

EVALUATING THE FEDERAL GOVERNMENT'S GREEN PAKISTAN INITIATIVE THROUGH THE LENS OF LOWER RIPARIAN RIGHTS AND INTERNATIONAL WATER LAW

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Abstract

Pakistan's Green Pakistan Initiative (GPI), launched in 2023 by COAS Asim Munir and Prime Minister Sharif to modernize agriculture via six new irrigation canals. The project would turn millions of acres of what is described as barren wasteland into farmland, which has seen fierce resistance in the Sindh province. As the lower-riparian province on the Indus, Sindh has apprehensions that diversion of canals upstream will reduce the historic water entitlement. This paper is a critical review of the GPI according to legal and policy perspectives with regard to its consistency and compliance with the constitutional water sharing arrangements (the 1991 Water Apportionment Accord and Article 155 of the Constitution), as well as international water law principles. Investigating the rationale and range of the GPI through doctrinal approach to research, the identifying key parameters within which the GPI functions in the federal water-governance system of Pakistan, the paper polls legal acts, intergovernmental policies and expert analyses available in the field. In the analysis, it is noted that the top-down of the GPI has so far faced limited provincial acquiescence in much of its resource planning, calling into question its processes under Article 155/CCI as well as the common-law equitable-riparian principles of international law (including their duties not to use resources in a manner that deprives downstream parties of a reasonable share or causes them harm by any means).

INTRODUCTION

Pakistan is facing the dire and worsening crisis of water, and this issue affects its social-economic landscape and security significantly. The per capita water availability of the country has been decreasing drastically with its per capita water availability being around 5,600 cubic meters in the year 1951 and presently being a paltry less than 1, 000 cubic meters which places the country in between the brink of being water-scarce. This urgent scenario is exacerbated by a fast-growing population, which in 2024, totaled 240 million and caused an enormous burden on the

already exhausted water sources. The most intensive use of the available water is in the agricultural sector, the mainstay of the economy, which performs this task in many cases inefficiently, creating another additional imbalance in supply and demand (Ishaque, Sultan, & ur Rehman, 2024; Saddiqa, Batool, Gill, & Khan, 2022).

These climate change effects are extremely clear showing as very unpredictable weather patterns, decreased melting of the glaciers, long periods of drought, and increased and severe heat accords. An

all-important drainage system of the nation, the Indus River System is extremely dependent on the melt of the glaciers in the Himalayas and thus it is very susceptible to these climate changes. With 25 percent of its Gross Domestic Product (GDP) and 37 percent of working population within its agriculture sector, Pakistan imported an inflaming amount of food products totaling to 9 billion dollars in 2023, a challenge that has prevailed, promoting food insecurity in Pakistan (Archer, Forsythe, Fowler, & Shah, 2010; Bhutto, 2025; Zeshan, 2024).

Following these complex and interposing crises, the Green Pakistan Initiative (GPI) was initiated in July 2023. The project is an all-inclusive initiative, which is government-driven, and was done in partnership with the Pakistan Army; in an attempt to modernize the agriculture sector, strengthen national food security, prevent deforestation and create an economically viable country. One of the main aims of the GPI is to convert 4.8 million acres of arable wastes into efficient agricultural land by the model of corporate farming and the goal is not short to a target of over 200,000 job opportunities in the agricultural, logistics, and technology sectors. The heavy-handed role of the military can be explained by the fact that food security should be viewed as the part of the overall state security, which makes the initiative an objective of strategic importance. The implications of this framing are that the GPI cannot be taken as a mere project of agricultural modernization but as a strategic national intervention, that will tackle three issues at once: economic revitalization, climate resilience, and national security. It appears like such a dual purpose may be holistic but in fact, is capable of generating complex trade-offs and possible conflicts especially when the issue of the distribution of scarce resources such as water, turns into a zero-sum game where competing interests and regions are pitted against each other. The profound status of military involvement is another indication of the strategic opportunity of this initiative and its top-down potentiality (A. Hussain, 2025; Rana, 2025; Wajid, 2025).

1.1 Perception of GPI in the Perspective of Lower Riparian

The present review paper critically examines the Green Pakistan Initiative, with particular reference to

its proposed large scale water diversion schemes, likely to be the controversial Cholistan Canal, which are aimed at extracting large quantities of water out of Indus River. The assessment will be done thoroughly in determining the consistency of the initiatives to the set principles of national water governance including the initial Water Apportionment Accord 1991 as well as the consequences of the devolution of the 18th Constitutional Amendment. Moreover, the paper will critically assess the GPI compatibility with the basic principles of international water law, in particular, equity and reasonable utilization (ERU) principle and the duty not to cause significant harm (ONCSH), and requirements of process, including prior notification and consultation. A special place of analysis shall be made on the implication of lower riparian rights with special interest in Sind province. The effect of upstream diversions on Sindh is well documented with high water shortages and environmental destruction (Angaria, 2025; Bhutto, 2025).

Legal and Institutional Framework for Water Management in Pakistan

2.1 Constitutional Basis: The 18th Amendment and Provincial Autonomy over Water

The 18th amendment to the Constitution adopted in 2010 has been a milestone in the history of Pakistan as an administrative structure as it has brought a radical change towards decentralization. This pivotal amendment in effect nullified the Concurrent Legislative List which in turn further gave broad provincial jurisdiction on a multitude of functions including essential aspects like agriculture, rural development, as well as management of natural resources. Upon its enactment, the amendment was smartly applauded by both the policymakers and academics as an important step towards the transformation of multi-order governance in Pakistan. Its broad aims were to promote cooperative federalism and make sure to overcome old inter-provincial animosities through creating provinces and giving them a greater say in ownership of resources and revenue sharing (Mujeeb, 2025).

