than maintains the social justice based on human needs; requires the harmony between human and nature, rather than pursuing the maximum benefits from the environment. (17/10/2015)

Zaofu Zisun Houdai may thus be related with a major dimension in Confucianism involving its ethical system "which is a set of behavior patterns revolving around social relations, especially family relations" (Qin, 2019: 18). A second dimension, relating with its function as an official orthodoxy under such dynasties as the Han (206 BC – 220 AD) concerns political legitimacy premised on what Guo (2003) identifies as four key concepts: the Mandate of Heaven (tian ming), rule by virtue (ren zhi), popular consent (min ben), and legality (he fa). Thus, the ruler, possessed of the mandate of Heaven, was placed, in the Confucian paradise of the Great Harmony (da tong), as the most virtuous man on earth. Scholars such as Mencius characterize this virtue as the exercise of benevolence towards his people. 'Min ben,' as per Qin, may be translated in the sense of "regarding the people as the roots of the state" (2019: 19), with 'he fa' or legality, seen in the Chinese context as based on 'family rules, clan norms, community customs, and social traditions' than on common laws. Qin's work (2019) enables an understanding of Confucianism as a key cultural system employed to inform state and social structures repeatedly through the course of Chinese history, and especially at moments of 'great change.' In fact, the Confucian school (rujia sixiang) itself is said to have emerged out of the collapse of the social order and stability provided by the Zhou dynasty (1046-256 BC), with society at the time "undergoing major social restructuring brought by unprecedented economic growth, for example, the use of iron for agricultural implements … commercialization, and urbanization" (Qin, 2019: 21; Tu, 1989) The use of Confucianism to structure a social order was employed by scholars such as Dong Zhongshu (179-104 BC) at the time of the Han dynasty, building a "nationalistic cosmology in which the unity of heaven, earth, and human forms the foundation of peace and harmony" (Qin, 2019: 23).

Similarly, at the time of rapid technological advances and changing socioeconomic conditions experienced during the Song dynasty (960-1279 AD), the decline of the aristocracy and the rise of new social classes prompted the rise of neo-Confucian schools such as that of Zhu Xi (1130-1200 AD), called the 'School of Principle' (lixue) with Principle (li) translated as the essence of morality based on the extension of knowledge and investigation (gewu zhizhi) This

understanding of social structure and governance is at odds with the minimization of state power envisaged by 'democratic' states such as the UK. Martin Jacques, in his seminal text 'When China Rules the World' (2009), comments on the Confucian tradition of 'virtuous' government which emphasizes the *quality* of government, instead of the way rulers are selected, as evidence of the pragmatism at the heart of the Chinese context. The economy-environment-society relationship envisaged by Xi Jinping's Zhongguomeng (China Dream) is built on structures of governance premised on such a culturally grounded concept, hence scholars such as Buckley commenting on "none before him (having) placed governance reforms at the heart of these (green economy) efforts" (2021: 15).

4.2. Cultural Systems and Peace Theory: Implications of 'Tianrenheyi' for Galtungian 'Positive Peace'

Ye Qianji in outlining the concept of shengtai wenming, asked a fundamental question: "Rendingshengtian" haishi "Tianrenheyi"? literally translated by Marinelli as "'Man's will, no heaven, decides' or 'Man lives in harmony with heaven'?" (2018: 375). Of these, Ye proposed the second to be true, premised on the traditional Confucian philosophy of 'tianrenheyi' (unity of heaven and man) which formed a key tenet of the sociopolitical order in ancient China. 'Tian' may also be interpreted as nature, or the natural order, instituting an idea of harmony, or unity, that scholars like Pan argue proposes a model of ecological prosperity (shengtai fanrong) which "is not a simple form of material prosperity, but a kind of prosperity based on the harmony-unity-integration between man and nature" (Pan, 2015: 215). In peace theory, Galtung builds on the concept of 'positive' versus 'negative' peace by arguing

> … peace would be a strange concept if it does not include relations between genders, races, classes, and families, and does not also include absence of structural violence, the non-intended slow, massive suffering caused by economic and political structures in the form of massive exploitation and repression. (2013: 173)

Chinese cultural systems, while focused on the interrelations identified by Galtung, add to these yet another dimension – that of the interrelations between man and nature. Thus, 'positive peace' cannot be considered a comprehensive concept unless it address a key source of violence – that which is perpetrated against nature. Cognizance of the impact of man-nature violence has begun to penetrate institutional structures around the world, as evidenced by the International Criminal

Court (ICC) attempting to institutionalize an understanding of 'ecocide' as a crime warranting persecution. The definition for ecocide released by an ICC panel of experts for the consideration of states reads as follows: "unlawful or wanton acts committed with knowledge that there is a substantial likelihood of severe and either widespread or long-term damage to the environment being caused by those acts."

Commentators have argued that the ICC advocating for recognition of the concept of 'ecocide' as on par with war crimes stands to change the way the environment is valued in international law. "There is something powerfully urgent about the idea that nature has rights," says Mitch Anderson, founder and executive director of Amazon Frontlines, an organization that works with Indigenous communities in the Western Amazon to protect their lands. "The [ecocide] law would ensure that nature has a legal voice" (Time, February 2021). Indigenous tribes in regions such as South America have always considered nature, or mother earth, as being a distinct, living entity, with states such as Bolivia going so far as to grant this entity the aforementioned legal personality through the 'Mother Earth Law' which stands to safeguard her 'rights.' In the context of 'tianrenheyi,' an understanding of 'harmony' stands to introduce a new dimension to peace theory, one that engages with the connection between social, economic, and environmental historical contingencies. This approach has been analyzed by scholars such as Pan as a paradigm shift moving away from the logic of industrial civilization

> … which is based on utilitarian ethical principles, aims at the maximization of profit, and ultimately places its priority on the accumulation of capital for the few, while directing much less care, or no care at all, towards people and nature. (Marinelli, 2018: 381)

The concept corresponds with the identified themes of 'social justice' and 'prosperity,' which are key to Galtungian notions of 'positive peace,' embedding these in an overarching cultural heuristic of 'harmony' that, in turn, informs structural systems. Bennett outlines the relevance of eco-civilization for 'the values that peace research makes explicit: respect for the rights of all human beings, social justice, ecological harmony, and the resolution of conflict through nonviolent means (2016: 170). Additionally, scholars such as Reardon (1989) differentiate between 'war-systems' and 'peace-systems' thinking, assessing that while the former is 'dualistic' and based on 'ends and goals', the latter focuses on 'means and processes' through the use of 'both unity and multiplicity.'

Thus, 'tianrenheyi' allows for an analysis of 'positive peace' that emphasizes relationships, connection, and process through a holistic examination of the interrelation between social justice and ecological justice. According to John B Cobb Jr., a prominent process philosopher and 'environmental evangelist,' "an individual entity is not a substance at all, but rather a synthesis of relations" (2019: ch.3). These internal relations are then assessed as giving rise to communities, with ecological civilization seen as prioritizing the connection between values and structural change through which communities operate. Peace theory, as a scheme of heuristics premised on select ontological and epistemological assumptions, can better engage with the cultural, structural, and direct iterations of violence, by expanding its scope of engagement to incorporate a broader understanding of 'harmony' and 'justice.'

4.3. Structural Systems and the Praxis of 'Shengtai Wenming' along the BRI

Arif Rafiq, non-resident scholar at the Middle East Institute, focused on the economic, political, and strategic implications of the China-Pakistan Economic Corridor (CPEC), interviewed Dr. Christoph Nedopil Wang, inaugural director of the Green Belt and Road Initiative Centre under the International Institute for Green Finance, housed in the Central University of Finance and Economics, Beijing (Green BRI Center, IIGF-CUFE) on the subject of China's environmental governance. The interview, aired as a podcast on July 9th, 2021, under the think tank 'Tabadlab's 'Dragon Road' series, was titled 'China's Carbon Footprint' and explored the structural parameters of a 'green China.' Rafiq cited a joint 2018 study by Boston University's Global Development Policy Center and the World Resources Institute (WRI), titled 'Moving the Green Belt and Road Initiative: From Words to Actions.' The report argues that "Chinese finance and investment in energy and transportation are heavily tied to carbon-intensive sectors and are not aligned with host country NDCs in BRI countries." In light of this, Rafiq identified how the PRC has been instrumental in adding over 6,000 MW of coal power to the Pakistani grid, increasing its share to roughly 20 % of all thermal power generation in-between 2014-2019. Coal investments form a major portion of the energy investment under CPEC.[5] The logic of 'energy security' is frequently propounded in outlining the need for coal, projected as a 'base fuel' with

[5] (http://cpec.gov.pk/energy)

cheaper, more stable, pricing; compatibility with local electric supply grids; and uninterrupted energy supply, as opposed to the intermittent flows generated by AE resources. Further, as highlighted by Dr. Wang, China's model of investment in BRI states is premised on the agency of local governments, factoring in the demand of local political elites for coal power. A comparison may be made using Bangladesh which, in 2021, approached the PRC for the cancellation of some coal related investments, with the Chinese embassy in Dhaka outlining the PRC's future initiative to not support any coal-related, or highly polluting, projects. Dr. Wang outlined how China's policy structure under 'Green BRI' is still evolving, with the PRC emerging as a strong advocate for greening BRI investments by the end of 2020.

The gradual establishment, and evolution, of international, multilateral platforms, premised on an extension (not export) of the cultural systems informing domestic Chinese action on social and ecological justice is a key illustration of this. Thus, consolidation of China's scattered regulatory frameworks on environmental action, in line with Xi Jinping Thought on Ecological Civilization, has prompted the creation of bodies to coordinate, collaborate, and facilitate knowledge, communication, data, and technology exchange on the same along the BRI. Till 2018, the PRC's National Development and Reform Commission (NDRC) was tasked with managing greenhouse gases and combatting climate change, with one of China's then Environment Minister's, Zhou Shengxian, quoted by the China Dialogue as saying: "We take care of carbon monoxide, while carbon dioxide falls under the National Development and Reform Commission" (March 14, 2018). The China Dialogue went on to title China's major structural overhauling of its environmental governance apparatus as 'from nine dragons to two,' citing how, in common parlance, "people have long used the term "nine dragons rule the waters" (jiu long zhi shui) to refer to the fragmented roles and responsibilities for managing the environment." These two 'dragons' are the Ministry of Ecological Environment (MEE), and the Ministry of Natural Resources (MNR) respectively, which were created to coalesce the fragmented responsibilities of various government departments. The MEE adopted most of the roles of the Ministry of Environmental Protection, and incorporated pollution-centric functions from NDRC. In 2019, the MEE jointly initiated the Belt and Road Initiative International Green Development Coalition (BRIGC) with international partners after the second Belt and Road Forum, supervised by its own secretariat. In December 2020, the BRIGC released the "Green Development Guidance for BRI Projects Baseline Study Report" (formerly known as "Traffic Light System"). The Guidance

outlined a framework for the classification of BRI projects along 3 categories (red, yellow, and green) depending on their environmental impacts. This corresponds with Xi Jinping's 'Ecological Red Lines' (shengtai hong xian) concept, first outlined in 2011, when the State Council of China issued the Opinions on Strengthening the Priority Work of Environmental Protection. In 2014, Xi sharpened the idea into a 'double equation: "protecting the environment equals to protecting productivity, and improving the environment also equates to developing productivity"' (Schonfeld and Xia, 2019: 10). China's policy of noninterference in the political and socioeconomic structures/cultural systems of partner states implies a joint, collaborative approach to 'greening' BRI investments, where host states must take proactive action to capitalize on China's emergent role as a major investor/innovator in green technologies. As per the Green BRI Center, reliance on 'dirty' power sources may be changing, with 57 % of Chinese overseas investments in energy in 2020 being allocated to wind, solar, and hydro, up from 38 % in 2019. Nevertheless, share of coal investments is also rising (15 % in 2018, to 27 % in 2020) with the economic impacts of COVID19 ostensibly pushing states to fall back on energy resources perceived as more reliable.

