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HISTORICAL OVERVIEW OF THE SINDH-PUNJAB WATER DISPUTE AND THE ANTI-DAM MOVEMENT IN SINDH: A STUDY OF ENVIRONMENTAL JUSTICE [1]

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ABSTRACT

The issue of environmental concerns and conflicts has been present throughout human history, from ancient civilizations to the contemporary world. The mainstream environmental movements initially focused on preserving wilderness, wildlife, resource conservation, pollution reduction, and managing population growth. However, these movements mainly gained support from middle and upper-middle-class white communities and struggled to attract the poor and minority communities, who felt that their central concerns were not being addressed. This led to the emergence of the environmental justice movement in various parts of the world, including Sindh, where there is a movement to reclaim water rights on the Indus River. Since Pakistan's creation, numerous water projects have been developed on the river Indus, mainly benefiting the upper riparian Punjab. This paper aimed to describe the history of the environmental justice movement, the history of Sindh-Punjab water dispute which indicates environmental injustice on people of Sindh and anti-dam movement in Sindh.

Keywords: Environmental justice, history of environmental justice movement, environmental racism

INTRODUCTION

Environmental concerns and conflicts have surfaced throughout human history, stretching from ancient civilizations to the contemporary world. These concerns have been addressed through various frameworks such as conservation, public health, nature preservation, pollution control, municipal hygiene, occupational safety, and more. The roots of the environmental movement in the United States can be linked to the late 19th century, marking a

[1] This article is derived from the part of the Ph.D. dissertation of the author.

significant shift as environmental awareness was largely absent in the country before that time. The movement began with objectives that centered on preserving wilderness and wildlife, conserving resources, minimizing pollution, and managing growth of population.

It primarily garnered support from middle and upper-middle-class whites (Bullard, 2000:1). Two major waves of environmentalism-traditional environmentalism and modern environmentalism- have swept the United States. The first wave, known as Traditional environmentalism, encompassed two distinct perspectives—conservation and preservation. Conservation involved the controlled harvesting of natural resources to ensure their availability for future generations. Conservationists argued that nature was not inherently sacred but provided valuable resources that needed to be used wisely. In contrast, Preservationists believed in the intrinsic beauty and worth of nature, separate from its commercial value. They emphasized the duty to protect large parts of the natural world for its inherent value alone. The second wave, Modern environmentalism, emerged after World War II, coinciding with the widespread adoption of petrochemical products. This period of activism was fueled by sharp criticisms of industrial practices, particularly due to Rachel Carson's influential book, "Silent Spring", published in 1962. Carson exposed the harmful effects of indiscriminate pesticide use, which led to the deaths of insects and the birds that relied on them for food. She highlighted how many of the benefits of modern science and technology, which improved human well-being, were simultaneously causing extensive damage to the physical and biological environment. This second wave of the environmental movement was inspired by a growing awareness of the destructive impact of human activities on the natural world.

Mainstream environmentalists have not had much success in attracting the color of people and poor communities because low-income and people of color view that mainstream environmentalists do not have central concerns on the issues related to the everyday survival of color of people and poor communities (Bullard, 2000; Cole & Foster, 2001:16). In this political and cultural context, the environmental justice movement has arisen. Some have labeled this grassroots movement as the third stage of environmental activism, while others perceive it as distinct from and going beyond the

traditional environmental movement. It's often seen as a movement rooted in environmental concerns but firmly situated within the broader historical context of social justice movements (Cole & Foster, 2001:30-31; Martinez-Alier, 2003, Chapter 10:212). The current research paper is an attempt to describe the environmental justice movement and its related terms and history of Sindh-Punjab water dispute. This study focused on peer-reviewed articles, reports, and books published related to the environmental justice movement and Sindh-Punjab water dispute. Electronic databases such as Web of Science, Scopus, and Google Scholar have been systematically searched using keywords such as "environmental justice", "environmental inequality", "environmental racism," and "Sindh-Punjab water dispute". Excluding the introduction and conclusion, this paper is divided into four parts. In the first part, several concepts including environmental racism, environmental injustice, environmental justice have been discussed. The second part focuses on the history of the environmental justice movement. The water dispute between Punjab and Sindh is then discussed in the third part and the last part entails the anti-dam movement in Sindh.