Although the essence of the 18th Amendment was to decentralization of power and the establishment of harmony, the execution of the same has faced condemnation. Other studies posit that it has

unintentionally established a potential of a jungle of bewildering and conflicting regulatory standards and barriers of factor and goods mobility across the country by expressly acknowledging huge provincial control. This ambiguity is especially troublesome when it is applied to common resources, which in the case of water breach the provincial borders. The constitutional reform which is intended to bring about harmony can therefore become a new source of conflict as it has been pointed out that water management unlike other devolution subjects requires a collaborative approach as opposed to the approach of complete independence as a result of its interdependence between the provinces. The fact that a type of project such as the GPI, which is sponsored by the military seems to be going around the required provincial consent- explicitly goes against the spirit and purpose of such a constitutional amendment (Burfat, 2025; A. Hussain, 2025).

2.2 The Water Apportionment Accord (WAA) 1991: Provisions and Interpretations

One of the most important agreements leading to internal water governance of Pakistan is the Water Apportionment Accord (WAA) signed in 1991. It was formulated as a legal tool to clarify shares on available water of four provinces of Pakistan induced of Indus River System with a view to levitate prevailing disputes over equitable division of Indus flows, especially between the upper riparian province of Punjab with the lower riparian province of Sindh. Water entitlements based on calculated actual average uses of the system as measured against the range of 1977 to 1982 gives provinces the freedom to use their

quantified shares on new projects without being specified at all so long as they stick to their stipulated entitlements. The biggest apportionment is given to Punjab in this accord which is 48.92% of the base volume (Anwar & Bhatti, 2018).

Although it forms the basis of relationships, there have been ambiguities in the interpretation of Accord and thus there are mutual suspicions and allegations of water stealing between the provinces. As an example we can see that issues have been raised on whether or not the volumes stipulated by Accord are absolute or proportionate and/or dependent on the construction of further reservoirs. Dependence on historical data that was collected in the late 1970s and early 1980s, as well as with the ambiguity of the design, restricts the effectiveness of the Accord to predict future and effectively handle the situation, especially when the oscillations of the climate and demand are raging. The finding that no more storage space has been introduced to the system since the 1970s adds to the capacity of the Accord in order to handle water in an efficient and fair manner. It refers to the fact that the Accord, although basic, is not enough to address modern problems of water management, and that there is an immediate need to review this document and make it relevant to the modern hydrological realities. The additional canals suggested by the GPI would either be not explicitly under the allocated share of Punjab or without unanimity, goes fully against the spirit of WAA, making it a permanent reminder of life-long water wars and inter-provincial distrust in Pakistan (Anwar & Bhatti, 2018; Bhutto, 2025).

Table 1: Apportioned Volumes of Indus River Waters (Gm³/year) under the 1991 Accord (Anwar & Bhatti, 2018)

Province / Category	Summer Season (Apr–Sept)		Winter Season (Oct–Mar)		Annual Total	
	Volume (Gm ³)	%	Volume (Gm ³)	%	Volume (Gm ³)	%
Punjab	45.725	32.42	23.276	16.50	69.001	48.92
Sindh	41.864	29.68	18.280	12.96	60.145	42.64
Khyber Pakhtunkhwa (Non-Civil Canals)	4.293	3.04	2.837	2.01	7.130	5.05

Province / Category			Summer Season (Apr–Sept)		Winter Season (Oct–Mar)		Annual Total	
Khyber Canals)b	Pakhtunkhwa (Civil		2.220	–	1.480	–	3.700	–
	Balochistan		3.515	2.49	1.258	0.89	4.774	3.38
	Civil Canal Top-Sliced Volume		2.220	–	1.480	–	3.700	–
	Apportioned Baseline Volume		95.397	67.63	45.651	32.37	141.049	100.00
	Total Baseline Volume		97.618	–	47.131	–	144.749	–

^a Including already sanctioned Urban and Industrial uses for Metropolitan Karachi.

^b Ungauged Civil Canals above the rim stations.

2.3 Role and Mandate of the Indus River

System Authority (IRSA)

Under the Indus River System Authority Act, 1992, the Indus River System Authority (IRSA) was set up in 1992 as an important regulator that is mandated to supervise and allocate surface waters amid the provinces as stipulated in the Water Apportionment Accord. The main functions of it are classified as complete covering the formulation of water distribution principles, audit of the operation pattern of water reservoirs and rivers, exchange and coordination of data of the various provinces, priorities on irrigation and power needs, compilation of canal withdrawal indents and most importantly resolving inter-provincial water disputes. The directives issued by IRSA have the same legal status on the Water and Power Development Authority (WAPDA) as well as the provinces and the provincial government that is aggrieved by any decision made by IRSA has the right to observe the same to the Council of Common Interests (CCI) (Anwar & Bhatti, 2018; A. Hussain, 2025; Saddiqa et al., 2022; Zeshan, 2024). Most often, the effectiveness of IRSA operations has been put to test with a heavy weight on its legal mandate. It has been accused of the bias in water distribution as it has been viewed to be influenced by the Punjab province. An interesting example of this dilemma occurred in the GPI saga: Sindh sent a very strong protest against the Cholistan Canal Project because according to him, IRSA had no right to grant a certificate of water availability of such a project not to mention how they were projecting high water shortage within Sindh. That a project as GPI, though already objected by a provincial member of IRSA, was

originally passed on, only to receive suspension under the direction of CCI, indicates how far the de jure power of an IRSA is to the actual influence under the politically thrusting environment in India. This points to the fact that IRSA being an important cog is subject to political influences and might not have the autonomy or the power to enforce its will to mediate disputes and secure uniformity in conformity with the WAA at those times when the federal and military interests coincide with a provincial interest. This is weakness to its institutional downfall and increases the mistrust amongst provinces (Web Desk, 2025).