In commenting on the dynamics of perception and calculation informing the political economy of coal and green energy, Dr. Wang highlighted the emergent need for upgrading financial risk management practice, in order to better understand the regulatory and technological impacts of climate change on the energy sector. While discussing China's goal of carbon emissions 'peaking' by 2030, he underscored the difficulty of phasing out large coal investments in the long-term. Thus, the incentives of short-term power generation surges premised on coal power, have an underlying asset risk which translates into a fundamental economic liability. Buckley and GEC assess this same element in outlining the key contradictions which have come to define China i.e.,

> … (it) is the world's largest emitter of greenhouse gases but is also home to the planet's largest (and still growing) carbon market. It has nearly half the world's coal power stations, but also more installed renewable energy than any other country. It leads the world in both environmental destruction, and forest restoration. (2021: 7)

The current trend in this contradiction rife context may be outlined using a key observation by Schonfeld and Xia:

> Liberal democracies entered the climate crisis with highly developed infrastructure and strong environmental regulations but then punted … China, by contrast, entered the crisis with a poor infrastructure, little in terms of environmental regulations, and with a natural environment in far worse shape than that of any Western nation … And yet, the speed of its transition to sustainability outpaces what the West has to show for itself. (2019: 9; Wang et al., 2019)

Thus, an appraisal of the political and economic structures, and attendant cultural systems, informing social, and ecological, justice projects in China is key to ensuring meaningful engagement with China's evolving context vis-à-vis 'green BRI.'

A key indicator of the prospective direction taken by 'green BRI' investments may be glimpsed in Tsinghua University's study outlining how key partner states are "currently on track to generate emissions well above the 2-Degree Scenario levels" (Buckley, 2021: 30). The GEC has observed how China's 2060 carbon neutrality pledge "does not include emissions by Chinese actors overseas. Thus, greener investments supported by a greening of China's BRI agreements will be crucial to achieving the Paris Agreement." China's growing emphasis on dual green/technological investment, outlined as a key focus area for the BRIGC, highlights an understanding of the growing need for an 'innovation driven development strategy' in line with the needs of partner states. By contextualizing livelihood security, social governance, and ecological protection under the ambit of 'ecological civilization,' China is currently engaged in adapting contextual realities to focus equally on rural and urban areas in terms of income distribution and development. However, given China's approach to international engagement and cooperation, any progress on expanding 'eco-civilization' as a global framework for social and ecological justice must incorporate effective action by partner states. While China's approach to the problem of the climate crisis indicates a realization of the need for integrated restructuring premised on key cultural precepts, there is little, if any, alignment currently evidenced in a majority of partner BRI states. A comparative assessment of the Pakistani context indicates a need to focus on a comprehensive, systematic approach to environment/climate governance informed by key academic and industrial inputs. Thus, the assessment of any duality in Chinese praxis vis-à-vis shengtai wenming must address the impact of China's policy of non-interference in combination with the disparate levels of legislative and regulatory efficacy in the existing environment/climate governance models of partner states. Nevertheless, China exhibits a growing tendency towards self-assertion in global environmental governance, framing its eco-civilization vision around the need, as highlighted by Xi Jinping, "to play our part in ensuring

global ecological security" (Buckley, 2021: 29). Given how the nascent 'Green BRI' framework is evolving in the context of severe climate events around the world, and the emerging realization of the need to adapt future infrastructure investment in line with the same, a governance-based framework on ecological justice must be prioritized by states such as Pakistan.

4.4. Implications for Sino-US Climate Cooperation

Buckley outlines the sheer impossibility of envisaging a future for global ecological justice that does not cast China in a key role, whatever the nature of that role (good/bad) may turn out to be (2021). However, China, as assessed by key commentators such as Jacques (2009), Ge Zhaoguang (2018), and Zhang Weiwei (2012) posits a different, non-Western, understanding of international engagement, framed using cultural and structural systems evolved over the course of a 'civilizational past.' Even as China emerges as a global power, there remain significant gaps in Western understanding of the ethos and historical experience driving the country forward, particularly given the uniqueness of its transition from an 'empire' to a 'nation-state' (Wang Hui, 2014). Thus, Chinese state structures, which have undergone 'modernization' but not 'westernization', are variously labeled as 'authoritarian' and 'autocratic,' with neoliberal discourses on human rights weaponized against China through a mass media effort across both print and digital outlets. A South China Morning Post (SCMP) report on Tianjin-based talks between US climate envoy, John Kerry, and Chinese officials on the subject of Sino-US cooperation over climate change is reflective of this. Occurring in September 2021, the meeting saw the US propose that China place a moratorium on financing overseas coal-fired projects; set a definite timeline for peak emissions before the 2030 deadline which China has already outlined; and publicly commit to a 1.5-degree Celsius limit of global warming. Wong's report on the event (SCMP, September 3, 2021) highlights how lead Chinese officials i.e., Xie Zhenhua, China's chief climate affairs negotiator, and Yang Jiechi, a top diplomat, referred to the Biden administration's targeting of China's solar power industry under allegations of 'forced labor' in Xinjiang. It was felt by China's Foreign Minister, Wang Yi, that the American attempt to decouple diplomatic exchanges over climate from the broader issues sabotaging Sino-American engagement would not be sustainable, with the primary obstacle to cooperation being an American determination to treat China as an opponent. Lu Xiang, a US affairs expert at the Chinese Academy of Social Sciences quoted by the SCMP, commented on China having issued a

clear time-table on climate change, according to which peak emissions by 2030 are to be followed by carbon neutrality by 2060. Any additional US demands, Lu was quoted as saying, would be difficult to incorporate, though there remained room for discussion on climate cooperation in select 'technical' sectors i.e., green innovation.

Scope for cooperation in technological innovation was also identified by Echo Xie, writing for the SCMP in September 2021. According to Xie, while China bringing forward its carbon neutrality goal in line with US demands was unlikely, an end to Chinese support for foreign coal power could act as an alternative area of action. However, as highlighted during the course of this study, the Chinese mode of development engagement accords due agency to partner states, factoring in the demands of local political elites. Consequently, any action on 'greening' the BRI must involve the willingness, and reciprocation, of these partner states. As the 2021 UN Climate Change Conference draws closer, media outlets such as Al Jazeera are reporting on the US-China climate deal as having 'failed' before the summit. This has been coupled with a value-centric comparative assessment of the BRI, versus B3W (Build Back Better World) projects; with the latter said to present the US with an opportunity to assert 'moral authority' over China for ensuring 'green development' even as it provides a 'democratic' alternative route to the same. The subsequent 'othering' of China fails to take into account such facts as that "four American banks—JPMorgan Chase, Wells Fargo, Citi, and Bank of America—remain the largest financiers of fossil fuels projects overall, having collectively financed more than $800 billion in such projects worldwide since 2016" (Hillman & Tippett, March 2021, Council on Foreign Relations). The ensuing vitriol in mainstream media and academic circles, on both sides, has served to add to the lack of understanding surrounding China, particularly in BRI states such as Pakistan which still face a dearth of academic and research institutions actively engaging with the Chinese context.

J. A. Hobson, in a seminal treatise titled 'Imperialism' (1902) explored the potential consequences of the imperialistic exploitation of China's resources, and labor market, by Britain and other European empires as follows:

> It is at least conceivable that China might so turn the tables upon the Western industrial nations, and, either by adopting their capital and organizers or, as is more probable, by substituting her

> own, might flood their markets with her cheaper manufactures, and refusing their imports in exchange might take her payment in liens upon their capital, reversing the earlier process of investment until she gradually obtained financial control over her quondam patrons and civilizers. This is no idle speculation. If China in very truth possesses those industrial and business capacities with which she is commonly accredited, and the Western Powers are able to have their will in developing her upon Western lines, it seems extremely likely that this reaction will result. (ch. IV)

Writing in 1902, Hobson goes on to explore the vast historical experience of the 'ancient civilizations' of Asia to the nascent European geopolitical experiment, commenting on the period of imperialism as but a moment in the history of empires best calculated over millennia. A similar ethos powers the discourse of China's rejuvenation which, as argued by Xi Jinping, is not a 'rise' but rather a 'restoration' to its natural place in the world. Martin Jacques traces China's current 'revival' under the CCP as the latest in a series going back over a history of at least 2,500 years. Pakistan, given its geopolitical situation, can only fully capitalize on this rise if it actively engages with the structural and cultural resources powering it. This necessitates adapting our structures to be able to 'know' our regional context through on-ground correspondence with the same, instead of attempting to project Western modes of 'knowability' premised on neoliberal archetypes.

5. CONCLUSION

This study problematized climate and environment as intransitive phenomena made ‘knowable’, and thus ‘actionable’ through transitive cultural, and structural, systems. Given the vulnerability of states such as Pakistan to climate change, there is a need to revisit how such systems have hitherto operated to inform state action on the issue, alongside such attendant concerns as economic growth and poverty alleviation. CPEC, an initiative projected to boost development through investment in infrastructure and energy, presents a key area of inquiry in this context, given global concerns surrounding the climate impacts of BRI projects. By highlighting China’s emergent role as a lead innovator in green technology, as well as its comprehensive program for domestic, governance-centric, ecological, and social justice, states such as Pakistan are presented with an opportunity to turn the climate crisis into an opportunity. ‘Green China Inc.’ carries the potential to boost productivity through systematically redesigning macroeconomic sectors in line with ‘green’ finance schemes. Pakistan’s human resource is a significant asset in this context, given the long-term benefits of ‘skills transfer’ versus ‘technology transfer’ programs in cultivating adaptation capacities to manage the effects of climate on existing infrastructure. Further, training human resource to address the dynamic nature of the climate crisis may allow for more critical risk assessment, particularly as the threat of ‘stranded assets’ increases with building international pressure against fossil fuel industries.

China’s nascent mechanisms for multistakeholder participation geared toward ‘greening’ the BRI present an underutilized opportunity for Pakistan to design a long-term plan for climate adaptation premised on domestic governance reform. Lack of engagement with China’s evolving structural systems, and their underlying cultural bases, is a major obstacle in understanding the processes and mechanisms at the core of ‘shengtai wenming,’ as well as their implications for a ‘green BRI.’ To this end, low indigenous academic expertise on China, scarce funds directed towards R&D in interdisciplinary fields, and lack of hybrid research initiatives at higher education institutions across the country, impede the formation of research-policy interfaces premised on local contexts. Dependence on private, often foreign-based, consultation firms, as well as on non-indigenous scholarship for ‘knowing’ local contexts, is unsustainable in the long-

term, even as it inhibits the cultivation of local expertise for more proactive, context-compatible state action.

