

Born of a Natural Disaster, 50 Years Later Bangladesh Faces More Environmental Challenges

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Abstract: Rural-to-urban migration and globalized trade are swelling cities worldwide, but these forces are perhaps more powerfully concentrated in Dhaka, Bangladesh, than anywhere on earth. Born of a natural disaster 50 years ago, the world's most densely-populated country faces multiple environmental challenges. Water, with seasonal monsoons, is both a blessing and a curse. A one meter rise in sea level, for example, would displace as many as 25 million Bangladeshis, and cause the largest mass migration in history. Each drought, flood, or cyclone drives scores of environmental refugees from rural areas to the capital city of Dhaka, where air and water pollution run rampant. Recent rapprochement with India over decades-long boundary disputes offers hope that environmental cooperation in the vulnerable Bay of Bengal can follow.

Key words: Bangladesh, environment, refugees, water, contamination, floods, megacity, land boundary agreement.

1. Introduction

Bangladesh (formerly East Pakistan) is the only country in the world that traces its political formation to an environmental disaster. The resulting 1971 War of Liberation ended centuries of successive foreign rule by Mughals, Great Britain, and Urdu-speaking Pakistanis, and the country of Bangladesh was born. While external geopolitical forces have shaped Bangladesh's history, decades of internal environmental neglect since independence have dealt blows to an impoverished population.

2. Recent History

A severe famine in the midst of the Second World War saw 3.5 million Bengalis starve to death due to inflationary price hikes and other wartime priorities for food shipments. Postwar decolonization created seething problems. The 1947 partition of British India into Hindu and Muslim zones permanently severed rail and road transportation links to cities and markets and left many families bereft of public services. With only the Islamic faith in common, the cultural links

between East and West Pakistan were tenuous. The Language Movement in the more populous eastern wing foreshadowed future conflict. The 1952 protests against a decree from Islamabad that Urdu become the national language saw several University of Dhaka students die in order to preserve the Bengali tongue and script for future generations [1].

In November 1970, Cyclone Bhola hit East Pakistan and killed nearly 500,000 people, twice the death toll from the 2004 Asian tsunami. Lagging far behind the western wing of Pakistan in its political and economic development, inadequate aid from the central government in Islamabad for the devastated eastern wing fueled riots and calls for secession [2].

Fifty years ago, in March 1971, the (West) Pakistani Army attempted to halt East Pakistan's secession by targeting those it deemed to be responsible for the insurrection, namely, intellectuals and minority Hindus. Military attacks on civilians at the University of Dhaka and Hindu neighborhoods inaugurated a nine-month reign of terror. Bangladeshi freedom fighters, fortified by Bengali mutineers from the Pakistani military, continued the struggle in the countryside. After eight to 10 million Bangladeshis had fled the warzones to India, Indian armed forces

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intervened in the conflict and compelled Pakistan to surrender its 90,000 soldiers in 12 days; the largest surrender of troops since the Second World War. Bangladesh claims that up to three million people perished in its War of Liberation [3].

3. Geography

In an area just slightly larger than the U.S. State of Iowa (with a population 3.2 million), half of Bangladesh's 165 million citizens live less than five meters above sea level. Rice cultivation thrives in the fertile, deltaic plains. With up to three crops a year, rice is indispensable for subsistence. However, each drought, flood, or cyclone drives scores of environmental refugees from rural areas to the capital city of Dhaka, chiefly because they have nowhere else to go. In an effort to reduce siltation and salinization in the Indian port city of Calcutta, the completion in 1975 of the Farrakka Dam just 11 miles upstream of the India-Bangladesh border channeled the flow of fresh water from the Ganges, via a feeder canal, to Calcutta. With less water and equally valuable silt flowing downstream into Bangladesh, the deltaic lands began to sink into the sea. Crop yields and arable lands suffered from salinization and erosion, which prompted the first wave of Bangladeshi environmental refugees to leave. These Muslim migrants settled not in West Bengal, but in the northeast Indian state of Assam, where they clashed with indigenous Hindus. Relations between the two states have been strained since the late 1970s. India recently completed a 4,000-kilometer long, razor wire fence, costing one billion USD, which extends nearly the entire length of its shared land border with Bangladesh.

4. Water

The world's most densely-populated country faces several imminent environmental challenges. A one meter rise in sea level, for example, would displace as many as 25 million Bangladeshis, and cause the

largest mass migration in history. In the riverine country, water is both a blessing and a curse. Chances are that "Made in Bangladesh" clothing is worn by students in every U.S. classroom. The Dhaka garment factories that mass produce inexpensive clothing may consume as much groundwater as do the megacity's 15 million residents. In the dry season, water shortages have prompted mobs to attack the local water agency. Street protests, symbolized by empty water pitchers, have had to be put down by the Bangladeshi army. "These factories, known as wet processors, consume as much as 300 liters of water to produce one kilogram of fabric" [4]. Because textile mills extract so much groundwater, often without municipal oversight, water tables in Dhaka are dropping at a distressing two to three meters per year. That not only heralds future water shortages but also increases the risk of landslides in one of the most densely-populated cities in the world.