ENVIRONMENTAL JUSTICE MOVEMENT

Various terms including environmental racism, environmental injustice, and environmental justice are often employed interchangeably in discussions surrounding environmental justice issues.

ENVIRONMENTAL RACISM AND ENVIRONMENTAL INJUSTICE

Bullard and Johnson (2000:559) describe environmental racism as any policy, practice, or directive that has differing impacts on individuals, groups, or communities based on race or color, whether intentionally or not. Environmental racism pertains to the institutional rules, regulations, and policies from government or corporate actions that specifically target certain communities for less desirable land uses. This leads to those communities facing a disproportionate level of exposure to toxic and hazardous waste due to their racial or ethnic characteristics. It emphasizes the unequal safeguarding against exposure to harmful substances, alongside the persistent marginalization of people of color in decisions affecting their

communities (Bryant, 1995). Another scholar Benjamin Chavis states that Environmental racism refers to the racial discrimination manifested in environmental policy decisions and the implementation of regulations. It involves the deliberate placement of toxic waste facilities in communities of color, the acceptance of hazardous materials and pollutants in these areas, and the historical exclusion of people of color from leadership positions within the environmental movement (Chavis, 1994:xii). However, the phrase "deliberate targeting" in his definition has sparked a debate. Some argue that it requires evidence of intentional discrimination that imposes environmental burdens on racial minorities. Others believe that the mere presence of poison in minority communities proves serves as evidence of racism and that establishing discriminatory intent should not matter. According to the latter interpretation, any decision-making process or distributive patterns that disproportionately affect people of color provide enough evidence to prove environmental racism.

Environmental injustice occurs when some people or communities bear an unfair burden of environmental hardships, such as living near hazardous waste sites, while simultaneously having unequal access to environmental benefits, like clean air, and limited opportunities to participate in environmental decision-making processes (Shrader-Frechette, 2002). In essence, according to Pellow (2000), environmental injustice is perpetrated when a particular social group, which may not necessarily be defined by race or ethnicity, is subjected to environmental pollution.

ENVIRONMENTAL JUSTICE

Environmental justice, a term first introduced by Dr. Robert Bullard in 1980 (Brinkley & Wagner, 2024), refers to a wide-ranging social movement that initially focused on racial segregation and the placement of environmentally hazardous facilities in low-income communities, particularly among Black, Indigenous, and people of color. According to Cutter (1995:111), this concept signifies equal access to a clean environment and equal protection from potential environmental harm, regardless of race, income, class, or any other distinguishing socioeconomic factors. His definition has broadened to include all individuals—irrespective of their race or ethnicity—who are denied their environmental rights, such as women, children, and

those living in poverty. According to Low and Glesson (1998), environmental justice refers as a fair allocation of both environmental goods and bads, grounded in the principle of environmental needs. A fundamental requirement is access to a safe and healthy environment, which is considered a necessity. However, fulfilling environmental needs goes beyond this, encompassing the availability of high-quality environments, as defined within the specific cultural context, to achieve the highest level of satisfaction.

Bunyan Bryant (2012), a leading scholar and activist affiliated with the University of Michigan, expands the definition of environmental justice to include long-term goals and policies. He asserts that environmental justice encompasses a holistic framework of cultural norms, values, rules, regulations, behaviors, policies, and choices that foster sustainable development. This framework ensures that individuals can engage with confidence in an environment that is safe, supportive, and conducive to productivity. Environmental justice is realized when people have access to well-paying and secure jobs, quality education and recreational opportunities, adequate housing and healthcare, democratic decision-making, personal empowerment, and communities that are free from violence, drugs, and poverty. Environmental justice communities are where both cultural and biological diversity are valued and esteemed, while equitable distribution of resources and opportunities prevails. Bryant (1995:6) contends that environmental racism is concerned with disproportionate effects of environmental bads borne by racial communities, whereas Environmental equity and environmental justice aim either to alleviate potentially hazardous conditions or to enhance the overall quality of life for marginalized individuals or communities of color. Although environmental racism is based upon problem identification, the latter two concepts are based upon problem solving.