Similarly, the failure of groundbreaking judicial precedents on climate/environment to translate into policy action; the nonexistence of institutionalized law reform mechanisms for revising colonial era instruments; and a dearth of effective regulatory and enforcement mechanisms on climate/environment governance compound the state's mounting vulnerability to extreme climate events. To this may be added the deleterious impacts of prevalent 'cultural' systems, whereby cooperative federalism and institutional governance are subject to partisan influence and parochial politicization. 'Working' and 'political' cultures lacking engagement with human-nature interrelations, as well as such concepts as co-management of resources through effective state-citizen interaction, impede the operationalization of existing structural systems, while obstructing any attempts at reforming the same. This can only serve to impede the potential of projects such as CPEC, with climate change serving to multiply the impacts of the prevalent crisis of governance. A key point of intervention in identifying, and implementing, necessary interventions are the legislative and academic systems in place in the Pakistani state, which, as identified by commentators during the course of his study, possess the necessary structural capacity to enact needed action. What is lacking is a parallel 'cultural' scheme that operationalizes ways of 'knowing' climate/society/governance in a manner compatible with the needs of the local context. Given Pakistan's vulnerability to climate change, and the massive investment being channeled into CPEC as a key infrastructure project, the present moment may be taken as indicative of the 'stress' or 'flux' needed to prompt remedial action. The multisectoral nature of the crisis necessitates moving beyond a project-centric approach toward a comprehensive reassessment of how governance reform may enable the institutionalization of policy frameworks geared towards ecological and social justice. Added to this is the impact of a narrowing window of opportunity for transformative action: latest estimates suggest that the coming decade (2021-2030) will be instrumental in determining the long-term survivability of states such as Pakistan in the face of mounting climate crises.

In problematizing social and ecological justice using contextual structural/cultural interplays, this study examined the potentiality of Sino-Pak engagement for enabling transformative action in the Pakistani context. Sino-Pak interaction presents a mode of South-South engagement which

can, and should, be the subject of indigenous academic inquiry; in order to assess its nature and scope in comparison with existing models of North-South developmental models. To this may be added the need to cultivate local research expertise on Asia within Pakistan, with a focus on learning from best practices in order to benefit domestic systems. This research highlighted, but did not further explore, the dynamism of South -South engagement, particularly when it comes to China's evolving model of collaboration through trade via the development of critical infrastructure. The parallels between China's domestic reforms and its international engagements, pinpointed in Chapter 4, indicate the need for BRI partners to better understand the structural/cultural inputs informing these processes of reform. Such an understanding stands to enable a more informed negotiation and exchange for BRI investments, under the umbrella of 'win-win collaboration.' A key limitation in the current study was an inability to engage with Chinese 'elite respondents' alongside their Pakistani counterparts, prompting a reliance on Chinese scholarship and verified media outlets. It is argued that Sino-Pak research collaboration in 'hybrid' social science fields is essential to the themes of information exchange, communication, and innovation vis-à-vis the 'Green BRI' concept. The sociological inputs informing technological innovation are premised on an active understanding of such structural/cultural influences as outlined through the course of this study. Further, Pakistan, as a key partner BRI state, stands to indirectly learn from the structural reforms enhancing China's institutional capacity, while directly benefiting from this capacity through BRI project initiatives.

An additional element identified in Chapter 4 concerns the utility of cultural concepts informing Chinese domestic reform for the theorization of 'peace' and 'conflict' in the age of climate change. Interdisciplinary fields, such as Peace and Conflict Studies, present an important vantage point from which to engage with the cultural philosophies and traditions reflected in China's structural reforms, particularly as these pertain to the global SDGs. The interrelationality at the heart of Confucian precepts may act as a lens for problematizing human-human relations, comprising an assessment of human behavior and individual-collective ties, within the broader ambit of human-nature 'harmony.' It has been highlighted how cultural systems inform the conceptualization that gives rise to structural setups and transformative action processes. As the global geopolitical landscape gravitates towards multipolarity, 'peripheral' knowledges have increasing room to inform alternatives to mainstream discourse. Such knowledges, drawn from cultural systems hitherto sidelined by neoliberal understandings established in the 20th century

world order, are reflected in the push to recognize ‘ecocide’ as a punishable offence by the ICC, as well as in global civic movements arguing for a reexamination of concepts such as ‘value’ and ‘development.’ Thus, this study attempted to integrate this assessment into an exploration of ‘shengtai wenming’ as a culturally informed, governance-centric blueprint for socio-ecological justice, and its implications for Sino-Pak engagement under CPEC.

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APPENDIX

Conceptual Framework:

- Biophysical Phenomena (e.g., precipitation, temperature)
- Structure: Economic, Social, Political Institutions/Mechanisms/Processes/Events - External Orientation (E)
- Culture: Affect/Behavior/Attitude/Ideas/Beliefs – Internal Orientation (I)
- Orientation (E+I) = Agent Framing of Context

1. Biophysical Phenomena (Structure + Culture) = Context
2. Orientation = Action = Context Transformation/Reproduction

Key:

- (within brackets): interviewer comments/analysis/observation added
- 'single quotation marks': emphasis
- **bold:** GHG and 'climate accusation' frame
  (note: a majority of respondents mentioned Pakistan's low GHG emissions as an indicator of its weak structural base in the manufacturing industry. In light of this, it was frequently interpreted as a factor that gave the state some elbow room in designing poverty alleviation schemes around Special Economic Zones. This study analyses the attendant 'cultural' impacts of low GHG emissions in light of 'climate accusation' framing, where an 'us versus them' dynamic operates around the 'industrialized' West and the underdeveloped South. The West's higher culpability vis-à-vis climate change is taken as allowing the South the 'right' to secure its own economic growth in turn, using the same models utilized to this effect by the West.)

I. Dr. Saba Pirzadeh, 05/26/21, (Assistant Professor: English and Environmental Humanities, LUMS)

	Structure	Culture
1.	neoliberalism (business, commerce – laws, reward systems incentivizing corporate excess; peripheral voices sidelined); politics of the Global North and Global South	cognitive dissonance (man-nature relationship, societies within ecosystems, inability to process climate crisis) presence of data/science not so much the issue as the ability to engage with it (affective engagement of publics needed to pressure policy)
2.	anglophonic debates (language of discourse inaccessible to key	affect: empathy and sympathy (link to understanding of climate and environment as 'shared,' lived experiences of

	stakeholders i.e., those who work the land; curricula on relevant subjects failing to engage local discourse, cultural concepts, folklore etc.)	climate crisis in different social worlds) interconnectivity of crisis tangential, 'climate refugees' securitized, 'global commons' problem
3.	job mobility (for indigenous peoples, selling nature/ancestral holdings to get by)	normative worldviews (engendered by contemporary politics) and suspending the same through literature, anthropocentric worldviews hard to shift
4.	local publication industry (unsupportive of incorporating local voices to incorporate into curricula, lack of finances and resources for publishing houses – comparison with India – any publication would not be economical enough to allow for broader circulation)	agency (of a few actors i.e., local journalists e.g., DAWN showcases potential of existing institutions, particularly civic bodies) 'one man army' (underutilized potential, inability to mobilize/engage)
5.	institutional support (by governments, private bodies) against overreach by (capitalistic) actors	consciousness: newspapers, media – alternative platforms e.g., for awareness campaigns (need to shift mindsets)
6.	land laws: need for reform of old British laws, implementation, and enforcement (role of the judiciary, guardians of human rights)	younger generation: sense of community
7.	curricula: structure and content, and whether it can be said to reflect local lived realities (nature and scope of assessment – what are we teaching, how, and why)	academicians and civic resistance: Ravi Urban Development Project
8.		immersion into non-mainstream worldviews, need to immerse oneself in the given context, 'understand where they (those affected by climate crisis/environmental degradation) are coming from,' basis for negotiation between various stakeholders (instead of top-down imposition of laws)
9.		ecocritical philosophies, 'shared responsibility' (both the Global North and the Global South), reach across the divide for shared solutions
10.		compartmentalization: technology and nature (smart technologies will save nature, priority still economic growth) and its impacts on the movements (underestimate extent of the damage caused)
11.		(sense of) urgency (dampened by political wrangling, lack of understanding of the extent of the issue, sidelining of relevant voices)

II. Dr. Sanval Nasim, 06/01/21, (Assistant Professor: Economics, LUMS)

	Structure	Culture
1.	the science (of climate/environment) is clear, but is it being communicated as such by the schooling system: public – private divide (Environmental Science as a concept taught in basic education, particularly in the broad-based public sector, does not enable students to conceptually engage with the ramifications of the climate crisis, or devise critical solutions) – comparison, local versus international students (the possibility of a Pakistani Greta Thunberg)	ignoring adaptation for mitigation, particularly in rural areas, palliative disaster management frameworks (ad hocism, reactive approaches)
2.	conceptual redundancy: design of entry level courses for subjects such as Economics does not reflect theoretical (interdisciplinary) advances in the field, which are incorporated at higher levels. Students limited to entry level courses are unable to engage with the same (with implications for general awareness surrounding themes such as how economics envisages growth and the environment, and the potential for misconception and mislabeling of the problem)	state role and investment: (not just) leaving it to the polluters (private sector industry H&R initiatives, state's role in the same, lack of initiative, comparative assessment of private versus public sector allocation to research and development)
3.	market failures and market-based solutions (environment as a 'public good,' lacuna in the system)	(lack of) spirit of public intervention
4.	structural problems: pricing (need for stricter standards which are enforced – pollution in supply chains), addressing negative externalities	environmental justice: uneven impact of climate change/pollution (how is this perceived by state legislators? How does the ensuing perception shape initiatives undertaken/approved by these same actors?)
5.	lack of property rights (hurdles in enforcing stricter standards of environmental protection, vacuum exploited by key actors)	CPEC: short-term gains, climate change not the focus (low hanging fruit)
6.	lack of legal safeguards: logging (focus should be equally centered on preventing deforestation in addition to ensuring forestation under the Ten Billion Tree Tsunami)	petitioning the state (problem of initiative), propensity for quick, cheap solutions (write off the issue, particularly for electioneering purposes)

7.	**GHG emissions: measly player (energy and development needs, population centric analysis, low industrial base), disjuncture between climate and GDP per capita: need to ensure living standards for the poor (and those living below the poverty line)**	confrontational relationship: states vs. cultures of change, historical practice (friction between status quo and critical forces frequently observed, sometimes subject to securitization)
	agriculture sector: water intensive 'cash' crops (state role in encouraging practice that ultimately impedes environmental protection goals set by the state itself)	**GHG emissions, measly player (right to develop, right to utilize home resources for such purposes as energy security etc.)**
8.	standardization and pricing: reducing emissions, debt for nature swaps, poor monitoring and regulatory capability impede effective operationalization of model (how can states writing off debt be certain that guarantees made concerning environmental protection will be delivered on) 'benefits realized should match what's been forgiven' – no way of ensuring the same (without strong regulatory mechanism and meaningful enforcement)	
9.	political economy problem: need to test out solutions under developmental economics and attendant models by utilizing academia – social and economic constraints faced by the sector a key obstacle	
10.	Chinese developmental model prompting policy interventions (sans effective, holistic comparative assessment of compatibility in local context, impact of model on PRC proper in the long run) with a weak legislative base	
11.	research: data and red-tapism: microlevel engagement with on-ground context: barriers to entry for academicians (data securitization, lack of substantial state support)	

III. Dr. Hasan H. Karrar, 06/07/21, (Associate Professor Specializing in modern Chinese and Central Asian history and political economy, LUMS)

	Structure	Culture
1.	CPEC: coherency of vision, a work in progress (evolving in the context of geopolitics, conditions on ground informing approach to development projects)	iconography of the Silk Road: political aspect of the aesthetics behind the program (China's civilizational role before Europe was ascendant in Asia)
2.	new financialization: building inroads, particularly in sectors such as technological innovation	development and 'westernization' (for China, modernization does not imply westernization, neither does it intend to export its own model in a manner reflective of neoliberalism)
3.	bilateralism and mega-development (model contrasted against the multilateral approach of the West)	markets and moral high ground: money to be made, China cast in a leadership role (attitude defined by pragmatism) contrast – impact of environmental degradation on displacement (identities linked to place – impact of mega projects on local places/spaces a universal story, as seen through the lens of Westernization)
4.	Chinese model of development: environmental costs overlooked development from the ground up in Japan, South Korea: role of heavy manufacturing, high tech sector (see East Asian region in general), role of infrastructure as a basis for development in BRI (needs of the developing world, basic roads, and railways, bring states into the 21st century)	civilizational discourse and 'branding': China moving with global trends (vis-à-vis environmentalism and climate conscious state action)
5.	South Asia presents a large market: potential for commercialization and scaling up (e.g., sectors such as solar power industry, generation centers)	Pakistani students in China: soft power dynamic (a potential resource for further collaboration, people-to-people interaction, may help address concerns surrounding CPEC, enable better cultural engagement)
6.	hardware and manufacturing for non-defense sector through the BRI framework: longer term, 'bit of a ways away'	political will of Pakistani government (when contrasted against that of the Chinese Communist Party)
7.	Pakistani students in China: numbers increasing post 2016, up to 20,000: training potential, polished human resource (contrast nature of Chinese presence in Pakistan, potential for generating local employment)	
8.	field stations: training in technical expertise, on-ground environmental assessment and monitoring resources. KKH a key case.	