2.4 Function and Significance of the Council of Common Interests (CCI)

Council of Common Interests (CCI) is a constitutional authority created by the Constitution of Pakistan (1973) and specifically granted to sort conflicts and determine policies regarding the inter-provincial and center-province issues and such sensitive aspects as the distribution of water. As a result of the 18th Constitutional Amendment in 2010, the Council now has a statutory obligation to come together at least once in every ninety days and this has greatly boosted its formal functions regarding federal-provincial coordination and dispute resolution. Members of the CCI include the Prime Minister who is the Chairman of the Council, the four provincial Chief Ministers and three members of the federal government chosen by the Prime Minister. A dispute over water availability and provision between provinces and the federal capital is one such

area that may also be brought to the attention of the CCI by a written complaint (Burfat, 2025; Khan, Shah, & Ali, 2021).

The CCI had also recently been instrumental in the GPI controversy showing the power of its supremacy in inter-provincial issues. After acrimonious protests in Sindh and top-level political consultations, this CCI approved officially the federal government policy, which was never abandoned that, the new canal will not be constructed without mutual agreement between CCI, which makes the controversial canal projects like the Cholistan Canal stagnant until the provinces arrive at mutual agreement of such canal projects. This intervention brings to the fore the special, although late coming, contribution CCI made in resolving inter-provincial water wrangles that have reached the crisis phase. The information that it required widespread protests and political intervention at the highest levels of government to make use of its mandate may indicate that it is at best a reactive mechanism that waits to be reactivated by means of protests and political action high up in government. It reflects a structural vulnerability in which constitutional processes are not employed in a regular and in-advance fashion, that is that conflicts await a critical level before getting triggered, which compromises the provision of due diligence on the part of all stakeholders and that there must be a greater sense of proactive adoption (Shehzad, 2025; Web Desk, 2025).

2.5 National Water Policy 2018

The overall purpose of Pakistan National Water Policy (NWP) 2018 is relatively to provide adequate and sustainable safe water supply and efficient management and protection of water resource in the country. The philosophy associated with this policy is to adopt the Integrated Water Resource Management concepts and view ambitious goals that will include reducing the water losses by 33 percent in 2030 and provide marked improvement regarding climate resilience. The fundamental values of the NWP include the fact that water as a utilitarian need must not be exploited in the name of capitalism and the proposal requires the preservation of stringent statistical norms of use of water (Khalid, Khalid, Ayub, Khattak, & Farooq, 2024; Nazli, Liu, Wang, & Soomro, 2024).

NWP enforces different sustainable activities, including water price-setting options, development of water recycling rate, and overall strategies that can improve climate resilience. Some of the major policy initiatives announced are the establishment of sound legal instruments on safe drinking water, extension of the spread of water supply and treatment systems, the country should have a national water quality monitoring and surveillance scheme, development of rainwater harvesting, artificial recharge of the ground water table and metering of water usage to put off wasteful habits of using water in large quantities to cater to the ends of industry and urbanization. Although James and Verhagen hold that Pakistan has a national water policy that stipulates pro-gradient concepts of sustainable water management, such as conservation, climate resilience and equitable access, the extreme water crisis and intense water-related politics on the GPI show a clear mismatch between policy formulation and actualization. Unless corporate farming system promoted by the GPI and the mega-canal initiatives are properly guided to comply with the principles of equitable use and an environmental friendly of the NWP, the entire policy may be jeopardized. This means that although there are strong policy frameworks, poor institutional structures, inconsistent political wills as well as weak enforcement institutions are huge deterrence to performance, resulting in an uphill task to achieving implementation. The main issue is not related to policymaking, but the implementation of the policies in the complicated federal and political environment (Khalid et al., 2024; Nazli et al., 2024).

Lower Riparian Rights in Context: The Case of Sindh

3.1 Historical Evolution of Inter-Provincial Water Disputes

The water related disputes between the upper riparian province of Punjab and the lower water province of Sindh about how to substantially and fairly allocate the flows of the Indus River are as old as older as the 1947 division of the Indian subcontinent. Although Indus Waters Treaty (1960) was effective in international sharing of water between India and Pakistan, inter provincial water conflicts within each country continued to take place forcing them to

develop the Water Apportionment Accord (WAA) in 1991 to regulate such internal walls (Anwar & Bhatti, 2018; Zeshan, 2024).

A major decrease in the natural flow of Indus River due to decades of major related construction of upstream infrastructure, such as barrages, dams, and link canals has historically favored disproportionately Sindh. Even projects that were never built like the Kalabagh dam remained burning issues of perceived mistrust and unilateralism between the provinces and the federal government. This piece of history tells us that water war in Pakistan is not just a technical matter of resource distribution it is a political, identity and power struggle. The resistance to upstream projects that has occurred numerous times by Sindh and the packaging of the Cholistan Canal as an addition to the Kalabagh Dam project are early pointers to the continuing view that Punjab and a tendency to federal unilateralism. The implication here is that any newly proposed water project no matter how beneficial it is promoted as being, will be interpreted through the historical prism of mistrust, and thus consensus-building will be very difficult and highly politically and socially susceptible to the anticipated backlash. In this case, water is a powerful metaphor of provincial autonomy and opposition to alleged central or upper-riparian domination (Bhutto, 2025; Hadi, 2019).

3.2 Sindh's Dependence on the Indus River System and Existing Water Stress

Being the lower riparian province, the very existence and the economic stability of Sindh is directly related to the Indus River. The river supports the entire economy of the country which mostly depends on agriculture, sophisticated irrigation systems, and potable water sources. Any change in the flow of the river and above all its upstream diversion thus it is not an economic issue alone and is perceived as a directly threatening the identity and survival of the province (Angaria, 2025).