Pellow’s (2000:582), comparison between environmental racism and environmental justice makes these terms much easier to comprehend. He argues that environmental racism is one manifestation of environmental injustice. From a social movement perspective, "environmental racism" is the answer when activists are asked what they are fighting AGAINST. When they are asked what they are fighting FOR, however, they will reply that their ultimate goal is "environmental justice".

HISTORY OF ENVIRONMENTAL JUSTICE MOVEMENT

There has been a common belief that pollution affects all segments of society in the same way. Nonetheless, this assumption is facing growing scrutiny due to mounting evidence that individuals from low-income backgrounds and people of color encounter more significant environmental and health hazards within their communities, workplaces, and recreational areas compared to the broader society. Environmental racism was the first term coined to describe this growing resistance which defined minorities as the victims and the only population that was at risk. Due to the negativity of the word and the exclusion of populations, environmental equity was soon adopted to describe the movement more accurately. Environmental equity encompassed those persons who were poor as well as all minorities. Still others thought this term limiting and politically unacceptable and coined the term environmental justice. Environmental justice is now the acceptable term that represents this movement which has also expanded beyond the US to other countries (Resnik, 2024).

The precise origins of the Environmental Justice Movement are unclear, making it difficult to identify a singular pivotal event because the movement is a culmination of numerous, if not hundreds, of smaller actions and initiatives led by social activists (Cole & Foster 2001:19). However, a pivotal moment in the fight against environmental racism took place in 1982, marked by strong protests against the establishment of a landfill for polychlorinated biphenyls (PCBs) in a Black community in Warren County, North Carolina (Cutter, 1995; Low & Gleeson, 1998:108; Mohai & Bryant, 1992). The local communities, concerned about ground water contamination, protested the setting up of a PCB landfill in their area and garnered national attention. The protest at the landfill brought about civil disobedience and numerous arrests were made. Over 500 individuals were arrested, including Congressman Walter E. Fauntroy, who later requested the U.S. General Accounting Office (GAO) to conduct an investigation into the socioeconomic and racial characteristics of the communities located near the four major hazardous waste landfills in the Southern United States (Mohai & Bryant, 1992).

The 1983 General Accounting Office (GAO) study revealed that three out of four major hazardous waste landfills were situated in areas predominantly occupied by Black residents who lived well below the

poverty line. In essence, African American communities in the southern United States were disproportionately hosting a greater number of waste disposal sites. This revelation, along with the protests in Warren County, prompted the United Church of Christ (UCC) Commission for Racial Justice in 1987 to carry out a study analyzing the racial and socioeconomic characteristics of communities near hazardous waste sites across the country. The study determined that, even after considering factors such as average household income, housing values, the amount of hazardous waste generated, and the number of abandoned hazardous waste sites in specific zip codes, race remained the central factor influencing the location of these sites.

In the early 1990s, a multitude of organizations had risen to challenge the unfair allocation of land uses that posed risks to the well-being of local communities (Bullard, 1993). In numerous cases, community initiatives successfully curtailed the establishment of polluting facilities or mitigated their impacts through both voluntary and enforced agreements regarding site conditions (Low & Gleeson, 1998:113).

Environmental justice advocates invested considerable time and energy into thoroughly defining the concepts of environmental injustice and justice in specific socio-economic, racial, cultural, and historically contextual terms. In 1991, the inaugural National Summit for People of Color in Environmental Leadership marked a significant moment as it brought together various groups for the first time, signaling the official emergence of the Environmental Justice movement on both national and international platforms (Bullard, 2005). During this event, the 17 principles of Environmental Justice were introduced. According to Low and Gleeson (1998), these principles have expanded the movement's scope beyond racial concerns to include other issues such as class and the well-being of non-human species. These principles have since become the foundational document for the environmental justice movement that aims to accomplish more than just preventing the placement of waste facilities and undesirable land uses in low-income and minority communities. While battles over waste facility locations are one aspect, the movement also focuses on cleaning up polluted industrial sites, eliminating workplace hazards, addressing lead contamination, enforcing existing environmental regulations, and ensuring fair

representation in environmental decision-making processes. Environmental justice is also concerned with generating clean employment opportunities, fostering a sustainable economy, ensuring safe and affordable housing, and achieving both racial and social justice.