IV. Dr. Rashid Aftab, 06/08/21, (Director: Riphah Institute of Public Policy, Riphah International University)

	Structure	Culture
1.	Chinese model of development dominated by economic, not military, engagement; comparison with the role of the US in Afghanistan (reflected in nature and scope of projects and in the process of financialization i.e., extension of soft loans)	concrete, defined, time-bound, and specific initiatives for CPEC (showcases focused, disciplined action and long-term, as opposed to ad hoc, planning by the Chinese state)
2.	impact of development on socioeconomic variables within society: compatibility (projects must address local needs)	approach to development: inclusive versus segmented (projects must address local mindsets i.e., local concerns, given fractious history of federalism; inclusivity will create trust)
3.	CPEC Phase-II: SEZs and agriculture, preceded by energy and infrastructure projects in Phase-I (implementation versus planning, coordination on initiatives, preparedness for effective action)	trust deficit between industry-state (when it comes to innovation in development and investment in local initiatives – security concerns, plus concerns surrounding availability of input resources, state support)
4.	changing precipitation patterns: 40-day shift, frequency, and intensity and redefinition of agroclimatic zones: climate change impacts already observable (threatening food security; safety of settlements in plains at risk of flooding as well as urban areas lacking planned waste disposal systems; productivity overall)	urgent need to revisit policy dimensions, government's (in)ability to provide a conducive environment (for industry, academia) (nature of how policy is made – spirit prevailing in National Parliament)
5.	**China leading polluter: GHG emissions (helped lift country from poverty)**	policy 'disconnect' (impact of planning phase, lack of effective communication mechanisms between provinces post 18th amendment)
6.	value-addition to export-oriented industries, (operation of industry in) indigenous zones, and Environmental Impact Assessments: competitiveness (of products) (rigorousness of EIAs)	public sector development programs: developed in isolation (no correspondence with lived realities on ground)
7.	role of government in providing vocational and technical education for absorbing human capital (continuity of initiatives across administrations)	politicization of water (scarcity) issue, technical nature of subject mixed with politics (Indus River System Authority (IRSA) hogtied)
8.	redesigning curriculum around hybrid research (lack of effective action coordinated across all federating units)	provincial coordination and collaboration – party politics in provinces an 'issue'
9.	Triple Helix Model: close linkages between academia – state – industry: role of each (ensured through proper legislative frameworks, effective	'democratic nature' of states and (ability to tackle) climate change (climate change as a governance issue premised on a certain

	policy planning, communication channels supply/demand side)	worldview informing action)
10.	predominance of supply and not demand driven model in Pakistan	gap: working out the level of modalities via Parliamentary Forums, effective coordination between standing committees, role of Leader of the Opposition (distrust, politicization)
11.	business policies: tax and non-tax barriers (incentives aiding certain types of industry, innovation): system malfunction (unable to correctly identify, structure, deploy needed action)	consultative and interactive (engagement) with representation of all political parties: vocal and vibrant (discussion) for tabling of bills
12.	use of Indexes (Worldwide Governance Indicators; Human Development Index etc., to assess systems, bottom-up approach (objective, quantifiable criteria used to frame policy action, monitor performance and systemic efficiency)	several real stakeholders (disconnected, not consulted; lack of outreach, discontinuity between regimes, successive governments failing to engage stakeholders identified by previous administrations)
13.	impact of planning phase: budgetary allocation and role of planning on legislation (environment, climate underserved)	effectiveness (of policy) compromised due to lack of ownership
14.	public-sector development programs: i) policy (design): holistic, multisectoral ii) operationalization: need to map existing gaps to ensure sustainability	(enforcement, regulatory) mechanisms need more 'teeth' while minimizing political alienation
15.	evidence-based policy design: availability, credibility/integrity, comparability of data: i) methods, ii) tools, iii) transmission (mechanism)	holistic, systems-based thinking lacking in analysis of data: 'nexus' e.g., water: energy security + food security; segmented analysis (failing to take into account the bigger picture)
16.	lack of National Data Warehouse: challenges faced by Pakistan Bureau of Statistics (PBS): processual and knowledge area based (data flow through departments impeded by lack of interoperability of departmental data banks, disparate rates of digitization and digital penetration)	
17.	transboundary and interprovincial resources i.e., water: (distribution) modalities, dispute resolution and regulation must be operationalized, need for neutral, trained experts (well-versed in law, as well as ground realities)	
18.	existing constitutional framework sufficient: bodies like the Interprovincial Coordination Committee and Council of Common Interest (adequate instruments) must be used effectively	

V. Dr. Muhammad Irfan Khan, 06/08/21, (Professor/Dean: Environmental Science, IIUI)

	Structure	Culture
1.	indexes to gauge economic feasibility/viability and social acceptability (of Sustainable Development programs) a key tool (for gauging progress of state action on climate/environment)	public consciousness and perception of climate change: 'not our issue.' Seen as a conspiracy theory (by the wider masses, in conflation with attempts to obstruct Pakistan's development, impede state action)
2.	supply driven finance models and PC-1: no scrutiny of environmental and social impacts of programs at local level	impact of khatib and ulema in value-systems: Hadith Jibrael and the concept of 'emaan' versus 'ehsaan.' role of 'good conduct' (in shaping public perception of necessary action on climate/environment)
3.	poverty (an overriding concern, opportunity costs of environmental conservation)	objectives of shariah agreed by all sects: among these, protection of i) faith, ii) life, iii) resources – life support systems as baseline for other resources
4.	role of NGOs in producing discourse on environment and climate – declining post 2016. LEAD and SDPI. role of the Mosque as an institution in producing/disseminating discourse, structuring behavioral change.	'hassanah' and behavioral change: field experiment in Quetta (2005) by IIUI, later replicated in Swat (2006) – positive public response, engagement with locals (on the subject of good works and environmental protection) Friday Sermon as an essential point of contact (trust in religious authorities, concern for the hereafter)
5.	research-policy gap: unavailability of examiners for Masters' projects (in hybrid disciplines) e.g., environmental diplomacy and governance (academia lacks engagement with the multidimensional i.e., interdisciplinary nature of the problem, evidenced by the dearth of focused research initiatives needed to train the generations that will be tasked with living with/adapting to increasingly problematic conditions)	personal interests of senior bureaucrats – 2016 IPCC project (attempt to design a tiered forum operating at the national level along the lines of the IPCC framework, bringing together experts from all across Pakistan to present a consolidated center of expertise/research to inform policy; project shot down owing to an appointment issue; meritocratic practice impeded by nepotism/'contacts'-based hiring)
6.	data accessibility (securitization of data, state bodies more interested in data sourcing than the implications of data analysis)	communication gap between bureaucrats and scientists: language barrier (unwillingness to learn the other side's point of view)

7.	bureaucracy lacking capacity to grasp the technicalities (underlying proposed initiatives/critiques): 'right person for the right job' problem (need to revise recruitment/hiring, training practices)	good proposals 'shot down': 2013 NIMS (National Information Management System, fell prey to miscommunication between COMSATS and Ministry of Environment, resources stranded, left dumped in storage rooms, outdated and redundant)
8.	impact of bureaucratic red-tapism on academia (obstruction of attempts to create/operationalize local expert groups, transdisciplinary epistemic networks for informed policy research at national level)	change in perception (induced by exposure to rigorous academic training – respondent's own Oxford experience: background training as a 'hard science' scientist, first-time exposure to interdisciplinary conceptualization, perception changed by 360 degrees) Universities view Environmental Science as having more to do with biology than social and economic themes, hiring practices at IIUI changed to reflect shifting dynamics of 'hybrid' research areas
9.	Cost analysis of proposed policies prior to implementation (key area of focus)	impact of new knowledge and new ideas (on capacity building)
10.	post-18th amendment impact of devolution of ministries (pace of the process, question of capacity and will) human, technical, technological, and financial capacities (of units – different levels) and nature of governance	global standards i.e., World Bank (set the tone for changing trends in research) no compromise on environment (perception of these standards, impact on local ways of thinking/doing)
11.	accountability of Federal Government (in translating multilateral framework agreements to the local level)	
12.	HEC and interdisciplinary research (funding/initiatives)	
13.	departmental organization of environmental science themed subjects in Universities (availability of faculty to execute and operationalize the same)	
14.	vacuum of expertise (and reliance on foreign consultants) in local environmental assessment. Inclusion of environment/climate related disciplines as a 'strategic core course' (may help generate homegrown expertise)	
15.	curricula delivery versus design – capacity (training) of local teachers and design of subjects (to incorporate local values)	
16.	need for teacher 'refresher courses' (keep abreast	

	of latest developments, particularly for an issue area as dynamic as the climate crisis)	
17.	industrial symbiosis – clean development models as seen in China, Japan, and the rest of the world. Evaluation mechanisms installed at state, federal levels (coordination between the same, data banks for information storage and exchange)	

VI. Mr. Ameer Abdullah, 06/22/21, (Lecturer specializing in politics of environment and climate change/SA politics/traditional and non-traditional security dynamics, NDU)

	Structure	Culture
1.	post-2017 energy and development crisis (poverty, weak industrial base, low GDP key areas of state action)	concept of government (its role), impact of political agendas/politicization (set in accordance with this perceived role, informed in part by historical processes of the evolution of the state)
2.	**GHG emissions insignificant, environmental problem a transboundary issue**	imposition of particular concepts e.g., Chinese cultural models, risk of conflict: pushing forward one culture will not help (shengtai wenming as a sample of Chinese cultural philosophy)
3.	modern urban design (and its focus on environment/climate, as seen in the developing world. Cities not built as part of the surrounding ecosystem, do not sustain/support the same)	mindset of decision-making elite, clarity of purpose plus capacity
4.	impact of afforestation strategies on water security, role in adaptation and mitigation (blueprint on climate action limited to fractured actions, lack of multisectoral policy design and institutionalization of initiatives through legislation)	Ministry of Climate Change and the banning of plastic – reflects lack of clarity (what is the purpose of MOCC post 18th amendment, how does it relate to the broader perception of governance in Pakistan)
5.	policy disconnect between global and domestic levels, implementation challenges	(purpose of) modern cities (reflected in design) (anthropocentrism, materialism, nature-as-commodity)
6.	(shoddy) enforcement mechanisms, poor capacity	'we are not responsible' (for climate change) focus shifted to disaster management and afforestation strategies (climate accusation and GHG, lack of problematization of current and future contribution to climate change, impact of climate change on current investment)

