



# Beyond the water-land binary in geography: Water/lands of Bengal re-visioning hybridity

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## Abstract

This paper proposes a theoretical approach to hybridity, a flexible or “wet” theory that does not pretend to be universal, that can accommodate flux, and that is contextualised in locational terms and comfortable with empirical facts. More specifically, it argues for reconsideration of one of the foundational binaries, that of land and water, within the rubric of hybrid environments. The paper suggests that it is possible, thinking through the historical production of water/lands, for geographers to move beyond what has become an indissoluble dichotomy. To make these points, it takes readers to the floodplains of Bengal, which have conventionally been seen as products of fluvial action, and shows the critical roles played by colonial (and postcolonial) interventions – including changes in land tenure and revenue collection – to have produced hybrid environments that can potentially destabilize the conventional water-land binary characterised by their uncertain existence, their indeterminacy, and their fluid liminal presence as ambiguous temporal, cultural, and political geographies.



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<sup>2</sup> This paper aims to extend the theoretical possibilities of my 2013 book, written jointly with Gopa Samanta and titled *Dancing with the River: People and Lives on Chars in South Asia*, New Haven, Yale University Press. Some sections quote significantly from that book, particularly the discussion on hybridity theory in Geography and the colonial history of land and water management in South Asia.

*... apparent hard edges are the historical product of a determined effort to imagine lines where none exist and then to make them survive in the face of an aqueous terrain which constantly defeats their materiality.*

Appadurai and Breckenridge (2009, 1)

### **Introducing wet theory**

In this paper, I argue that we geographers should move away from the idea of dry land, AKA terra firma or solid ground, to allow more fluidity in speaking of hybrid environments. Historically, esteemed geography scholars have understood and explained land by excluding water; the common idea of land is best expressed in the Oxford Dictionary's definition: "land" is something that exists in opposition to water; that is, "the part of the earth's surface that is not covered by water"<sup>3</sup>, meaning that land excludes swamps, estuaries, tidal areas, lakes, ponds, and streams. Sauer in 1925 described land as "a unit of geography" (Sauer, 1925, in Leighly, 1963, 321). Equivalent terms, "area" and "region", gave rise to the *place facts of geography*; thus, landscape became a recognizable entity with definite limits leaving the waters beyond them. The legacy of valorizing land in geographical studies as an area of ground, the basis for all human activities, might have begun earlier than Sauer; the instructions of classical geomorphologists such as W. M. Davis (1900) on the "content" of geography underlined the complete separation of the lands from waters. Even Hartshorne's (1939, 150) ideas of landscape (as the "appearance of a land as we perceive it") privileged land.<sup>4</sup> Geographical metaphors are generally associated with land: territory, field, place, horizon, soil. Like the traditional categories offered by political geographers – frontiers, boundaries and borders, rim lands, and peripheries – land and water have definitely and absolutely been established as two completely separate entities. This led to what Leopold and Schwartz (1989) describe as the "Abrahamic conception of land" that lays before humans a vast expanse of nature to exploit for their sustenance. The post-enlightenment rational need for removing ambiguities sealed the dichotomy but also associated the categories with usefulness or the lack of it; Domonoske (2012, 4) considers this "Water-Land associated with Nothing-Something" as expressing a division between enchanted pre-modernity and the disenchanting Enlightenment, putting land, man, and rationality against water and its peoples. The very process of "reclamation" of land became one where human beings converted the useless watery land into solid ground. The implied dichotomy or a blurred partition also disguised a conflict between water and land – in

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<sup>3</sup> See <http://www.oxforddictionaries.com/definition/english/land> (viewed on 11 August, 2014).