The Environmental Justice (EJ) movement has aimed to redefine environmentalism to be more closely aligned with the social needs of human populations. In contrast to the more environmentally centered environmental movement, the EJ movement has fundamental objectives that include questioning the growth-oriented capitalist economy (Pellow & Brulle, 2005:3). Importantly, this expanded concept of 'environment' does not imply that environmental justice neglects concerns related to endangered species or landscapes. Right from its inception, the environmental justice movement incorporated indigenous viewpoints on the connections between humans, the natural world, and culture. The first principle of it emphasizes the respect for the sacredness of Mother Earth, the interconnectedness of ecosystems, and the mutual reliance of all species (Schlosberg, 2013).

The concept of environmental justice poses a human rights challenge to the prevailing economic development model that prioritizes boundless growth but often results in the impoverishment of millions and jeopardizes the well-being of all living beings and the environment. Environmental justice extends its reach to encompass historical disputes such as those related to sulfur dioxide, the Chipko and Chico Mendes cases, present-day controversies regarding carbon sinks, conflicts involving displaced populations due to dam construction, efforts to safeguard rainforests and mangroves for livelihoods, and numerous other global issues. In the contemporary landscape, the movements for environmental justice and human rights are coming together, creating a formidable global force for social change and democratization. Activists from Europe, the Americas, Africa, and Asia are uniting to confront state authorities and corporate policies that have adverse social and ecological impacts, including those associated with hydroelectric power, incineration, mineral extraction, and other practices. Simultaneously, they are proposing sustainable and socially just alternatives (Mohai et al., 2009).

INTER-STATE WATER DISPUTE: LOWER RIPARIAN (SINDH) vs UPPER RIPARIAN (PUNJAB)

The economy of the present-day Pakistan was once largely based on the river Indus and its five tributaries that supported agriculture. Among these tributaries, three—Ravi, Bias, and Sutlej—flow from India into Pakistan, while the other two—Jhelum and Chenab—connect to the Indus River from the state of Jammu and Kashmir. All five tributaries converge at Panjnad, subsequently irrigating the Sindh province before eventually flowing into the Arabian Sea, predominantly at Keti Bunder in Sindh. For a long time, there have been two primary riparian parties (co-sharers and beneficiaries) that share and benefit from the Indus River system: undivided Punjab and Sindh. Irrigated agriculture has been present in the Indus Basin for over five thousand years, but the water development carried out by the British colonialist in the second half of the 19th century was far more transformative in terms of social and environmental impact. Throughout centuries of intra-national and international litigation, a cardinal principle has developed: the upstream party (referred to as the upper riparian) does not have the right to withdraw or divert water from the shared river if it results in harm to downstream party (referred to as the lower riparian) (Palijo, 2011).

The water dispute between Punjab and Sindh began in 1859 when authorities of the undivided Punjab, the upper riparian, started withdrawing or diverting the waters of the Indus River and its tributaries without the necessary approval from the lower riparian, Sindh. This action violated both international and subcontinental laws regarding river waters. Punjab continued building many canals from the Indus River and its tributaries without the consent of Sindh, who had been sharing the waters of these rivers for ages. In 1945, the first interprovincial water allocation treaty was signed between Sindh and Punjab, designating 75 percent of the waters of the main-stem Indus River to Sindh, while the remaining portion was allocated to Punjab. Additionally, it assigned 94 percent of the water from the five eastern tributaries of the Indus River to Punjab, with the residual water going to Sindh (Michel, 1967; Talpur, 2001). Article 8 of the Agreement stated that Punjab would require the consent of the Sindh government before constructing any dams on the Indus River or its tributaries in the future. The Punjab government confirmed this Agreement. From

the time of its confirmation up until 1970, this Agreement was followed both in letter and in spirit. This is evident from the fact that all supply distributions during this period were made in accordance with this Agreement (Palijo, 2011). In 1947, during the partition between India and Pakistan, the Indian government established a committee called Committee B. Its purpose was to organize the distribution of the waters of the Indus Basin Rivers between India and Pakistan. If either party was dissatisfied with the committee's decision, they could make appeal to the Arbitral Tribunal, headed by the Chief Justice of India, was in operation until March 31, 1948.