Sindh already suffers under the high-level water scarcity where eight of its districts already suffer moderate to severe drought situation. Statistics of the Indus River System Authority (IRSA) show that Sindh has failed to receive 14 percent of water, and in few months' time, the shortages are likely to increase to reach 30-35 percent. Moreover, within 1999 and 2023, Sindh was reportedly over-used by 40 percent

cut in its water supply compared to 15 percent reduction by Punjab. This combination of inherent susceptibilities, like drought prone regions or places where it was or is going to be diverted historically and proposed upstream diversions, with human-caused factors, is why there is no distribution of the water stress burden equitably. It means that impending new upstream diversion at any pretext even national development will further burden Sindh and result in its already vulnerable water security and subsequently social-economic unrest, rampant displacement in climate-induced migration and even humanitarian disaster as a result of failed water needs due to scarcity (A. Hussain, 2025; Murad, 2025).

3.3 Ecological and Socio-Economic Impacts of Upstream Diversions on the Indus Delta

Natural flow of Indus River has become a major casualty due to decades of the upstream infrastructural development that incorporated barrages, dams and link canals. This has made the loss of the water to the Arabian Sea to be less than 1 Million Acre-Feet (MAF) in cases of most of the years. This quantity is dangerously low as compared to the recommended minimum environmental blood flow of at least 10 MAF assumed critical in the ecological health and sustenance of Indus Delta (Bhutto, 2025). This means that freshwater has been cut to cause the alarming shrinking of Indus Delta that once a sprawling lifeblood covering approximately 12,900 square kilometers (Lohar, 2025). This environmental degradation has worsened seawater intrusion and salty waters have moved as far as 84 km up-stream in Indus River in case of dry seasons. Such encroachment increases the rate of land degradation making over 1.3 million acres of previously rich lands unproductive. The environmental consequences are grave: the valuable mangroves, important in coastal defense and in providing a habitat to a wide variety of marine life, are in a very poor state, and as such are to collapse, causing a major blow to the fishing industry, a major source of livelihood among the coastal people. Another species in danger, Indus blind dolphin (*Platanista gangetica minor*), a threatened freshwater cetacean, is in danger of extinction because of the dangers of habitat segregation and decreasing water volumes (Arijo, 2025; Kalhor et al., 2016).

On the socio-economic front, there is direct effect of rise of saltwater intrusion in some coastal towns like Ketī Bandar and Kharo Chan. This compels farmers to leave their ancestral land leading to climate induced migration, which worsens socio-economic instability. Inhabitants of these deltaic communities especially women lose their jobs, their autonomy and agency because of the loss of habitat. Moreover, the low freshwater flows also damage the natural pollution clearing power of the river in question, as the water available is polluted to even greater degrees. This represents a great urban health emergency in major cities such as Karachi and Hyderabad which depend on lower stream barrages to supply drinking water since drinking water is often not up to the standards of World Health Organization (WHO). The numerous, sequential effects on the Indus Delta (shrinking, salinity, biodiversity loss, community displacement, and public health risks) cannot be simply regarded as separate environmental issues that

are unrelated to upper-stream water abstractions, rather, they are direct, measurable causes and direct, measurable effects of the upstream water diversions. The degradation of the delta is an important indicator, an indicator that there is unsustainable management of water systems in the entire Indus Basin. It can be argued by the proponents of GPI that the delta is not the place where freshwater gets wasted, but silt disposal, on the contrary, is the source of water general and land loss defense, which is absolutely misleading the erroneous ecological thinking or intentional ignorance of the role of the delta. This would mean that any further upstream schemes without sufficient environmental flows would result in irreparable ecological ruination and the additional misery of humans with a serious environmental justice problem of the downstream community bearing the brunt of development impacts (Arijo, 2025; Bhutto, 2025).

Table 2 Environmental and Socio-Economic Impacts on Lower Riparian Regions due to Upstream Diversions

Impact Category	Specific Impact and Data
Ecological Degradation	Indus Delta Shrinkage: Once a sprawling lifeblood covering approximately 12,900 square kilometers, now drastically reduced due to decreased freshwater flow.
	Seawater Intrusion: Penetrates up to 84 km upstream in the Indus River during dry seasons.
	Mangrove Forest Decline: Mangrove cover has dropped significantly, triggering near ecosystem collapse.
	Biodiversity Loss: Decline in aquatic and estuarine species, including threat to Indus blind dolphin (<i>Platanista spp.</i>)
Land and Agriculture	Land Degradation: Over 1.3 million acres of fertile land rendered saline and uncultivable due to seawater ingress.
Socio-Economic Impacts	Fisheries Collapse: Deltaic and coastal fish catch down 70–80% over recent decades, affecting livelihoods.
	Displacement and Migration: Thousands of farmers displaced from Thatta, Sujawal, and Badin due to crop failure.
	Water Quality in Urban Centers: In Hyderabad, TDS levels reached 790 mg/L, exceeding WHO's 500 mg/L limit.

3.4 Grievances and Protest against GPI by Community

The Green Pakistan Initiative especially its Cholistan Canal project has sparked off mega and widespread riots by the people of Sindh province drawing on long

held mistrusts and resentments. Human rights activists, lawyers, the civil society, and farmers have come out in a loud voice declaring frightening effects on their livelihoods and water security. These activists

have been expressed through severe demonstrations in the main streets such as obstruction of major roads such as Babarloi bypass that has affected transportation and business in Sindh and Punjab. Lawyers have become the center-stage leaders in the movement and the groups representing the rights of women too have taken an active interest like the Sindhiyani Tehreek, who point out the imbalanced effects on women within the deltaic communities (Angaria, 2025; Murad, 2025).