7.	wasted capacity: hurdles to effective utilization of available resources, material aspects of policy implementation across the provinces (disparate capacities)	Billion Tree Tsunami and (political) gimmicking and mismanagement (personality focused programs tend to be short-lived, impact of partisan branding)
8.	specialization in academia, transdisciplinary engagement, and sensitization about (multisectoral) initiatives	**GHG emissions insignificant** (mentioned in relation to pursuit of development alongside 'nature based' solutions, 'guilt free' model)
9.	nature of education systems: domestic versus 'Western' (primary emphasis on environment, climate; clarity of concepts, understanding of implications of climate crisis, engagement of students with broader community as facilitated by the school system)	participation in global environmental frameworks: lack of public engagement
10.	BRI and India (regional situation in South Asia) SAARC role (not a 'regional' body, as South Asia has not yet managed to act in concert as a region), ECO and ASEAN: environmental and economic (engagement) in KK + Himalayas + HK	political culture premised on 'banning' – legal violation a norm in 'working culture', not thought of as 'a crime'
11.	civil society as a potent actor, lacks capacity, can bridge government-policy- people gap	cultural barriers (to citizen action) (lack of trust, state-citizen interaction in public sphere initiatives)
12.	popular culture (information dissemination), use of channels during COVID19 awareness and mobilization campaigns – platform defined, exists, particularly over social media (data-sharing and fact-checking practices defined, need to be made mainstream)	issues (solid waste management): discourse versus action (plenty of one, less of the other; discussion sole focus of most political actors, lack knowledge and expertise, as well as spirit of interparty coordination)
13.		enforcement and lack of political will, backed by (dominant, popular) working culture, 'acceptance' (of environmental losses)
14.		social aspects to wasted capacity: public attitudes (dismissive, apathetic)
15.		'problem-solving' attitude of academia and sensitization about environment as a collective social responsibility (needs to be nurtured, is fading)
16.		community level projects oriented around 'cultural' values
17.		behavioral aspects of teacher training (teachers as members of the community, practice what they preach)
18.		pessimism: current (level of) understanding (among key stakeholders)
19.		SAARC 'not a region' – states connected with India, not with each other (territorial and political sense)

20.		Sino-Indian incompatibility (ambitions), ultra-right government in India, climate and environment relegated to the backburner (perceived as less important, more pressing concerns)
21.		role of civil society in motivating and mobilizing (demotivation a key obstacle in those with awareness)
22.		cultural crisis (in civil society) – East/West Divide, intra-civil society disconnect a key challenge (distrust a factor, 'foreign-funding, question' some NGOs patronized by the state)
23.		popular culture (motivation and trust) social media platforms 'accepted' by publics, willingness to trust, has the capacity to make a big impact (in awareness messaging)

VII. Prof. Engineer Zamir Ahmed Awan, 05/27/21, (Sinologist (ex-Diplomat), Non-Resident Fellow of CCG (Center for China and Globalization, NUST))

	Structure	Culture
1.	impact of regional conflicts on environmental conservation (in terms of both material damage and sociopolitical focus) e.g., conflict in Afghanistan – landmines, damage to fertile topsoil, reduction in agricultural yield (transboundary effects)	political culture premised on quick, tangible results particularly closer to election cycle: prioritization of coal sector (cheap, quick results)
2.	energy crisis and political culture: thermal energy cheap and quick method (also generates immediate employment in extraction, transport, processing, whereas 'green' energy would require first training available human resource) 'affordability' of conservation and climate mitigation practice	Chinese attitude defined by pragmatism – coal pollutant but cheapest source, price can be controlled (through effective indigenous mining operations in locations such as Thar) compromise with the environment
3.	thermal: coal prioritized on account of energy security, imports of diesel oil cultivate dependence and accrue inhibitive costs – assessment conducted by the Chinese side	popularization of 'green investment' through discourse generation (impact of barriers to circulation e.g., language, censorship, publication culture)
4.	adjust energy mix in the long-term, different priorities in the medium to short-term (low GDP, poverty, consider impact of COVID19, fall of income through tourist and other related sectors)	'human nature' to seek short-cuts, violate law, must be checked through effective safeguards for ensuring compliance ('spirit' of rule of law)

		education and discourse may supplement these penal measures, but cannot replace them entirely – 'one-sided' approaches will yield poor results carrot and stick method: soft values as seen in Confucianism, harsh punishments for breach of obligation, rigidly enforced for all – Chinese model
5.	environment and climate friendly technologies proposed as solution will take time and feature in a long-term scenario, need to prioritize economy in the present	Confucianism reduced to rhetoric impractical (that is all it is frequently reduced to), same with Islamic eco-theory
6.	weak legislation for pushing polluters, need for practical measures like income-based fines (example of Middle Eastern countries and traffic law violations, personal experience of senior running a red light) forceful implementation lacking for rule of law to have 'clout' through courts and judicial bodies	sincerity of a state a reflection of popular attitudes (citizens and academicians prioritize certain areas in mainstream)
7.	institutionalization through legislation needed to ensure lasting impact – individual movements not sustainable in long term	'continuity' in traditional value-systems, study of history, Chinese language allows access to millennia's worth of cultural reform and evolution, no comparative record exists in other civilizations or nation-states i.e., India. Resulting disconnect has impact (on perception of cultural projects pitched by states, their reception by local and international audiences etc.)

VIII. Ambassador (Retired) Syed Hasan Javed, 05/27/21, (Director: CGS, NUST, 37-year diplomatic career including two diplomatic assignments spanning over nearly ten years in the People's Republic of China)

	Structure	Culture
1.		China's civilizational discourse and a focus on 'revival' as opposed to 'rise'
2.		impact of value-systems on societal transformation: example of Arab tribes and the rise of Islamic civilization from a region lacking military power projection capacity

3.		role of 'connectivity', soft power (values) precedes hard power 'intellectual force' is an agent of change example Deng Xiaoping's focus on transforming mindsets as part of reforming preexisting structures
4.		capitalist paradigm associated with greed, exploitation, insensitivity to humanity and to the laws of nature: 'utter disrespect' for the same
5.	state of technology: desertification detection, water salinity, soil aridity, and agriculture; technology transfers i.e., US-Israel (exists, but has not been deployed to address the problem – why?)	mindset: What made Deng Xiaoping: 1978 incident, farmers against the commune system, 'blood signatures', opted for agricultural reforms sideling self-interestedness – ability to think differently
6.	'green development' programs initiated by China i.e., great 'green walls', solar power generation, GEP (Gross Ecological Product) Yunnan Province Shengtai Wenming formalized and institutionalized in both party and state constitution – a constitutional principle	Chinese system: i) processual/evolving ii) culturally grounded (in values) i.e., 'ecological civilization' understanding of 'prosperity' long-term: millennia, not decades emphasis on 'guanxi' i.e., relationships
7.	organization of local governance, engagement of public in state initiatives state's attitude towards 'bottom-up' initiatives i.e., the revival of Confucianism (premised on allowing local governments to take the initiative)	co-existence of Taoism/Buddhism/Confucianism: Confucianism concerned with literati/knowledge circles, central core of beliefs 'humane authority'
8.	historical basis for BRI: China's contact with the world, including Islamic Empires; collaboration and 'prosperity' (structure and design of institutes informed by historical experience) long-term planning	addition of value by investment in self, Chinese system premised on reform to inspire public trust in public policies – more so than in the USA credibility of governments at municipal or local level
9.	service delivery by Chinese state (comparison: USA and Pakistan) emphasis on reform, structured approach to development praxis	'reverse engineering' time-tested leadership strategies, 'structured effort' to instill innovation i.e., "innovation is our religion" – Xi Jinping
10.		'out of the box' solutions prevent stagnancy, 'third way' toward modernity, 'sovereignty' lies 'with heaven' – comparison: Iqbal, Eastern philosophies, post-2012 removal from

		main curricula in Pakistan
11.		'desperation' of the West (prompting vilification of China in bloc) – 'hang together or hung together'

IX. Dr. Mehmood Ul Hassan Khan, 06/03/21, (Member Board of Experts: Center for Global and Strategic Studies (CGSS), Islamabad)

	Structure	Culture
1.	nature of mechanisms in green investment doctrine – holistic versus 'ballistic', diversification of policies incorporating the private sector role of water resources in the industrialization drive, benchmark for future prosperity – diversified but integrated policy planning	'ecological civilization' combines spirit of protecting/preserving nature with diversified, integrated policy post-2007 on the Chinese mainland
2.	CPEC phases: I – energy focus through coal power generation, operationalization of power plants e.g., Sahiwal, carbon footprint minimized using innovative technology (solution lies in innovation to improve existing 'dirty' tech) utility of transfer of tech sparse in Phase-I (alternative/renewable i.e., solar) gradual move towards energy mix transformation	shared goal (of Pak-China) survival of (their respective) nations, well-being of future generation
3.	impact of legislation in protecting/replicating protection measures across the nation	basic essence of biodiversity conservation: green investment (innovation and diversification, conceptualizing the economic potential of the problem)
4.		'smart' living (technological as well as behavioral components)
5.	water and food security (demographic concern – increasing population, risk of seasonal crop destruction and yield reduction) Chinese farmers and innovative practice i.e., 'artificial raining' (plus the relation of 'green' revolution with economic progress) impact of legislation in protection of resources (like water)	'security' doctrine surrounding protection of scare resources, or issues politicized for political point-scoring

6.	IRSA and delayed inflows among federating units caused by climate change (is IRSA as a body equipped to handle the stresses imposed by changing melt/rainfall patterns in terms of organizational structure/dispute management and regulation mechanisms?) comparative assessment of IRSA with Indian counterpart: dams in both South Asian states of Pakistan and India (means and methods of approval, pace of construction)	(organizational attitudes: India and Pakistan, public reactions to, and support of, climate-oriented initiatives i.e., dams, coordination, and collaboration among federating units)
7.	education of 'receiving end' i.e., farmers along with introduction of insurance schemes by State Bank water preservation and the insurance of 'cash crops' in Pakistan through coverage of different farming costs i.e., machinery, (hybrid) seed varieties old and new farming methods and farmer training – incentivize through revenue generation	social awareness campaign on environment and climate not appreciative of religious value-system in Pakistan (climate as a 'social' issue impacting the betterment of mankind)
8.	role of religious sector (formal and informal) in promoting awareness and need for intervention practices, Friday sermon as a strategic asset for mobilizing behavioral change through holistic community engagement across all sectors	'true' efforts needed, 'seriousness' about 'living habits'
9.	education sector: curricula and environmental/climate awareness (not fully incorporated)	predominant attitude of majority governments defined by negligence: forests uprooted for appeasement of local power (business) elites (real-estate sector, cultivable land turned over for construction of housing colonies)
10.	tree plantation drives by the state supplemented by integrated efforts by policy-makers to cater to existing vacuums	'cosmetic' arrangements order of the day, Pakistan a 'graveyard of golden policy plans' (statement attributed to World Bank) mismanagement and 'untouchability' doctrine interconnected
11.	policy disconnect among efforts of succeeding governments	need to generate 'real ownership' of climate issue
12.	law and order situation and accountability: role of timber mafia (versus overt focus on afforestation drive), need for legislation on deforestation, enforcement of resultant policy	
13.	use of local government platform i.e., PTI and the 'green consular' mechanism, right to information	

	act – engage local population	
14.	Fund allocation sufficient, need to initiate proper operationalization via training of human capital	