River pollution limits Dhaka's options for finding new freshwater sources. Each of the four major rivers...is tainted by untreated industrial discharges. Here, too, the wet processors are one of the biggest culprits, dumping used dyes and chemicals directly into the surface waters [5].

The 2013 Rana Plaza garment factory collapse that claimed more than 1,100 lives brought much-needed attention to worker safety, but not to environmental protection. Perhaps that would change if Western consumers demanded more than low price clothing and insist that these items be produced with environmental sustainability in mind.

To provide potable water safer than the surface water that had annually killed 250,000 children from diarrhea in the 1970s, millions of tube wells sunk deep into the ground now may be causing "the largest mass poisoning of a population in history." [6]. Arsenic is a tasteless, odorless, colorless chemical, which occurs naturally in ground water. In small doses it is harmless. The high inorganic arsenic concentrations in Bengali aquifers were unknown at

the time since no testing was done. Years later, thousands of peoples' unmistakable skin lesions indicated arsenic poisoning from ingesting contaminated water for as many as 20 years with no ill effects. While skin lesions and skin cancers are treatable, the large number of resulting lung and bladder cancer cases will prove fatal for many of the millions of Bangladeshis at risk because they have no other source of water.

If too little potable water is a problem in parts of Bangladesh, then too much water is an annual dilemma for the entire nation. Because some of the world's largest river systems empty into the world's largest delta, Bangladesh is naturally vulnerable to flooding. Monsoon rains coincide with the rising of the rivers and their tributaries that reach their peak volume from Himalayan snow melt. Every year sees 20% of the country inundated by seasonal floods that fertilize the land, but increasingly catastrophic floods cause great damage to the economy, crops, and infrastructure. The 2004 floods, for example, covered half the country; Dhaka was 40% under water, and 30 million people were made homeless. The flooded airport and major roads hampered relief efforts, and the rice, jute, and sugarcane crops were devastated [7].

5. Dhaka: Megacity of the Poor

Rural-to-urban migration and globalized trade are swelling cities worldwide, but these forces are perhaps more powerfully concentrated in Dhaka than anywhere on earth. The Bangladeshi capital has witnessed a ten-fold population increase in the half century since independence, and another 10 million are expected by 2030. Because Dhaka is the fastest-growing megacity in the world, millions of people live in squalid informal settlements or slums. The pull factor of city factory jobs combines with the push factor of a degraded agricultural environment, plagued by flood erosion and soil salinization, to make Dhaka the megacity of the poor [8].

The annual influx of environmental refugees adds 300,000 people to Dhaka's already dense urban landscape. Constructing homes for so many people necessitates the firing of two billion bricks a year in ovens called kilns. Thousands of inefficient, coal-burning, fixed-chimney kilns emit pollutants into the air that kill an estimated 750 people each year from cardiopulmonary diseases. "The human toll is on a scale with the 2013 textile mill collapse outside of Dhaka that killed 1,129 [people] and horrified the world. But the kiln problem attracts little international attention and continues unabated" [9].

Citing the high costs of reducing toxic emissions, brick makers insist that an ancient industry cannot be modernized overnight. Regulation of the dirty-burning fixed-chimney kilns remains lax. Soot from brick kilns and smoke from shantytown cooking fires, often fueled by burning scrap wood and plastic, are the cause of widespread respiratory illnesses in Dhaka.

6. Discussion

During the Cold War, the Iron Curtain was erected by communist regimes to keep out competing political ideas. Modern India, which has not fenced its borders with its other neighbors, has finished the 4,000-kilometer long fence to halt illegal immigration from Bangladesh. The razor wire fence is enhanced by flood lights, riverine patrols, lasers and smart sensors; the Indian Border Security Force is said to have shot 200 people annually. The Indian government states that it is difficult enough to provide services for its one billion citizens; it does not want to be the destination for millions of Bangladeshis fleeing a ravaged environment. Many Bangladeshis blame Western tastes and economic policies for its ecological predicaments and insist that they have a right to immigrate to those same Western countries before it is too late.

7. Conclusion

Whereas 20th century political ideology fears

created a bi-polar world characterized by the Berlin Wall, the 21st century Indo-Bangladeshi border is a physical manifestation of feared environmental consequences that could spark interstate conflict. Bangladesh's environmental problems offer a preview of what may occur this century in other densely-populated regions of an increasingly fragile planet. But new political will has made some headway to ease tensions and improve livelihoods. In 2011, a Land Boundary Agreement (LBA) protocol was agreed upon by both India and Bangladesh. With ratification by India's parliament in 2015, the LBA could finally be implemented [10].

Via the LBA, India and Bangladesh agreed to exchange 160 tiny enclaves, wherein 50,000 stateless people had been trapped for decades in miserable living conditions inside the other countries' borders. The current leaders of both nations are now in serious dialogue to improve visa issuance, establish markets in the border areas, and expand transportation and business networks to form an eastern economic corridor to Southeast Asia. In order to safeguard shared commercial interests, their cooperation must

expand from political to environmental matters.

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