Political opposition also took formal shape with Sindh Provincial Assembly unanimously resolving itself on March 13, 2025, and rejecting the canal project. The Sindh government has also set its criticism in a more formal manner as it objected the issuance of a certificate of a water availability of the Cholistan Canal by the IRSA as this was considered groundless since Sindh was already under an existing situation of water stress. In reaction to the rising protests and proliferated political pressure, a temporary suspension of the Cholistan Canal project by the federal government took place on April 24, 2025 which further directing that the project would obtain a quick start after provincial consensus was obtained at the Council of Common Interests (CCI). Nevertheless, demonstrations persisted and activists called to permanently halt the project and argued that there had been continued working on the project with a silence even though it was said that the project was stopped. These ongoing anti-development protests in the province of Sindh are not just another development project protest but an effective work of the people to articulate their view of injustice, infringement of basic human rights to water and livelihood and an outcry against one-sided decision-making. The foregoing proves that the mass action was quite powerful and the causes of dissatisfaction experienced by the lower riparian were hard to ignore to the point of the temporary suspension of the project by the federal government. This shows that top-down development programs which do not involve authentic provincial and community consultation and consent are bound to be very unpopular and national unity and stability will be at stake. Protests are due to a basic lack of trust and governance (A. Hussain, 2025; Mohsin, 2025).

Green Pakistan Initiative (GPI) Implementation and Water Resource Management

4.1 Objectives and Key Components of GPI

The Green Pakistan Initiative (GPI) is introduced as a complex and ambitious project aimed at solving the topical tasks of food safety and the economic development of Pakistan and environmental sustainability of the country. The main declared goals are to transform the agricultural sector, improve food security at the national level by decreasing importance of the foreign food dependence (\$9 billion on the foreign food imports in 2023), and the economic growth of the country substantially. The project is also expected to repurpose large areas of unused land and create a surplus of exports, as well as to produce more than 200000 employments in the agricultural, logistics, and technology industries. Framing food security as a component of national security as a whole makes the great role of Pakistan Army reasonable to give the initiative a strategic ground (A. Hussain, 2025; Rana, 2025).

The GPI is modeled as consisting of a number of important elements:

- **Corporate Farming:** A significant tenet of the GPI is commercial leasing out 4.8 Million acre (1.94 Million hectare) of cultivable waste lands to productive agricultural lands. In the properties under this model, the investors will give the same terms but will lease the piece of land less than 1,000 acres to a maximum of 30 years. The Green Corporate Initiative (GCI), which is an army owned private company registered under the Security and Exchange Commission of Pakistan (SECP) is charged in particular with managing and bringing into effect this modern agri-farming. The identification and allotment of land have been done in many provinces with about 52,000 acres designated as land in the province of Sindh (Green Pakistan Initiative, 2025; Hamayon, 2025; A. Hussain, 2025; Wajid, 2025).
- **Infrastructure Development:** The planned construction of 6 new canals around the country is perhaps one of the most substantive and unpopular parts of the GPI of which five will be drawing from Indus river system to irrigate the identified 4.8 million acres of unfertile land. The most controversial and longest canal at 176 km, Cholistan Canal with

carrying capacity of 4,120 cusecs, is estimated to cost about \$783 million, and that it is likely to be completed at mid-2030 (Bhutto, 2025; Green Pakistan Initiative, 2025; Hamayon, 2025).

- **Agri-Malls and Services:** The initiative here includes opening of Green Agri Malls, which are envisioned to give the farmers a one-stop facility with a target of 250 green malls in Pakistan. These malls provide quality seeds, fertilizers, pesticides and also modern agricultural equipment such as drones and fuel solution as a brand alliance with PSO. Moreover, these centers offer much-needed technical advice in the form of soil testing, laboratory analyses as well as real-time suggestions on weather conditions and methods of irrigation (Green Pakistan Initiative, 2025; Hamayon, 2025).
- **Research & Development:** The GPI will bring a gap in knowledge of advanced farming techniques by means of agricultural research institute, organized training, professional lectures, digital sources to enhance farmers' competence (Green Pakistan Initiative, 2025; Hamayon, 2025).
- **Financial Inclusion:** This will give farmers better access to finances through credit accessibility, loyalty card programs and buyback options of commodities and thus aiming at reducing their exposure to less friendly loans and improving their profitability (Green Pakistan Initiative, 2025; Hamayon, 2025).

The elaborate breakdown of the GPI demonstrates that it is an exceptionally ambitious and multidimensional initiative that seeks to combat an astonishing range of security threats, including food insecurity, economic prosperity and resiliency to climate change. Nonetheless, the heavy involvement of the Pakistan Army, having set up the Green Corporate Initiative (GCI) as the sole proprietary, institutionalizing it under the Special Investment Facilitation Council (SIFC), is quite indicative of a supreme, centralized top-down approach to development. Although this may be an effective method of raising resources and foreign investment, there is a concern of whether or not this approach can be inclusive and transparent as regards to inclusion of various provincial stakeholders, as well as local communities. The unilateralism view can be produced by the centralized decision character and the military support and likely to increase inter-provincial tensions

and harm the idea of cooperative federalism (Green Pakistan Initiative, 2025; Hamayon, 2025; A. Hussain, 2025).

1. International Water Law Perspective

5.1 Key Principles:

The international water law is a set of rules defining the use of transboundary water and easing transnational disputes; in addition, it helps to establish cooperation between countries. The principles that are used in developing this framework include Equitable and Reasonable Utilization (ERU) and Obligation Not to Cause Significant Harm (ONCSH) (Beaumont, 2000; Rahaman, 2009; Salatikoye, 2019).

According to the Equitable and Reasonable Utilization (ERU) principle, every state party of the watercourse has the right of an equitable and reasonable utilization of the international watercourse by being specified in its territory. Under this principle, states are required to utilize and develop mutually recognized water services with an aim of maximizing the use of such services and deriving benefit out of them without harming the interests of all interested states of watercourse in a way that reflects enough protection. ERU does not mean equal division of the water available but a fair distribution which takes into account the different factors relevant to the decision including basin geography and hydrology, climatic conditions, previous use (particularly current uses), economic and social demands, population and the need of people, costs of substitutes and viability of other resources available as well as avoidance of wastage and the substitutability of compensation. This doctrine is intended to strike equilibrium between the interests of the upstream and downstream states since peacefully, their interests tend to be interdependence, forming part of a "community of interest". States upstream tend to favor ERU since this gives them more room to develop and states downstream will stress the principle of no harm (Mcintyre, 2015).