<sup>4</sup> Hartshorne (1939, 152) further pointed out that the appropriate meaning of the term would be "the section of the earth surface and sky that lies in our field of vision as seen in perspective from a particular point". However, he insisted that the term "landscape" could not be given a clearly fixed and defined meaning (Olwig, 2003, 875).

particular, the struggle between silt, or fine soil, and water because silt is perceived to pollute the clear and clean water, and impede the flow of rivers.<sup>5</sup>

This paper challenges this separation by extending the idea of hybrid environments beyond not just the nature-culture binary but beyond the deeply entrenched water-land dichotomy, thereby reconceiving both as environments that have the potential to critique standard cultural dichotomies. It engages with a kind of hybrid environment not fully dealt with yet by geographers: where not only the binary division of nature and culture breaks down, but where land and water are also inseparable, giving rise to a nebulous and fluid environment. Thinking of hybridity in this manner turns it more fully into what Appadurai and Breckenridge (2009) outline as “wet theory”; that is, a flexible theory that is able to accommodate messiness and contextual variations. For geographers, thinking of hybridity as fluid and transient can help to relinquish the notion of permanence in land (and landscapes) and bring to the fore the constant negotiations between the land and waters – the seas, rivers, and lakes that geographers have long constituted as *lying outside the terra firma*. Wet theory does not need to rely on a “hard edge” – that is, the clean division in the sciences between land and water created in order for accurate measurement, planning and control – and can allow us to rethink lands as spongy and aqueous, and as uncertain and fluid. The examples I provide demonstrate that hybrid water/lands are not only coproduced by nature and culture, but constitute a blend of water and land where the two are merged with each other imperceptibly and changeably.

To justify my case, I take readers to the Bengal floodplains. If one flew over Bengal during the monsoon months, the entire terrain would appear as covered in a thin film of water. Conventional geographical wisdom would suggest that this is what floodplains look like, but does not explain why in Bengal<sup>6</sup>, still described in most geographical books as *a riverine land*, rivers and their floods came to be constructed as an enemy. The sight of a land soaked in water would be a starting point in questioning the boundaries between land and waters that conventional geographical training might have created. Hybridity in this paper constitutes an attempt to elucidate the environment in the lower Gangetic delta, a densely peopled riverine plain that is part land, part water, but is neither in its entirety. In thinking about such environments, the theoretical lens of hybridity is useful in that it allows one to question the water-land binary in geographical studies. Scale is significant, and I illustrate Bengal as a whole as one big aqueous and shifting terrain and rivers, with more contextual reference to the Sundarbans (the mangrove delta), the

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<sup>5</sup> Reynard (2013, 41) thinks that environmental historians, on the contrary, have put water at the centre of their debates: “Environmental historians interested in the impact of natural forces, be they, to human eyes, catastrophic or simply erratic, have often turned to contexts where water is at work.”

<sup>6</sup> A point of note is my treatment of Bengal as one geographical unit regardless of its political boundaries. Bengal was partitioned in 1947 to comprise two countries, India and East Pakistan (later Bangladesh). Despite this division, Bengal remains physically and culturally one entity, and I refer to this entity unless specifically mentioned otherwise.

*haors* and the *chars*. By alternating between different geographical scales – from the breadth of the delta mouth to the microcosmic worlds of silt islands or chars that lie within the riverbeds – the concept of hybridity is able to emphasize that besides natural ecological processes, humans have historically played a critical role in the construction of these environments. At the macro scale, I focus on the Bengal delta as a whole, then zoom in on the Sundarbans – the mangrove delta; the haors<sup>7</sup> – the vast bowl-like depressions in eastern Bangladesh; and the chars – river islands, which are also called “*charbhumi*” or *char-bada jami* (*bhumi* and *jami* are both “land” in Bangla).