X. Mr. Hasan Daud Butt, 06/07/21, (Former Project Director/Coordinator CPEC)

	Structure	Culture
1.	'development': job opportunities, economic solvency, attendant ecological concerns (primary focus of CPEC 'economic development')	cautious approaches to development (not an overexercise of caution, though)
2.	infrastructure and energy projects, approval process similar to public sector projects in context of EIA reports agroclimatic and different topographic zones of Pakistan: impact and scope of infrastructure/energy projects vary across the country and are interconnected. Northern Region dam construction (for flood prevention) may result in silting in the harbor. management of impacts differs as well – maritime environment of Karachi compared with that of Gwadar	primary impetus: 'we have to become rich', focus – food and jobs, GHG emissions on the margins: **regional comparison of Pakistan's carbon footprint: minimal**
3.	super critical coal technology may address emissions issue, particularly when compared with furnace oil led projects: need to utilize domestic energy resource reserves	'energy security' a key concern
4.	need for R&D investment	CPEC 'not here to clear dirty linen', 'we must learn from their (China's) experience and use our (Pakistan's) own characteristics' (to develop R&D and investment in new technologies)
5.	technical complications surrounding clean energy: continuous, strong supply not guaranteed through hybrid tech (transmission network compatibility, cost of infrastructure installation particularly during industrialization phase) shift to different energy mix part of transition from less to more developed status	need for 'balance' (growth-sustainability, but balance may take time to materialize)
6.	weak regulation, need for assertive implementation: Ministry of Science and	debate tends to revolve around people and personalities

	Technology, bring in tech for training along Triple Helix Model – potential, respondent's own experience in KPK Board of Investment, potential exists potential for replication across provincial units, Sind: industry-academia linkages	
7.	networking among academic institutions and think tanks for research collaboration e.g., Iqra University, SDPI.	universal tendency to 'blame the government', no one side holds all the blame – academicians unresponsive, respondent CPEC Project Director for 5 Years – failure to incite response in context of reports from any single institution laid-back way of living
8.		Deng Xiaoping quote: "It doesn't matter whether a cat is black or white, as long as it catches mice." (as long as the economy works, it is a good economy)

XI. Dr. Yousaf Zafar, 06/10/21, (Former Chairman PARC, International Cotton Advisory Committee (ICAC) Cotton Researcher of the Year 2012)

	Structure	Culture
1.	Pakistan's energy usage (and contribution to climate change) minimal, risk of floods and droughts disproportionately high CPEC Phase I: infrastructure and energy, Gwadar key focus post 2013, energy poverty in Pakistan. Lakhra Power Plant (only coal fired public sector plant using indigenous coal of Lakhra Coal Mines), HUBCO, Sahiwal – **insignificant carbon footprint**	CPEC Phase I: 'low hanging fruit' **GHG emission: insignificant**
2.	CPEC Phase II: 2018-30, focus on agriculture	Pakistan 'not very clear about what to get from them (the Chinese)', input mostly from the Chinese side. 'Our house is not in order.' (agriculture and climate adaptation appear as meaningless in this context)
3.	INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE (IFPRI)-Pakistan (CGIAR Research	Agriculture a complicated and complex area, Eisenhower, seems simple for 'pencil

	Institute) Study: GDP investment intensity in agriculture R&D (China, 2016: 16 percent share, growing fast from 0.2 percent in 1981) Neglect of R&D sector in Pakistan: PM 2018-19 Agriculture Emergency Programme negligible allocation to R&D while prioritizing machinery and subsidies. Prioritization of projects such as hybrid seed imports (from states such as China) trade deficit in agricultural products (for an agrarian economy) importing edible oil, soya bean, legumes etc. complexity of problem not understood, lacking holistic focus on issues such as reserves, shortages created by smuggling, impact of Afghan refugees and steady population increase agriculture a nexus of land, water, climate, and energy	pushers' (Farming looks mighty easy when your plow is a pencil and you're a thousand miles from the corn field) reflected in question of subsidy allocation
4.	population increasing, cultivable land and fresh water decreasing i.e., input resources decreasing + demand increasing need to increase productivity (through R&D and innovation)	'criminal neglect' – Quetta Hanna Lake (not considered a priority area)
5.	no fixed land master plan (policy level gaps), random and unplanned mushroom growth of urban settlements (clout enjoyed by local elites, real-estate moguls) water: no standardization or regulation of usage, comparison Australia, water policy characterized by reform and debate. Mainstreaming products such as the two-button commode or dual-flush toilet 2018 national water policy and attention paid to groundwater resources	need to problematize water consumption behaviors (wasteful)
6.	Pakistan emergency reserve capacity for water: 30 days (China: 6 months) land usage and water extraction: tube wells as a source of water wastage, need to introduce financial liability for water wastage for local farmers Quetta Hanna Lake, tanker mafia, case of criminal neglect (lack of rule of law)	'we haven't made use of our own resources' (water right, transboundary resource, state initiative in utilizing transboundary flow, difference in state attitudes: Pakistan versus India)

	urban areas e.g., Islamabad 'water boring' – looming crisis, 24hr operation – comparison: Denmark water efficiency and conservation, 'reusable' water sewage disposal and water resources	
7.	regional situation, Upper Indus Basin (UIB), Kabul basin: vulnerability to water stress due to significantly increased temperature, reduced precipitation, and decreasing summer flows shifting distribution and usage patterns, Indus Water Treaty water right: first in time, first in right (senior appropriator)	delinking politics not possible
8.	2017: creation of separate Ministry of Water Resources by then-Prime Minister Shahid Khaqan Abbasi, out of the Ministry of Water and Power. Power division merged into the Ministry of Petroleum and Natural Resources and converted into the Ministry of Energy. Goal to meet future challenges of water shortage taking all stakeholders on board.	nature of 2018 water policy, and operation of 2017 Ministry: 'just a paper document' – personnel reshuffled, lack of implementation plan
9.	technical expertise versus bureaucracy: organization of Ministry Departments, rapid turnover of staff i.e., secretaries PTI 'green' manifesto, reform movement under Ishrat Hussain: structural constraints (compare manifestos of political parties, is climate change afforded priority given its social and economic implications) civil versus military bureaucracies, locust attack and disaster management practices plus apparatus: Ayub Khan era, airplanes: 22 on standby, reduced to 2: low pesticide stocks, Department of Plant Protection Aircraft crash in Sadiqabad, January 2020 – Department functioning without a DG since the past 8 years Ministry of National Food Security and Research (Ministry of Agriculture) – 11 attached Departments of which only the PARC has a permanent head	'optics' of tree plantation drives, uphill task

10.	BRI and 'missed' opportunities in terms of agricultural exports e.g., livestock and Foot and Mouth Disease (FMD) free zones – inability to structure the same using good global practices, narrow export base = trade deficit (compare trade volume of India-China with Pakistan-China) trade superhighway, demand unmet: warehousing, cold chain, and logistics to promote the transformation and upgrading of agriculture and industry, comparison China-Iran trade agreement	state should have nothing to do with religion, though religious values can add wholesomeness to awareness campaigns and initiatives China should be better compared with India in ascertaining the link between economic progress and mode of governance liberalization needs boundaries – India has 'more democracy and freedom of speech' (but little else)
11.	potential of 'digital' tech: e-tagging and use of RAID (Redundant Array of Independent/Inexpensive Disks) for data storage, creation of real-time databases testing and traceability, R&D potential	national attitudes determine participation in multilateral protocols (nature and scope) – Nationally Determined Contributions, Planning Commission 'SDGs' desk - rooted in optics, attitude extended 'by default' to CPEC
12.	Post COVID19: vulnerability of supply chains, need for strategic policy	BRI 'not a charity' or philanthropic enterprise, concept of co-prosperity through collaboration (need to pull our own weight) Chinese notion of 'keeping a low profile' – Deng, hide your competence, not traditional understanding of 'alliance' as seen in the past (experience with the West) Edhi: things happen by doing, not talking Muneer Niyazi: actions versus words
13.		impact of prevalent political culture on reform
14.		Chinese side keen to have engagements in (climate resilient) agriculture, we 'need to get our own house in order' and 'know what we want from them'
15.		COVID19 and the vitality of food security (mindset shift, risk assessment)

XII. Mr. Mustafa Hyder Sayed, 06/14/21, WhatsApp Audio Notes + Forwarded opinion piece for CGTN: 08:02, 20-Apr-2021, The politics of climate change, (Executive Director Pakistan China Institute (PCI))

	Structure	**Culture**
1.	(shengtai wenming) in line with Xi Jinping championing climate change particularly in the context of Trump's withdrawal from taking leadership roles in climate change advocacy	Pak-China attitudes (climate action, green development) can be similar (aligned) as importance is shared (equally important)
2.	Xi Jinping's conception of climate advocacy in a larger (international) context, Pakistani government, and people, do have compatibility (7th most affected country, **carbon emissions 0.8 percent to total) emissions negligible** compared to adverse effects that we are getting	Eco-Civ, Sus-Dev intertwined, China's version of the interpretation of both very in-depth, taking into account history, culture, and development based on premise of cooperation not only of shared political interests but shared climate change/human interests
3.	CPEC can offer a means to addressing this (development/climate action), however it has to undertake greener projects, onus is on the government of Pak, ensure mega-projects happening under CPEC have rigorous EIA and feasibility studies	Eco-civ concept slightly changes the lens through which we look at sustainable development and climate change
4.	projects that are potentially adding to global warming, are not climate/ environment friendly: pre-empted, modified or put on backburner, cannot afford to have projects that are not carbon neutral or green	CPEC has the potential, relatively new project dating back to 2013, jury is still out (optimism versus pessimism in framing)
5.	decision by Japan to release over a million tons of radioactive wastewater, United States legitimized Japan's decision by terming it "transparent" and consistent with international best practices by other countries catapulting climate change, an issue beyond political partisanships, into the realm of partisan geopolitics, that could compromise the international consensus	political interests and geopolitics are blurring objectivity of issues that are purely apolitical, international, and collective, like that of climate change, is concerning, and shows a short-sighted, narrow vision The U.S., in its National Security Strategy document, says it shall cooperate, compete, and confront China, depending on the domain. Climate change is certainly an area to cooperate.
6.	selective application of compliance to environmental standards and climate change protection only wanes the credibility of the	

	United States adverse effect to the environment, the violation of human rights by polluting soil used for agriculture, fish that would potentially be consumed by humans, and all other long-term, unintended consequences is remarkably overlooked	
7.	institutionalized framework, inclusive decision-making processes with participation from an official representative from each of the neighboring countries and relevant stakeholders	