The Obligation Not to Cause Significant Harm (ONCSH) is one of the central culminating doctrines cut using the wider international legal rule of: "Sic utere tuo ut alienum non laedas" (so use what belong to you as not to harm another). It compels states to exercise all relevant measures applicable to ensure that

their activities do not cause severe harm to other states of watercourse or their environment. This is captured in Article 7 of the UN Watercourses Convention 1997, which provides that the watercourse states are supposed to exercise due diligence in order to ensure that they do not cause any significant harm. In case, however, serious harm is suffered the state whose use gave rise to harm is under an obligation to do everything possible, in consultation with the state suffering the harm, to do away with or make reasonable the harm. The very understanding of the principle of significant harm is challenging and may be subjected to different interpretations, in general, this principle usually includes environmental damages, pollution, and negative effects on the livelihoods (Beaumont, 2000; Rahaman, 2009; Salatikoye, 2019). The balancing of ERU and ONCSH are important. ERU is an accurate formula to achieve optimal and constructive use whereas ONCSH represents an effective insurance policy, which guarantees that the development made by one of the riparian states shall not unfairly affect the interests and welfare of other parties. This mutuality is critical towards sustainable and collaborative administration of common risks of water.

5.2 Procedural Obligations:

In addition to substantive water rights and duties, the international water law implements some important procedural obligations, which are used to build cooperation and avoid conflicts regarding common watercourses. These encompass, the prior notification, consultation and more such like the environmental impact assessment (EIA) (Salatikoye, 2019).

The Prior Notification and Consultation are also crucial elements, which put the onus on a watercourse state to give notification and consultation with other states, which might be affected by the action, and whose water resource may be affected by an activity, which the notifying state intends to take. This duty concerns both upstream states, and downstream states. This procedure is aimed at facilitating the mitigation and avoidance of the conflicts that could occur with the planned measures, which entails the feasibility to reach a joint evaluation of the possible implications as well as the search of the acceptable

solutions by both parties (Beaumont, 2000; Rahaman, 2009; Salatikoye, 2019).

The Environmental Impact Assessment (EIA) is strongly connected with an obligation not to cause any serious harm and it is often regarded as a prior requirement of the projects on the international watercourses. It includes giving clear information about the proposed project inclusive of the evaluation of the environmental effects of the project to the other riparian states. The EIA process assures that a project goes through an identification and assessment of potential adverse effects prior to proceeding with the project, so that a sound basis can be made to make decisions and design mitigation programs. This focus of transparency and engagement on these procedural requirements is a key building block in prevention of conflict. This can be done by making sure that all the parties that may be affected are informed, consulted and allowed to offer suggestions so as to minimize the possibility of unilateral actions that may end up either in confrontation or a conflict. This creates an atmosphere of collective ownership and responsibility to the management of the transboundary/international water resources (Beaumont, 2000; Rahaman, 2009; Salatikoye, 2019).

5.3 Research Stance of Pakistan and its International Commitments

The Indus Waters Treaty (IWT) of 1960 between Pakistan and India is the main part of international water law, governing an Indus River System which is transboundary in nature. This is a treaty brokered by the world bank that gives waters of the eastern rivers (Beas, Ravi, Sutlej) to India and those of the western rivers (Indus, Jhelum, Chenab) to Pakistan. The IWT is an agreement affecting Indus basin which is restricted and binding as it is superior to the general international law that regulates the international water law under the article 3 of the UN watercourse Convention which provides that the Convention itself will not have any effect on obligations or rights deriving out of an existing agreement (Akhtar, 2010; Bauer, 2025).

The Water Apportionment Accord (WAA 1991) in Pakistan is an internal implementation of sharing of principles of the water between the provinces of Pakistan to demonstrate a national agreement on the practice and distribution of water. Though the WAA

targets even distribution, it has been observed to be ambiguous and poor in its implementation (Anwar & Bhatti, 2018).

On the larger international mechanisms, Pakistan is not a signatory of the 1997 UN Convention on the Law of the Non-Navigational Uses of International Watercourses. Although not universally ratified, this Convention can be viewed as most authoritative expression of general principles relating to non-navigational use of international watercourses, one of which is ERU, ONCSH, and also prior notification (Beaumont, 2000; Rahaman, 2009; Salatikoye, 2019). Likewise, the Helsinki Rules on the Uses of the Waters of International Rivers (1966) adopted by the International Law Association are not also binding directions that however make assertion of rights to a fair share in by all nations that border water sources as well as obligation of safeguarding against pollution (International Law Association, 1967; McCaffrey, 2001). Uniqueness of these rules is that they shaped the UN Watercourses Convention (McCaffrey, 2001). The adjudged Pakistani tendency to selectively adhere to the international norms, in the sense of failing to ratify the UN Watercourses Convention, may be understood as the reasonable pragmatism, aiming at retaining the room of flexibility in its water management measures. But this position also has some implications as well. Although the Indus has a certain structure associated with the IWT, the bigger conventions are not ratified, which in turn makes general principles merely advice, being somewhat of an issue according to this perspective. Such selective interaction might restrict the channels of solving conflicts in universal schemes and be viewed as unwillingness to wholeheartedly follow the updated values of international water law based on interdependence, openness, and non-causation of harms to transboundary situations. It indicates a bias towards bilateral or national arrangements, against a time when the world is talking more and more in terms of comprehensive and universally applicable legal regimes of shared water resources.