I show how this aqueous land is more than a product of fluvial action, and how colonial interventions – including changes in land tenure and revenue collection – and postcolonial dam-building coproduced this hybrid environment. To move beyond the foundational geographical binary of land and water, I consider the ways in which history shaped and intertwined human lives, lands, and waters at different geographical scales. Bengal is where the demarcation between land and water is neither well-defined nor permanent. The Sundarbans, the haors and the chars, are neither fully land, nor entirely water, and certainly not a specific combination of the two; they open the space for thinking about hybridity in a new way that is robust enough to take us beyond thinking of land and water as two rigid and indissoluble categories. Together, these malleable environments that combine and confuse water with land present empirical examples of new metaphorical terrains that offer spaces in which environmental historians and cultural geographers might make more sense to one another, and “make it possible to imagine nature as both a real actor *and* a socially constructed object without reducing it to a single pole of nature-culture dualism” (Demeritt, 1994, 163). These environments are also integral parts of the “vague, diffuse or unspecific, slippery, ephemeral, elusive or indistinct” world, a world that “changes like a kaleidoscope, or doesn’t really have much of a pattern at all” (Law, 2004, 2) and is impossible to be “distorted into clarity” (Law, 2004, 2). To explain the messy world of these environments, one must avoid the “methodological moralizing” of individual disciplines and categorising (Law, 2007, 599), and instead of a monolithic interpretation invoke a transdisciplinary. This is where ideas of hybridity can open up the possibilities of wet theory, a new methodology, to explain lands that are soaked in water.

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<sup>7</sup> The term “haor” is a local Sylheti dialect of the Bengali word “sagor” (literally, “the sea”). Besides haors, similar waterscapes of Bengal include beels and baors. A beel is usually a depression produced by erosion, is generally smaller, and is less localised than haors but has different regional names. A beel can be the remains of a river channel that has changed its course. A baor is an ox-bow lake and is found in the moribund parts of the Bengal delta. Many of these waterscapes are dry during the summer but expand into broad and shallow sheets of water during the monsoon months.

## Hybrid environments so far: Wading towards a wet theory of socio-natures

In recent years a number of scholars have highlighted that nature and society are coupled together, offering an understanding of environments as historically shaped, and culturally constituted. Consequently, one can trace the sources of the critique of positivist binary division between nature and culture, in the bodies of work by environmental historians, geographers, and anthropologists. Two factors – a cultural turn within geography and a spatial turn in other social sciences such as anthropology and history – have enabled a wider and more continuous conversation across a number of disciplinary borders. A remarkable boundary-crossing, unprecedented in the history of social sciences, reflects, as Inglis and Bone (2006) suggest, an increasing interest by all social scientists in issues relating to the human manipulation of both biological life and so-called “natural” environmental forces and phenomena.

Arguably, the greatest contributions have been made by environmental historians who have illuminated the changing relationship between humanity and nature (see Radkau, 2008, for a comprehensive overview). Their early work attempted to emphasise the “social construction” of nature, such as forests (see Jeffrey, 1998). From this, studies moved on to what Agrawal and Sivaramakrishnan (2001) describe as “social nature”, where the artificiality of boundaries between arable lands, forests, and pastures are demolished, problematizing the ways in which certain modes of livelihoods are commonly associated with each of these categories. Environmental historians have reminded us that these are primarily applied administrative categories (Whitehead, 2010) marked by significant movements within and between them. They have recognized the unclassifiable mixed cases and the strong interdependence between various modes of livelihood, the radical changes in landscapes over time, and human strategies of land use that defy the simple distinctions (Scott, 2001, vii). Another thread in their work has been intensive questioning of what comprises environmental knowledge, not only critiquing the subjective position of knowledge producers, but also investigating how knowledge is produced, contested, legitimated, and hybridized (Skaria, 1999). In South Asia, environmental scholars have emphasized the interdependence of biophysical and socio-cultural domains, and highlighted the importance of considering poor people’s livelihoods as entrenched in local ecology (Gadgil and Guha, 1992; Guha, 1994). Environmental historians of India (Agrawal, 1995; Agrawal and Sivaramakrishnan, 2001) have pointed out that all forms of knowledge are embedded within specific social contexts that influence the process by which information is generated, processed, and disseminated. Attention to such contexts, Saberwal and Rangarajan (2003) believe, ensures that we avoid rhetorical stances on the value of scientific knowledge versus indigenous knowledge.