XIII. Dr. Mohammad Khurshid,06/18/21, (Former DG-EPA)

	Structure	Culture
1.	colonial legacy of local laws inherited from the British e.g., Forest Act (1927): felling requirements of local tree species in Northern Areas (tree rotation), need for revision of key 'black law' clauses	historical transboundary contact within Asian region (partially informs) anthropogenic attitudes (underlying resource usage)
2.	natural resources e.g., wood a source of livelihood and thus a key necessity – economics underlying rural dynamics in regions with endangered resources (e.g., temperate forests)	political pressure by highway department in expediting EIA of CPEC routes: KPK to Gwadar – paucity of time for more comprehensive assessment – piecemeal, and not holistic, reports (disregard for rigor of practice, emphasis on getting it done with)
3.	fragility of mountain ecosystems, protection of terrain alongside additional concerns: more time needed for surveys, three questions: i) methods employed should cause least disturbance to the land surface – risk of erosion and landslide in projects involving tunnel construction ii) downstream river flows: risk of silt accumulation iii) 'ecological engineering' to stabilize mountains 3-4 extensive Q/A session with relevant authorities including the NHA: NOC issued with some conditionalities: i) water flow, biodiversity movement should not be obstructed ii) impact of heavy traffic on surrounding	taking all stakeholders on board – public attitude more concerned with adequate (financial) compensation, than with environmental conservation

	ecosystem to be minimized	
4.	Chinese authorities would not issue go-ahead sans EIA report, EXIM (Export-Import Bank of China) would not transfer funds citing international practice	Chinese authorities going by 'international requirements,' attitude of local actors 'business as usual' (routine, not particularly pushed to ensure conservation)
5.	employment opportunities as compensation for locals	Local rules and regulations of a 'ceremonious' nature, enforcement and implementation not priority concerns
6.	Ratification of international conservation conventions not followed by creation of connecting laws: lack of local capacity particularly following devolution to provinces	Rivalries in-between private entities (business, industry), linkages between political and business elites: pressure exerted to sideline proposed measures, management plans discarded
7.	EPA lacks ability to enforce EIA reports (look to point 3)	Reactive, not proactive, attitudes of state elites (particularly bureaucracy)
8.	consulting agencies brought on board: political economy of global consultation industry (corruption/kickbacks): local agencies not vetted for technical expertise: incident of G-13 multistory building construction (respondent's own experience, civil engineer brought in for design focused on multistoried construction as indicative of development, without taking into account waste disposal or impact on surrounding ecosystem) arrangement lacking waste management setup – sewage disposal mechanism – deferred to CDA which lacks the infrastructure to arrange the same	lack of a sense of 'ownership' of state project drives in local communities: tragedy of the commons in place everywhere in Pakistan – communities attempt to exploit any available loopholes: he who acts faster can exploit earlier and more easily e.g., fishing sector
9.	training of human resource in civil engineering and related disciplines: lack of understanding of how to integrate concepts such as recycling and waste segregation at the source	no ownership, no enforcement mechanism: no impact of 'banning' practices
10.	EPA: academicians not having technical (engineering) backgrounds ill-situated to assess concepts such as 'circular economy,' consequently EIAs mostly ceremonious and lacking realistic applicability: need to involve experts (what is the nature and scope of the qualification needed to serve on an EIA panel?)	inability of politicians to prioritize need for coordination and cooperation, difficult to operationalize existing (climate governance) apparatus: meetings of bodies not organized, CCI obstructed by politicking, attendance of Chief Ministers (at climate-oriented sessions) considered a 'remote' issue perception of environment related bodies in public sector circles (cushy jobs, foreign travel perks) coordination a grave concern (not due to lack of apparatus, but lack of 'attitude')

		need to understand 'why they are not coming' e.g., attempt to increase school enrollment in education sector, need to first identify 'the problem'
11.	EPA lacks 'teeth' – legal backing – evidenced by lack of authority enjoyed by officials, comparison: Sri Lanka's Central Environmental Authority – an 'empowered' body able to take industries to task, no comparable empowerment of EPA in Pakistan	farmers work closely with the land, feel that the climate has changed – state officials, academicians 'live away from the land' (environmental projects/drives/centers concentrated primarily in urban environments) difficulty of involving illiterate (but more 'experienced,') stakeholders
12.	EPA lacks monitoring body/capacity	need to treat policy-making as a 'knowledge opportunity' i.e., means of better understanding local contexts (if by trial and error, hence the need for feedback mechanisms)
13.	Programs such as tree plantation drives not policy, but project, oriented. Lack institutional framework (laws against logging would ensure better success instead of solely focusing on afforestation) Focus on state-owned forest land: 3 percent. Remaining 97 percent privately owned, need to engage local communities and actors, incentivize plantation, and encourage local involvement through legislation Institutional focus – link afforestation to community benefit through effective legislation	international commitments in environmental conservation viewed as 'fads', commitments entered into by big leaders (looking for photo-ops with their Western counterparts) without looking into on-ground implications of the same need for realism: NDCs (Nationally Determined Contributions, Paris Accord) annual review programs 'tagged' after individual leaders (personality, not problem, oriented) and thus not institutionalized, cosmetic benefits ultimate outcome, lacunae in strategic policy design
14.	laws not derived from policies, no connection with the community	
15.	existing bodies (i.e., post 2017 National Climate Council, National Climate Change Authority) 'beautifully arranged' to bring about coordination among federating units, but ineffective may be addressed by 'sugar coating' i.e., associating environmental projects and initiatives at local levels with 'perks' – 'cross your message', question the impact officials have in	

	context of perks (have they earned them – accountability)	
16.	Policy-Feedback disconnect disengages key stakeholders i.e., farmers working the land.	

XIV. Mr. Abbas Shafqat, 06/15/21, (Section Officer/Focal Person for Ministry of Industries and Production on Environment and Climate Change, International Environmental Award Winner of "Kingdom of Saudi Arabia Award for Environmental Management in the Islamic World" (KSAAEM-2018/19) under category of 'Best Public Sector Project' (highest environmental award in the OIC))

	Structure	Culture
1.	'shengtai wenming' as a novel 'civilizational' legal principle mainstreamed in state constitution in 2018 background to mainstreaming important: post 2015 momentum: Paris Accord, Addis Ababa Action Agenda, Sendai Framework for Disaster Risk Reduction: boosted interdisciplinary synergy and (multisectoral) implementation strategies, any hindrance in one area would clash overall multilateral momentum, global pressure on BRI given high ecological impact of infrastructure projects, need for China to align with global policy narratives	'eco-civ' a means of aligning with global narrative (rhetorical exercise, 'greening' of BRI) in face of global castigation constitutionally professed, projected to a global audience
2.	Pakistan **GHG emission contribution to world total about 0.8 percent**, 5th position on Germanwatch Global Climate Risk Index, 4 key areas: i) Energy ii) Industrial Processes iii) Agriculture iv) Waste of 37 million tons, industrial output generates 25 million climate finance – comparison, Afghan War: 'hundreds of billions of dollars did not stay in the economic kitty'	analysis of what 'civilization' entails, China multiethnic, multilingual, with three major belief systems: attempt by Chinese Communist Party to coalesce all these (in order to generate stability) comparative analysis: Buddhist values across India, Nepal, and China BRI as the 'softer' option

	Chinese support for CPEC, contrast between (efficacy of) civilian and military regimes in Pakistan particularly in light of regional situation i.e., Indian threat, Afghanistan crisis: China's support at the cost of environment (but a cost calculated given current regional context) CPEC may enable regional integration	
3.	CPEC: expected vehicular traffic along KKH: 3-4,000 GHG emissions annual increase 24 Special Economic Zones (SEZs) across Pakistan, 9 falling under CPEC, requiring coordination among federal and provincial governments	CPEC and lack of intragovernmental coordination: 'fault does not lie on the Chinese side, previous government focused on climate/environment, established joint commissions and tax schemes (continuity of initiatives by successors, 'personality' versus 'problem' based politics)
4.	Pakistan Environmental Protection Act (PEPA) 1997, (Section 12) Environmental Impact Assessment (an environmental study comprising collection of data, prediction of qualitative and quantitative impacts, comparison of alternatives, evaluation of preventive, mitigatory and compensatory measures, formulation of environmental management and training plans and monitoring arrangements, and framing of recommendations and such other components as may be prescribed) operationalization, same with 2018 National Water Policy South Asian population roughly 2 billion (24.8 percent of total world population), three major mountain ranges (Hindukush, Himalayas, Karakoram) key to water supply – all three meet at Jaglot in GB, Pakistan (topography and climate action initiatives) Snow and glacier meltwater from the Karakoram and western Himalaya provides water to 268 million people in the Indus basin.	South Asian region: (some countries exhibiting) hegemonic designs over 'water resources' while others prone to 'dam phobia'
5.	Of about 500 multilateral agreements on climate/environment, Pakistan member to roughly 70 (bilateral fall in a separate category) Of these about 20 percent fall under the UN system	Federal action enabled 'true administration in national terms,' 'Environmental Pollution and Ecology' under Concurrent List from 1973 till 2010 (national terms – contrast with existing spirit of joint action on climate/environment)

6.	GHG emission and climate governance: two main instruments: i) PEPA 1997, schedule lists 14 main multilateral agreements ii) Pakistan Climate Change Act 2017 Pakistan Forest Act 1927 enacted from 1970s onwards (for all provincial governments) save in GB where the GB Environmental Protection Act was passed in 2015 under the auspices of CPEC, UNESCO asked to consider third biosphere reserve (Pakistan has 3 biosphere reserves, 400 protected areas recognized by the IUCN, and 35 national parks) (formation of "a globally unique 'Nature Corridor'", connecting Khyber Pakhtunkhwa and Azad Jammu and Kashmir via GB)	Initiatives like 'National Food Security Policy' (2018) a 'wish-list of the government,' no implementation mechanisms put into place, globally – legislative instruments include hard (binding) principles (that can be monitored for implementation)
7.	Impact of 18th amendment starting 2010: Part II of Federal List expanded i.e., under shared responsibility of federation and provinces (Part I indicates sole legal authority of Centre to implement policy in a national context), role of CCI enhanced. Post 2010, objective of decentralization and strengthening of local governance unachieved, as power shifted from Islamabad to provincial HQs (capitals) i.e., 'never passed on to local level,' local municipal administration subject of the people and the civil society (failure to mainstream issues such as the environment through local governance – implications for climate action) Post 2010, provincial governments enacted own environmental legislation, Punjab (1997), GB and AJK (2014) 2017 Companies Act and subject of industrial development (alongside environment protection) as shared responsibility of the corporate sector, empowers public-sector companies fed on public exchequer, not one of these (about 40) is a profit-maker (translate impact on competitiveness and environmental innovation)	solid waste disposal, problem of 'educating the highly educated provincial landlords (and industrialists),' 'legal' education (of consequences of polluting practices), 'hard nut to crack,' development not the issue (under existing governance models), rather 'the legal kitty of Pakistan,' as seen through constitutional safeguards and instruments

	provincial governments own efforts for industrial development	
8.	loopholes in international environmental law i.e., 1973-2010 period and 1972 Stockholm Declaration under global UNEP authority (impacted direction taken by research in intervening period, policy-making for mainstreaming commitments in domestic law)	'human rights,' legal, constitutional (guarantees) in Pakistan (and will + capacity of civil society actors to initiate projects on climate and environment action) 'hacking' of activist accounts (blackmail, threats, power of private sector groups – digital harassment)
9.	climate policy a nexus of water/food/energy and does not operate in isolation, each of the four previously listed GHG sectors interlinked i) Energy: Federal subject, legislation and framework under Ministry of Energy having two divisions: Power and Petroleum. 24 percent hydro, 6 renewable (wind, solar, and bagasse) and 66 thermal (NEPRA, 2019) - Bahawalpur Quaid-e-Azam 1,000 MW Solar Park - Aim for 30 percent renewable generation by 2030 (Reuters) - Regime isolationism: federal versus provincial - 2021 MoE attempts to formulate concrete and coherent national energy framework ii) Industrial Processes: Policy-making devolved to provinces, but implementation through Federal law i.e., CCI - 95 percent of industry SMEs - 5 percent cement, sugar, textile, and steel - PIDC (1952 Act) failed institute, industrial baselines from 1980s-90s era reflect higher revenues than applicable to 2000s, state-owned industry running on rental income of previous eras iii) Agriculture: largest emissions by sector, about 50 percent, Pakistan INDC for UNFCCC - Common but differentiated responsibility and respective capabilities	need for 'green mindset' without any discrimination (for select, privileged groups) – difficulty in educating through primary school setups, particularly with regard to effective behavioral change i.e., do not waste water or throw your trash out, adaptive techniques (water harvesting, organic farming) not a part of formal curricula (no practicable focus) i.e., how to reduce carbon footprint at household level (consumption-oriented)