2. Challenges and Critiques of GPI from a Water Law Perspective

6.1 Non-Compliance with 1991 Water Apportionment Accord

The Green Pakistan Initiative especially its proposed mega-canal schemes such as the Cholistan Canal, have received tremendous criticism along the lines of noncompliance with the 1991 Water Apportionment Accord (WAA). The WAA is the basic legal framework which controls distribution of water between the provinces in Pakistan which explicitly describes water quota per province. The lower riparian province, Sindh, claims that the upstream diversion of water, principally to Punjab, and the creation of new canals by the construction of new canals would reduce an already limited access to water of Sindh as the diversion clearly goes against the provisions and the spirit of Accord (Angaria, 2025; Mohsin, 2025; Rana, 2025).

According to the data of IRSA alone, Sindh has unfairly experienced water shortages, with 40 percent of the water allotted to Sindh estimated to be lost over the period of 1999-2023 in contrast to 15 percent of Punjab. And finally, the future predictions issued by IRSA have also hinted about major water scarcity experienced within Sindh which may even reach 30-35% in the future. It is amazing or surprising that even after the alarming figures and objections of the IRSA representative at Sindh the authority still gave the first certificate of water availability to the Cholistan Canal in which the chief minister of Sindh argues that the decision was very wrongful. This scenario is a clear attack on the national systems of water governance. It is only the perception that water needs of the GPI would be greater than the share that has been allotted to Punjab or would result in affecting the rights of Sindh that directly brings out the possibility of a breach of the Accord. Not only does that compromise the framework of the law, but also increases the tensions that have long existed between provinces, which may result in a new confrontation over the same resources (A. Hussain, 2025; Z. D. Hussain, 2025; Kumar, 2025).

6.2 Shelving the Constitutional and Institutional Mechanism (CCI, IRSA)

One of the biggest criticisms of the implementation of GPI is the allegation of ignoring the laid down constitutional and institutional means of resolving inter-provincial water disputes. This role of balancing and distributing resources is enacted by Article 153 of the Constitution of Pakistan which forms the Council of Common Interests (CCI) itself to manage such situations. By analogy, IRSA is expected to curb water allocation as per the WAA and resolve conflicts, as stated by the Indus River System Authority (IRSA) (Anwar & Bhatti, 2018; Burfat, 2025).

The opponents of the project are however asking why the federal and the Punjab governments did not engage in the Cholistan Canal project through these constitutional means without substantially considering the valid objection of Sindh Government and only act on unilateral decisions. The Cholistan Canal was originally accepted though this was objected by the IRSA member of Sindh. This project was passed to the Executive Committee of the National Economic Council (ECNEC) even against the objections of Sindh and without the CCI approval necessary. This was the perceived marginalization of IRSA and the early circumvention of the CCI and it is under this scenario that the suspicions of undue influences and uneven policymaking to the prejudice of Sindh to Punjab are raised. Whereas at some point the CCI stepped in and ordered the suspension of the project pending provincial agreement, to a great extent, this move was at the back of large-scale demonstrations and political negotiations on top levels. This chronology of events indicates a deterioration in the institutional integrity and federal-provincial level of trust. When its established institutions such as IRSA and CCI feel that their decisions are being fronted by an executive action or snubbed by such a move, it is a challenge to their authority and therefore to the very principles of cooperative federalism incorporated into our Constitution in the 18th Amendment. It may cause increased inter-provincial differences and failure of the rule of law in common resources (Burfat, 2025; A. Hussain, 2025; Z. D. Hussain, 2025; Kumar, 2025).

6.2 Inadequate transparency and consultation of the stakeholders

It is fairly criticized that the implementation of the Green Pakistan Initiative has majorly lacked the transparency of information, proper stakeholder involvement among other countries, especially the lower riparian province of Sindh and the local communities who are being affected by this initiative. Critics have said that the project was designed and initiated without adequate consultations with the major stakeholders particularly in Sindh and this has added to the notion of a one-sided decision-making process by the central government and the Punjab authorities (A. Hussain, 2025).

The striking lack of detailed and publicly available Environmental Impact Assessment (EIA) is the absence of such reports on major parts, such as Cholistan Canal. The international water law as well as best practices in regards to large-scale water project development underline a critical role that EIAs and their publication in the mass media, as well as effective consultation actions, play in detecting and facing the likely negative effects. The role that military had in the process, and how the Green Corporate Initiative (GCI) became the sole proprietary, in terms of acquiring of the land and investing in it, further puts to question the transparency of the land acquisition and investment conditions. This ambiguity is a greater issue and concerns the means which would be used to obtain irrigation water in the new territories, particularly in case of insufficient water in Sutlej and a diversion by Punjab of the Jhelum River, which may affect the water supply of the Indus to Sindh. It has engendered a serious lack of trust because of this lack of transparent data and consultative processes. The danger of the unilateralism is manifested in the fact that it is the source of mistrust and opposition. When important shared resources decision is not made in the open process, with open information and genuine agreement of all interested parties then the outcome is always allegations of abuse, lack of powers and much protest and objection as has happened in Sindh (Katkurwar, 2025; Salatikoye, 2019).

6.3 Environmental uncertainties and unsustainability

The costly schemes of big irrigation and corporate agriculture in which the GPI is involved especially in the arid land like Cholistan are associated with great environmental dangers with the issue of long-term sustainability arising. The fact that the project will be dependent on diverting waters of the already over-stressed Indus river system is a major issue of concern. This is already very much reduced due to decades of the upstream diversions, where the river has an annual outflow to the Arabian Sea that is less than 1 MAF in most years, that is, much less than the minimum environmental flow required in order to maintain the natural functioning of the Indus Delta (Bhutto, 2025).