The discipline of geography and related fields claim a territorial right over the complex domain of nature, society, territory, and scale. Geographers, primarily Anglo-American, have also contributed to the ongoing debate of what is commonly

described as “socio-nature”. For them, the concept of hybridity has been crucial to break down the schizophrenic division between nature and culture that has ailed geography almost since the inception of the discipline. Drawing together notions of relational dialectics and hybridity, they have offered a rethinking of the nature-culture divide. Two major arguments are relevant for us. First is that the nature-culture divide is neither static nor diametrically correlated, but is constituted by traits in both categories that are indistinguishable from one another (Hinchcliffe, 2007; Head and Muir, 2007; Barnes, 2008).<sup>8</sup> Secondly, those following this paradigm shift have also challenged, and in some cases rejected, the once common belief in the equilibrium idea in nature, a condition of constant balance, by showing that the idea of equilibrium is a myth that geographers have long perpetuated (Bracken and Wainwright, 2006, 167). Instead, a large number of cornerstone ecological processes are now being described as non-equilibrium dynamics, long-term shifts, and historical conditionalities such as path dependencies and trajectories (Zimmerer, 2000, 2007). These shifts from a normative model of “nature in equilibrium” have great relevance in rethinking floodplains and the functions of rivers (Lahiri-Dutt, forthcoming). The renewed emphasis on flux represents nature/society hybrids, is in stark contrast to environmental principles rooted in the belief of nature as tending towards equilibrium, and has great significance for environment management practices (Eden and Bear, 2011, 394).

Within this overall rethinking, geographical studies have built close links with environmental history; for example, in studying the essential relations between water and society, analyses of both the history of water and how the idea of water articulates with its material and representative forms to produce this history have been presented by Linton (2010, 41). A crucial common ground between environmental historians and geographers has been in thinking about “the production of nature”. A purely physical environment, unaffected by human enterprise, hardly exists today; what is seen as *the environment* is a product of human interaction and modification over years.

Environmental historians Grove and Damodaran (2006), however, refer to early geographical contributions such as those from Gordon East to show how contemporary colonial anxieties were expressed in the work of academic geographers who had begun to understand the extent and consequences of human interventions in nature, that is, on “man’s role in changing the face of the Earth”. Problematically, East was noted for his environmental determinism: “If only by its more dramatic interventions, a relentless nature makes us painfully aware of the uneasy terms on which human groups occupy and utilise the earth” (1938, 11). One can say that the anxiety of environmental historians is rooted in the unpredictable and recurrent nature of dramatic and disastrous natural events in the contemporary

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<sup>8</sup> Some even suggest that we are living in a post-natural condition in which human-fabricated phenomena pervade all parts of the biosphere and where environmental threats are invariably human-induced.

world. The difficulty is that such views may lead to what is known in geography as neodeterminism, fully represented in the Russian geographer V.A. Anuchin's (1957, 52) conceptualization of nature as flexible but still an "advisor" to humans, and his view that determinism is "one of the most indispensable facets of dialectical thought".

Today, as critical geographers how do we want to see the role of time? Do we see nature as a historical actor "exist[ing] apart from our understanding of it" (Cronon, 1992, 40)? Traditionally, environmental historians (like Cronon) distinguished themselves from other historians by treating nature as the key actor in causing change in human society, whereas other historians typically considered nature as an object of human contemplation and controversy or as the physical arena for what are essentially human social, political, or situational developments. This traditional conceptualization of nature by environmental historians may force geographers to return to the dualism that has deleteriously affected the academic integrity of geography as a discipline (and that has been questioned recently). If one accepts environmental historian Worster's (1990, 1144) observation that "no landscape is completely cultural [and that] all landscapes are the result of interactions between nature and culture", geographers have to take the dualism of physical-human and nature-culture for granted, and return to the idea of *human impacts* on the natural landscape as a product of cultural preferences and potentials.

These ideas accept the dichotomies as *fait accompli*; nature is understood as an "immaculate linguistic conception" (i.e., a mental or social construction), or an object knowable through absolutist knowledge of real world entities and processes that are separate from human intervention (i.e., unadulterated physical geography) (Whatmore, 2002, 2). Recent contributions by geographers, therefore, highlight the complex relationships and hybrid nature of landscapes and are not always in full agreement with the perspectives of environmental historians.