	- State of industrial emissions reflects 'bleak' picture of developmental sector - 2025 Vision attempted pre-emptive incorporation of industrial development - Agriculture devolved subject, no single framework - 2018 National Food Security Policy, implementation (and inclusivity) iv) Waste disposal i.e., banning plastic – (highest percentage of mismanagement in South Asia) SRO (Statutory Regulatory Order) issued, sans framework at federal and provincial levels - Basel Convention and PET plastics (imported into Pakistan) not considered hazardous and not subject to banning, nature of collaboration of MOCC and the Ministry of Industries and Production - capacity of international versus domestic environmental law, 'binding' nature of the Basel Convention (for parties expressing their consent to the same) PET added to schedules - circularity and sustainability: plastic should remain in the economy but not in the environment, recycling the philosophy of the Basel Convention	
10.	SMEDA (Small & Medium Enterprises Development Authority): administrative and legislative potential, ability to leverage potential of existing institutional structures	education and multilateral awareness frameworks, 'knowledge sharing regimes present but scattered,' system failing to facilitate innovation (through research) e.g., public sector data access, EPA: regulation of use, sound management under Basel/Stockholm Frameworks (attitudes of those at the helm,

		the infrastructure for better management exists, the will/expertise to capitalize on it does not) 'need to get our house in order'
11.	state-civil society joint initiatives, (facilitated by) platforms such as IUCN (International Union for the Conservation of Nature), OXFAM, LEAD, WWF etc.	(banning access to data for the sake of security obstructs innovation, much better to) scrutinize requests for data access and thereby grant the same, with the understanding that the 'finished knowledge product' would be shared with the government by the researcher: profile-summary-evidence will to mainstream research-policy interface the need of existing compliance agreements (already entered into)
12.	electronic presence of public sector and civil society (and creation of transnational knowledge sharing regimes) overarching solution: science-policy interface, development policies research based, agencies and bodies allowed funds to provide inputs (to local consultant groups in the private sector, linkages) private sector may financially back industry-policy-academia linkage: this is missing from existing governance models mainstreaming of international principles in local policies through new 'green tech' interventions	attitude of reluctance necessitates examining the mindset of public functionaries, two models of governance: i) Liberal ii) Conservative conservatism rests on prioritization of the practical experience and exercise of theory by public functionaries in every walk of life laws built on bloc of colonial legacy, rules of business going back to '73 (need for a dynamic approach, evolving with the times) incompatibility of laws (and temperament) with global regime main problem 'mentality,' (need spirit of) 'World Conservation' 1980 (first international document on living resource conservation produced with inputs from governments, non-governmental organizations, and other experts, argues that for development to be sustainable, it should support conservation rather than hinder it, targets policymakers, conservationists and development practitioners with its core tenets of protection of ecological processes and life-support systems, preservation of genetic diversity and sustainable utilization of species and ecosystems. It highlights priority conservation issues and ways to tackle them to achieve the

		Strategy's aim. The report influenced "Our Common Future," also known as the "Brundtland Report" (1987) and laid the foundations for defining the principle of sustainable development.)
13.	question of finance (for innovation, adoption of green tech) mapping 'whole of national quantum' capacity and training of cyber wings to facilitate data transference models under Fourth Industrial Revolution (flow of data between departments) for R&D purposes central legal frameworks for data sharing, authentication (of user identity) and access processed through institutional scrutiny	Pakistan Climate Change Act 2017 established three institutional bodies to govern climate regime separately from the environment and generate 'room for maneuver': no single meeting of the Pakistan Climate Change Council has been convened to date Pakistan Climate Change Authority actual administrative body, members from across all federating units, plus technocrats: difference between intention and will
14.	need for a 'compatibility analysis' of laws, national law development process, give international law 'a home' in domestic legislation need for a permanent law reform commission (the Hamoodur Rehman Commission Report 1967 recommended to the Government that a permanent law reform commission should be created for regular and systematic reform of the legal system in the country) to report on social safety, human rights, environment etc.	
15.	Pakistan Climate Change Authority and MOCC: duplication of labor Ability of serving DGs to develop capacity below them, reshuffling every 6-7 months	

XV. Mr. Adnan Khurshid, 06/21/21, (DG Environment, EPA-AJK)

	Structure	Culture
1.	Azad Kashmir Development Working Party (AKDWP) approves projects costing up to Rs. 400 million and clears schemes for approval of the Azad Kashmir Cabinet Development Committee (AKCDC) costing up to Rs. 1000	'working culture' (in developing countries) co-related (with action taken on environment e.g., flash-floods in AJK i.e., attitude towards functioning of bodies in general – laidback, routine – impedes action needed to tackle

	million – organizational culture prevailing in both bodies does not prioritize environmental audits/climate adaptation or mitigation.	climate/environment as crises of creativity e.g., crises involving dynamic approaches to planning, implementation given key constraints)
2.	Chinese lead in technological innovation (potential for training human capital, informing means and methods of issuing/monitoring compliance with NOCs)	private sector motivated by profit maximization – 'unity' within government (federal versus provincial levels) challenging for presenting single orientation (towards development and environmental liabilities)
3.	multisectoral issues, multiple domains, nature of legislation must be 'interactive' and interconnected (effective communication needed between and within provincial governmental setups, and center-province interaction)	'paradigm shift' at international level, government functionaries met with requirements of international (multilateral) organizations to address climate and environment (external pressure) need for adaptation (meet new standards, gain access to international markets)
4.	comprehensive environmental baselines unknown, comparison with Price Control and Prevention of Profiteering and Hoarding Act of 1977	legislation on environment/climate (vis-à-vis growth and development) 'utopian' in nature
5.	adoption of 'best practices,' need for simplification of procedure (assessment, monitoring, enforcement of safeguards)	training of legislators to practice 'inclusivity' in designing the law (approach issues through an integrated approach, leave off politicking) (questionable) general acceptability of the 'laws we have for everything' by the general population
6.	weak knowledge base when it comes to environmental costs, better studies must be incorporated (into energy and developmental projects) (Agreements with China Three Gorges Company on implementation and water usage relating to the 1124 MW Kohala hydroelectric power project on Jhelum, second of six hydropower schemes planned for the river. The first is the Karot Hydropower Station, being built by China Gezhouba Group Company Limited.) (Neelum–Jhelum Hydropower Plant is part of a run-of-the-river hydroelectric power scheme in Azad Kashmir, Pakistan, designed to divert water from the Neelum River to a power station on the Jhelum River.)	consultant companies: specific groups 'hijack' intellectual properties, presenting studies in specific areas (to suit the interests of select patrons i.e., the political economy of consultation business is premised on status-quo and corruption) financing from multilateral institutions (USD 60 million) for environmental audits, allocation disputes, corruption

	Damming and river-diversion projects, chain reaction: fish dying out: Kotli on Poonch (river), acute water shortage in Muzaffarabad (impact on surrounding ecology poorly studied)	
7.	Funds for environmental assessments available in excess – NEPRA (National Electric Power Regulatory Authority) tariff, EIA; problem lies with system handling allocation/distribution	problem not simply from the government's side, parasitical attitudes of 'intellectual side,' and commercial sector company-consultant nexus, 'tentacles' of influence in hydropower projects, need for international consultants/local firms to be held accountable
8.	strategic role of PPRA (Public Procurement Regulatory Authority) in AJK, special laws needed to address CPEC projects in lieu of environmental costs: diversion of two rivers in 40 different locations – overall impact on surrounding ecology and downstream	proactive approach needed towards scientific research, prioritization of key projects i.e., establishing environmental baselines
9.	research-policy nexus: linkages with developmental sector e.g., surface water analysis Neelum-Jhelum, state support: stipends paid to Ph.D./MS students, independent departments with research capacity developed i.e., QAU-PIDE (staff from lead institutions across Pakistan) potential of AJK to act as a pilot study, reports/studies generated by research center analyzed alongside reports from consultant firms, requirements imposed in a systematic manner using adequate legal base, (entire process) compulsorily ensured at the behest of the government CPEC a key area meriting special attention (minimum 5-year plan for continuous, processual research)	status of CPEC and political pressure
10.	key priorities: i) monitoring and regulatory mechanisms allowed EPA to ensure compliance post project completion ii) environmental baselines, database monitoring procedures outdated, NOCs: compliance status reported by companies themselves, experiment of installing live monitoring equipment on steel factory premises	resistance exhibited towards adoption of newer, more efficient technology for monitoring/enforcement i.e., monopolistic attitudes of suppliers of current technologies

	(Siraj Steel Industries?) manufacture of monitoring equipment and acquisition – on-ground monopolies	
11.	improved monitoring infrastructure entails: i) selection of indicators premised on relevant parameters (e.g., photocells for monitoring river water quality, 7 parameters set specific to NOC) ii) technology must not be based on human intervention (autonomous)	Initiatives outlined in policy documents (2017 Climate Change Policy) enacted by 2-3 percent of government officials, broader picture indicates lack of understanding (as well as a failure to appreciate the gravity of the situation, resulting in complacency) need to pressurize officials (tie performance with promotion, institute punishments)
12.	Adoption of AJK Climate Change Policy in 2017, gradual trickle-down effect: Kohala Hydropower Project, stabilization of terrain, adoption of necessary safeguards at small level	lack of indigenous involvement, take up of policy initiatives
13.	policy feedback mechanisms missing, lack of input of locals on Neelum-Jhelum and Kohala	distrust between national and provincial bodies, exploited by the private sector
14.	Kohala Hydropower Project a 'Community Infrastructure Project' (CIP): China's assistance a key means of support 'has helped us a lot' – issue with utilization of finances, Pakistan failing to deliver on commitments in a timely fashion	failure to deliver on commitments indicative of a lack of ownership of project, failure to conceptualize devastating impact of rushed action – reactive, ad hoc approach to management as opposed to holistic Indus Waters Kishenganga Arbitration (Pakistan v. India): India water right – initiation of project before Pakistan's Neelum-Jhelum Project (first come, first serve, the early bird)
15.	Indus Waters Kishenganga Arbitration (Pakistan v. India) - need for regional water/climate diplomacy initiatives, comparison of India's development of water resources versus Pakistan's monitoring of water quality as well as volume, impact of upstream/downstream dynamics (on surrounding population)	ultimate penalty – movie exodus: 'chain reaction' of events, disproportionate escalation, difficult to control Quran: consequences of actions, accountability