Prior to the partition of India, Punjab and Sindh shared and benefited from the river waters. However, following the partition, the previously unified province of Punjab was divided into two distinct provinces: West Punjab and East Punjab. Consequently, East Punjab in India became the first and upper-most co-sharer (riparian) of the tributaries of the Indus River. Meanwhile, the Pakistani provinces of Punjab and Sindh became the second and third co-sharers, respectively. As a result, both Pakistani Punjab and Sindh have equal interests in, and are significantly impacted by, all matters, issues, and disputes—whether internal or external—concerning the waters of the Indus River system between these provinces

After the partition of the Indian sub-continent between India and Pakistan, the issue of dividing the water assets of undivided India in a fair and equitable manner arose. To negotiate a settlement, each country appointed a team of representatives. Pakistan was required to appoint a team of negotiators from Pakistani riparian’s and co-sharers of these waters, particularly from the provinces of West Punjab and Sindh. However, the federal government chose a team of negotiators solely from West Punjab, the second riparian, as Pakistan's exclusive representatives for negotiations with India, the first riparian.

The representatives reached a “standstill agreement”, which ensured that existing water flows would be maintained until March 31, 1948, providing time to achieve a long-term resolution. However, either intentionally or due to circumstances, West Punjab (Pakistani Punjab) did not take any action until the agreement expired on March 31, 1948 (Biswas, 1992). The very next day, the provincial government of Indian Punjab halted water supplies to Pakistan. Pakistani Punjab expressed its profound discontent and promptly

travelled to Delhi and made the Inter-Dominion Accord on May 4, 1948. This agreement mandated that India release an adequate amount of water to the Pakistani areas of the basin in exchange for annual payments from the Pakistani government, thereby officially acknowledging India as the legal owner of the rivers.

Sardar Shaukat Hayat Khan, who was part of the Pakistani team involved in discussions with Indian authorities in West Punjab regarding the division of shared water resources, admitted that the Pakistani authorities in West Punjab deliberately bypassed/ circumvented the Arbitral Tribunal. Instead, they opted for direct negotiations and reached a secret agreement with the authorities of East Punjab (India), the details of which he declined to disclose.

The covert agreement between East and West Punjab is evident in the response from the Pakistani side. Authorities in West Punjab not only failed to pursue legal channels through the Arbitral Tribunal to challenge India's halt of water, but also did not seek recourse through the international legal forum the global legal forum of the World Court in The Hague following the cessation of water supply. According to Palijo (2011), it was a nefarious intra-Punjab conspiracy aimed at denying the province of Sindh, the traditional lower riparian of the Indus rivers, its remaining share of water from the Indus system. The plan involved dividing and looting the resources between the two Punjab provinces, West Punjab and East Punjab.

At last, The Indus Water Treaty, which was brokered by the World Bank, was signed in Karachi on September 19, 1960, between India and Pakistan. This treaty allocated the majority of Punjab's share of the Indus Basin waters, as determined by the 1945 Sindh-Punjab Agreement, to India. On the pretext that it had been unjustly deprived of three of its rivers and facing a pressing need for alternative water supplies, Pakistani Punjab sought to gradually assert control over the mighty Indus River. This pursuit aimed to steal and plunder every last drop of its water, even if it resulted in turning the already vulnerable Sindh, lower riparian area, into a near-desert.