The critique of the dangers posed by neo-environmental determinism has two major strands. One emerges from postmodernists, who equate nature with a text whose meaning depends on the reading of it, thus denying its material basis. Although this perspective has been valuable in denaturalizing hegemonic ways of perceiving the environment, Demeritt (1994, 164) explains that the world cannot be "denatured", and that too sharp a focus on human ways of seeing renders nature illusory. The other strand of critique derives from cultural ecologists, who have contested the nature-culture binary and highlighted the correlations between nature and society (Inglis and Bone, 2006).

Notably, much of this research has been essentially on *terra firma*: the obsession with permanence and stable land remains unquestioned in thinking about hybridity. To put it simply, just as the idea of 'nature', the idea of unmoving land has turned into *the* basic building block of socio-natures. The hegemony of land as the basis of landscapes has also created an unbridgeable chasm – that between water and land – within the discipline. Such an unquestioned acceptance of land-

based physical environment as the essence of landscape assemblages belies the fluidity inherent in the conceptualisation of hybridity. More importantly, it undermines the postcolonial origins of the idea of hybridity (see Bhabha, 1994; Nandy, 1983) and its association with anti-essentialism. In other words, the invocation of socio-natural “assemblages” (Braun, 2006, 645) might risk hybridity being conceptualized in absolute (eventually leading to essentialist) ways, leaning upon a mixing of two or more elements. The term, as Canclini (1995) shows in his study of traditional and modern cultures in Latin America, involves the movement of people in and out of ways of being rather than moving from one to another in a linear fashion. This conceptualisation is closer to Bhabha’s (1990, 211) third space of hybridity, which is not an identity, but rather is an *identification*, a fluid and uncertain process of identifying with and through another object.

Thinking through geographical uses of the term demonstrates the extent to which meaning has travelled from the original, complex, intended sense. The challenge that arises is how to close this gap, theoretically and with robust empirical examples of environments that are in motion, unstable, uncertain, and unpredictable – environments that can morph from one into another, and can fuse into each other. If hybridity challenges conventional categories, how could a more foundational dichotomy between water and land be critiqued? This is where Appadurai and Breckenridge’s (2009) provocation to think of aqueous uncertainties through the lens of wet theory may soften the many hard edges and capture the fluidity inherent in the idea of hybridity. Wet theory, they argue, offers an explanation that can accommodate flux, flow, change, and other boundary-blurring phenomena within the core of historical and geographical occurrences, and not regard them as exceptional or outlier. Wet theory is also flexible enough to accommodate and absorb new contextual information without pretending to be universal, or breaking on the weight of its own rigidity. Finally, wet theory does not pretend to be certain, and bows down to the empirical facts of local contexts. Clearly, wet theory has far-reaching significance for critical geography wanting to take the concept of hybridity further to ensure we do not lose sight of complexities, do not renounce uncertainty, and do not give up mud and silt in favour of either land or water.

In the next section, I take the readers to the muddy lands of Bengal and show how the spongy environments of Bengal – environments that combine and confuse water with land, not just comprise a synthesis of culture and nature as lived-in landscapes – have been produced not merely by nature, but also by colonial and postcolonial interventions in river control. Although I am not an historian, an historical perspective is central to this section, but my consideration of the past is neither chronological nor comprehensive. My aim is to show that Bengal’s character as a fluid landscape of shifting river courses, inundated irrigation, and river-based life changed during British colonial rule. Legal and engineering interventions sought to stabilize land and water and create permanent boundaries that privileged land and protected it from inundation by annual floodwater; within

one hundred years from the introduction of three key colonial legal interventions, Bengal had become a land-based peasant milieu. A modernist view of the environment firmly believed in a watertight divide of water and lands, robbing the rivers of their histories and extracting them from their social contexts of human experience.