Other distractions as per the GPI are likely to further worsen the current environmental degradation in the lower riparian areas. This involves increased intrusion of seawater which has already made over 1.3 million acre of arable land infertile and destroyed essential mangrove cover. Disappearance of these ecosystems is highly detrimental to the fishing industry and poses a major risk to biodiversity that includes endangered species such as Indus blind dolphin. The critics also caution that irrigation at a grand scale that is planned under corporative farming has the potential of exhausting the groundwater deposits especially in the state of Punjab where the existing water table continues to descend at the rate of one meter each and every year. Also, these activities might result in deterioration of land, elevation of carbon emission by deforestation, and consequent imbalance of ecology. It is important to note that the claim that the fresh water is not wasted in the delta but is critical in terms of silt clearance and avoidance of intrusion by the seawater contextualizes the underlying ecological ignorance or ignorance of the importance of the delta. This is a form of development at a possibly high environmental risk. The environmental and social cost in the long run can be huge as further unsustainable practices associated with managing water are likely to result in irreversible ecological disaster and subsequent human pain especially in the down-stream population, whose economic interests are directly related to the health of the Indus Delta (Angaria, 2025; Arijo, 2025; Bhutto, 2025; Wajid, 2025).

6.4 Socio-Economic Equity concern

In addition to environmental and legal issues, the corporate farming model of Green Pakistan Initiative incurred serious socio-economic issues of equity. On the one hand, the supporters point out the creation of jobs (at least 200,000 people have found new jobs according to the reports) and economic development, whereas the opponents note that this program can adversely affect small farmers and landless peasants rather than massive investors and agribusinesses (Pakistan Kissan Rabita Committee (PKRC), 2024; Wajid, 2025).

That the investors are required to provide a security deposit of 20 million PKRs per 1000 acres will make it impossible to take part in the project on the part of most farmers in the rural areas, creating more disparities in land distribution and resources. There has been an outcry in both Punjab and Sindh and farmers and activists have been agitating fearing that they will be evicted and land grabbed in the name of modernization of agriculture. Such organizations as Pakistan Kissan Rabita Committee (PKRC) claim that corporate farming is a poison to peasants and small-scale farmers' death which is created to make a capitalist level and military leadership, which will be the initiators of the project prosperous. Their arguments are that the government needs to concentrate on having comprehensive reforms on agrarian and empower small farmers by providing them with modern equipment (Pakistan Kissan Rabita Committee (PKRC), 2024). This state acme a grave concern: exacerbating inequality. When national initiatives, despite their stated goals of food security and economic uplift, are perceived to disproportionately benefit a select few powerful entities over the majority of the agricultural workforce, it can lead to increased rural poverty, social unrest, and a deepening of existing socio-economic disparities, undermining the very notion of inclusive development.

3. Conclusion:

The review establishes that though its GPI is ambitious, it has been faced by serious legal and environmental challenges. On procedural grounds, the project has also created an end run around existing constitutional and statutory avenues of

interprovincial water-sharing: there was to be no new canal without a consensus in the Council of Common Interests (CCI) under Article 155. The federal scheme could erode the generous allocations of the Water Accord of 1991 and the principles of cooperative-federalism by going forth with the federal scheme without integrating the Sindh into the scheme. Ecologically, the unregulated diversion poses threats to agriculture in Sindh, to the aquifers system, and a vulnerable eco-system of the Indus Delta, further adding to the already present water shortages. Such stakeholders have cautioned more withdrawals as they may worsen soil salinity and displacement at downstream districts. In a nutshell, the original formulation of GPI opposes short term development priorities over long term legal entitlements and sustainability factors. The conclusion highlights some of the policy directions to solve such problems.

- **Appreciation of Cooperative Federalism:** Federal policy-makers should not neglect or leave out provincial governments with aid of CCI and IRSA. The tendency is demonstrated by recent precedent the government stopping the construction of canals in April 2025 until the CCI reached agreements. There is explicit envisaging of the process of dispute resolution through consensus in the Constitution and Water Accord. Inclusion of input a priori should be applied in future projects so that Article 155 would be followed and litigation avoided or an unrest like the one experienced could not be realized.

- **Water-Governance Reform:** The national water strategy of Pakistan (i.e., the 2018 National Water Policy) needs to be reinforced to ensure that trajectories to increase supply and control demand are held in balance. Analysts suggest that time should be diverted to putting emphasis on the efficiency, conservation as well as domestic profit-sharing rather than putting emphasize on new supply side projects. As an illustration, it may be suggested that the legacy laws can be rewritten and that the enforcement authority of the IRSA can be strengthened, thus facilitating the maintenance of the concluded water shares. It is also necessary to restore the trust within the province to establish transparency and anti-corruption measures. In brief, a sustainable water governance regime would complement mega-scale programs such as the GPI with strict resource

accounting, environmental protection and equitable distribution.

- **International Norms Compliance:** The GPI review points to the fact that Pakistan needs to use the principles used in other countries as its own norms. Reasonable and fair use of water of Indus watercourse by not causing any substantial harm downstream is a pillar of international water law. The lower riparian rights would be safeguarded by enshrining these norms in the national policy-maker-law or therapeutically in CCI-mediated agreements. As a matter of practice what it should mean is that the canals and reservoirs should be designed in such a way that there is minimum flow to Sindh, and compensation or mitigation of any unavoidable effects. Accountability can be made stronger by framing inter-provincial water-sharing as part of constitutional obligation as well as principle of customary international law.

In short, any future success of the GPI depends on reconciling the development goals of the GPI with the legal intentions of Pakistan and the realities of the environment. It will important to strengthen cooperative federal systems, transform the existing water governance institutions and also accept the international standards of water-sharing. In this way, besides avoiding the occurrence of a new water conflict, such steps assure that the agricultural and climatic objectives of the Initiative are achieved without compromising the water security and rights of the communities downstream of the River.

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