Since the creation of Pakistan, 19 barrages, 43 canal systems, and 38 take-offs have been constructed on the River Indus. Additionally, three major storage dams and 12 link canals have been built. Most of these water infrastructure projects have been constructed in Punjab, upper riparian, or designed to benefit its agriculture. As a result, these

water infrastructure projects have extremely diminished the flow of freshwater reaching Sindh, the lower riparian, home to the Indus Delta. Prior to the formation of Pakistan, the Indus Delta received 94 million acre-feet of water. However, the circumstances have deteriorated significantly, as the Indus River now often runs dry hundreds of miles upstream from the delta, resulting in catastrophic effects for Sindh, especially for deltaic communities.

Anti-dam Movement or Environmental Justice Movement in Sindh

The environmental justice movement in Sindh opposes the building of dams and barrages on the Indus River and advocates for the dismantling of existing dams and barrages that primarily benefit Punjab, leaving Sindh deprived of its rightful share of water (Hadi, 2015; 2019). This movement is rooted in an anti-dam initiative and is intertwined with broader socio-political and environmental issues in Sindh. For Sindhi rights activists, the Indus River represents more than just a water source; it is a significant symbol of Sindhi heritage and identity. They view their resistance to dam projects as a defense of their culture and history, which they believe are under threat from the policies of the central government.

Various political parties, civil society organizations, and local communities have been actively involved in protesting against dam projects. They have organized and participated in numerous demonstrations, rallies, and protests to rally public opinion against the construction of barrages and dams. These protests frequently emphasize the necessity for fair water distribution and the pursuit of environmental justice. Such events typically attract large crowds, aiming to exert pressure on the government to rethink its policies. Activists involved in the anti-dam or environmental justice movement contend that the development of dams and barrages on the Indus River primarily advantages Punjab, while negatively impacting Sindh. Prior to the establishment of Pakistan, there was only one barrage constructed on the Indus River. However, since the creation of Pakistan, 19 barrages, 43 canal systems, and 38 take-offs have been constructed on the River Indus. Additionally, three major storage dams and 12 link canals have been built. Most of these water infrastructure projects have been constructed in Punjab, upper riparian, or designed

to benefit its agriculture. Anti-dam activists argue that the building of dams and barrages has resulted in significant social and environmental repercussions for Sindh. They emphasize the serious environmental effects of dam construction, particularly the decreased water flow to the Indus Delta. This reduction has adversely affected agriculture, which is essential to the province's economy. The diminished water supply has led to increased salinity, loss of fertile land, destruction of mangrove forests, reduction in biodiversity, and harmful impacts on local fisheries that are crucial for the livelihoods of deltaic communities. Additionally, dam projects have caused the displacement of local populations and a loss of agricultural and fishing-related livelihoods (Hadi, 2015; 2017). Additionally, there has been considerable opposition in Sindh against the proposed construction of dams on the Indus River. The Kalabagh Dam proposal has been a significant source of controversy since the 1980s. Sindh, along with Khyber Pakhtunkhwa, has consistently resisted the project due to concerns that it would mainly benefit Punjab and worsen water scarcity in downstream areas. Sindh is already grappling with water scarcity issues, and the construction of more dams upstream is viewed as a threat to the province's already limited water resources. The movement has effectively leveraged media platforms to raise awareness about the harmful consequences of dams. Through documentaries, news articles, books, and social media campaigns, they have significantly contributed to informing the public and generating support for addressing the negative impacts of dams on Sindh.

CONCLUSION

Over the past few decades, the Environmental Justice movement has evolved, expanded, and emerged as a formidable influence. Although many of their efforts may not have led to the closure of industrial sites or the prevention of new ones, their success lies in raising awareness about their causes and successfully introducing these discussions into mainstream discourse. The EJ movement has transcended national borders and has evolved into a genuinely global movement, a crucial development in an era marked by globalization. In recent months, EJ struggles in Asia, Africa, and Latin America have gained media attention and become more deeply ingrained in public awareness. The anti-dam movement in Sindh, a form of environmental

justice movement, opposes the building of dams and barrages on the Indus River and advocates for the dismantling of existing dams and barrages to reclaim water rights on the Indus River.

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