### **Bengal: The soft edges of a soaked land**

The exact outlines of the two geographical entities, the Bengal basin and the Bengal delta, are difficult to pinpoint. Broadly, one can say that the geomorphic unit of the Bengal delta is part of the geologic unit, the Bengal basin, a bowl-like composite formation created by the stretch and sag of the eastern part of Gondwanaland and described as “a large subsurface sedimentary province filled up by sediments of pre-trappean and post-trappean age”<sup>9</sup> (Dasgupta, 2010, 198). Since Pliocene, the sea has retreated and the delta has prograded further southward. The combined flows of three major river systems, the Ganga, Brahmaputra, and Meghna, bring enormous quantities of silt from the surrounding hills and mountains to make the Bengal delta. Experts are divided with regard to the boundaries of the delta: Bagchi believed that “The region between the Ganges and the Brahmaputra and that between the Brahmaputra and the Meghna ... [has] no doubt been built up by the materials brought down by the rivers” (1944, 8-19). The massive weight of the mud, brought down from the surrounding hills and mountains over millennia, is in places up to five kilometers deep, pushing down the bedrock and creating a near-flat surface.<sup>10</sup> The delta may be flat, but it is a dynamic, constantly changing environment, being actively built even today, particularly in the eastern part as massive quantities of silt are brought through the huge Meghna estuary to be dumped into the Bay of Bengal, where there is a *subaqueous* part of the delta. Even the *subaerial* parts of the delta are low: only about 10-15 meters above sea level in the northern parts, and much lower closer to the sea. The lower part is also subject to tidal flows, which can be from 4.5 to 6 meters high. For most of the year the rivers that funnel into the Bengal delta flow sluggishly over flat plains, only to rise during the monsoons into devastating torrents. They carry enormous amounts of silt. The roaring Ganga-Brahmaputra-Meghna Rivers and their innumerable tributaries descending from the Himalayas during the monsoons almost choke with the enormous body of sand and sediment carried in their waters.

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<sup>9</sup> The Bengal basin occupies an area of about 90,000 square kilometers, extending southwards well into the offshore regions of the Bay of Bengal. Geographically, the basin includes West Bengal and Bangladesh.

<sup>10</sup> The Ganges and the Brahmaputra together carry more sediment than any other river system: double that of the Amazon, four times as much as the Nile. During the monsoons, 13 million tonnes of silt are carried to the delta every day. Most of this continues into the Bay of Bengal, but some gets deposited on the riverbeds along the way (Nicholson, 2007, 122).

It is over this near-flat plain of the delta that innumerable rivers flow, frequently changing their channels as they act not just as conduits of water but also silt and mud. With the fecund rivers' life-giving silt, a tremendous amount of biological life flows along. Together, the rivers carve out new lands and create new horizons for human communities, whose lives and experiences are framed by the rivers that connect places and peoples. The innumerable rivers and water channels intersecting each other create a moist and unstable maze that has nurtured riverine ways of life and culture for hundreds of years.

### *Other waterscapes of Bengal*

The water/lands of Bengal are not only manifested in its shifting rivers. Let me take readers to the watery Sundarbans, literally "the beautiful forests"<sup>11</sup> (from the two Bangla words, *sundar*, meaning beautiful and *ban*, meaning forest), located at the mouth of the Bengal delta, and housing one of the most fascinating mangrove forests. Ghosh's famous novel *Hungry Tide* (2004) is set in this waterscape, as is the recent anthropological text *Forest of Tigers* by Jalais (2010). This is where the innumerable distributaries of silt-laden rivers, originating in the snowy Himalayas and flowing through the Gangetic plains, eventually meet the Bay of Bengal where they dump these sediments to create one of the largest, most ecologically complex and densely inhabited waterscapes in the world. The mangrove forests of the Sundarbans alternate between saline and fresh water, and between littoral and fluvial environments (Richards and Flint, 1990). Land and water are intermingled throughout these mangrove forests as they are in the Bengal basin.<sup>12</sup> Closer to the delta mouth are large chunks of moving silt flowing like sardine bait balls in the oceans, "shoals" within the river channels that are floating, sometimes above the water but often below it. These shoals are formed at the very lowest reaches of the Ganga River, which is known as the Hooghly in the area, by the sediments that the tributaries pour into the river. The Imperial Gazette writer, O'Malley (1914, 6), wrote that as early as in 1694, when European seafaring vessels had started to enter Bengal through these distributaries, the *Royal James and Mary* ship was wrecked on the largest of these shoals, giving it the name 'James and Mary Sands', and since then many other ships have been lost due to the sandy shoals. Although the waterways proved to be a challenge for larger ships, this marshy, muddy area was the gateway to Bengal, arguably the richest province

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<sup>11</sup> There are different interpretations of the name in English; Yule and Burnell (1903) believe the etymology has derived from *sunderbunds*, implying that "ban" is a derivative of the term *bund* or the embankment. Danda (2007, 28) notes that the notion of 'beautiful forest' is most likely a retroformation, representing an ecological romanticism of valuable forests.

<sup>12</sup> W. W. Hunter, a colonial chronicler, notes it as a vast alluvial plain in which the process of land formation was ongoing, describing it as "a sort of drowned land, covered with jungle, smitten by malaria, and infested by wild beasts" (1875, 285-346). He portrays the Sundarbans as an area "intersected by a thousand river channels and maritime backwaters, but gradually dotted, as the traveller recedes from the seaboard, with clearings and patches of rice land".

in South Asia. In his novel, Ghosh (2004, 7) describes it as an “immense archipelago of islands”, where “[t]here are no borders ... to divide fresh water from salt, river from sea. The tides reach as far as three hundred kilometers inland and every day thousands of acres of forest disappear underwater only to reemerge hours later.” The tidal nature of the area means the rivers can carry out the sediments for only about 12 hours a day, and if the storms and tidal surges coincide during the monsoons when the rivers bring down colossal amounts of silty waters, the rivers spill over across the banks. It is due to these tides that the water tastes saline closer to the sea and brackish well inland, and floods, therefore, lead also to increased salinity of the soil. In 1971, the Ramsar Convention included the Sundarbans as a wetland of international importance. The United Nations Environment Programme estimates that 60% of this 10,000 square kilometre biosphere heritage is within the political boundaries of Bangladesh. The land is constantly being altered and reshaped by tidal as well as human action, making the Dampier-Hodges Line<sup>13</sup> – supposed to mark the boundary of the forested part – a mere fiction. People have lived on and used these lands and waters for a very long time, but in recent years the numbers have soared from migration (and also natural growth). Traditional livelihoods have been as *jeles* (fishermen), *chunerys* (snail and oyster collectors), *mawalis* (honey collectors), *bawalis* (wood collectors), and *golpatakar* (gol leaf collectors) (Kabir and Hossain, 2008).

Other waterscapes include the five hundred or so haors located in the northeastern corner of the Bengal basin, in Sylhet, just to the south of the Meghalaya hills of the Eastern Himalayas, which receive on an average over 12,000 millimetres of rainfall annually. The waters drain off onto the plains, and stay there for about six months of the year, reaching depths of up to seven meters (Rashid, 1991). In its entirety, the haors cover about 6000 square kilometers of saucer-shaped, bowl-like land, surrounded by the numerous tributaries of the Surma and the Kushiyara Rivers. Duyne-Barenstein (2008, 352) describes the hydraulic rhythm of life that perfectly dances to the rise and fall of the waters; the area is drained as soon as the water level in the surrounding rivers is lower than the water level inside the haor, yet just about enough to be considered as water is retained in the numerous khals, beels and dobas (shallow natural depressions, ponds) on the surface as the groundwater table is too deep. The local people have adapted to the waterscapes; the rice crops are harvested in May just before the entire area is again flooded. As the farmers recede, the fishermen move in to use the waters for a livelihood.

Unlike the haors and the Sundarbans, chars are sandy, silty pieces of land that rise from the shallow riverbeds in the lower Gangetic plains of deltaic Bengal. The coarse sands have created uncultivable islands, called *diaras* locally, in North Bihar and Eastern Uttar Pradesh flats, while the finer alluvium has built more

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<sup>13</sup> Between 1829 and 1830, the forested littoral was surveyed by Commissioner Dampier and Lieutenant Hodges. The line identified by them today is roughly the border of South 24 Parganas district.

expansive and flatter chars farther south. Within a few years of the emergence of chars above water, the humid climate assists the growth of coarse catkin grass and reeds, leading to a slow process of organic breakdown that facilitates the growth of flora. The chars are generally temporary in nature but can also be permanent; some chars are known to have existed for tens of years and become more stabilized as the river flow changes. Yet, chars are always susceptible to riverbank erosion and an entire char can vanish overnight. Lying within the riverbank as part land and part water, chars can be defined neither as fully land nor fully water. They are also heavily inhabited, often by the poorest and the most vulnerable people, the ‘river-gypsies’ who make a living off this environment. In a previous paper I jointly authored (Lahiri-Dutt and Samanta, 2013) I showed that these sandy masses not only constitute a moveable feast of land and water in a certain proportion, but offer a novel way of thinking about the hybrid environment.

These waterscapes exist in the real world, but are also metaphors for an ungovernable and borderless state of the environment. On them, the very idea of border – environmentally between the land and water, and politically between two administrative units – loses its usefulness. And as if to emphasize this point, borderless people inhabit this environment and make a living every day (Lahiri-Dutt and Samanta, 2007).

### *Living in waterscapes*

Deltas are essentially a non-permanent form of nature, as silt is stored and re-assorted by rivers at their own free will. In Bengal too, neither do rivers flow along a certain route, nor is the land fixed and permanent. The rivers of Bengal are seasonal: during the monsoon months they are in spate, revealing a tremendous fierceness, unleashing a brutality in destructive powers through their floods.<sup>14</sup> Consequently, the village communities developed – from years of coping with floods – various means of tuning their ways of life to the excesses of water, giving rise to a rhythm of life that adjusted to the rise and fall of the rivers. Pulbandis – low-lying, non-extensive, and poorly maintained embankments – lined rivers in certain places to allow spillovers into the fields. Houses in rural areas were built on raised plinths that withstood the onslaught of the worst flooding. Crops chosen for cultivation actually thrived in floodwaters, growing taller as the floodwaters rose during the monsoon months. The indigenous rice varieties grew rapidly ahead of the floodwaters, and the cropping calendar too was suited to phases of inundation (Brammer, 1990; Hofer and Messerli, 1997). In his seminal lectures at Calcutta University in 1930, William Willcocks (1930, 9-12) described this flood dependence as “overflow irrigation”. Broad and shallow canals carried the fine

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<sup>14</sup> W. W. Hunter observed that “[m]any decayed or ruined cities attest the alterations in riverbeds within historic times” (1882, 30) and thought that the history of this part of India is linked to the changing courses of its rivers. More recently, Rudra observed that “the layers of silt of the Ganges delta hide history” (2008, 3).

clay and humus-rich crest waters of the floods into the fields, and frequent cuts on the banks of the canals – spill channels, called *kanwas* in Bhagalpur and *hanas* in the lower parts of the valley – inundated the fields fertilizing the soil, and helped to check the spread of malaria to turn rural Bengal into the most productive part of India. Even standing water had its use: jute crops were retted in the stagnating water of the swamplands (Chapman and Rudra, 1995). An intricate network of ponds, aqueducts, and water tanks provided seasonal storage of water as well as drainage. The water/land gave rise to a highly sophisticated and rich artisan economy that grew on water-based prosperity. The historian of Bengal delta, Willem van Schendel (1991), quotes the eighteenth-century traveler Orme: “... in the province of Bengal ... it is difficult to find a village in which every man, woman and child is not employed in making a piece of cloth.” Until the early colonial period, even British travelers such as Buchanan (1798, 7) commented that many inhabitants of densely populated parts of Bengal treated agriculture as a subsidiary occupation: “... [I]n this part of the country, there is hardly such a thing as a farmer.” Today, Bengal is still primarily defined by its rural character, but one that has farming at its base. This fundamental transformation of a soft and watery meadow was accomplished during the colonial period, in order to create the hard and dry land that the enlightened British wanted to rule. The following section outlines that transformation.

### **Colonial separation of land from rivers**

Environmental historians agree that the British Empire marked an exceptional ecological moment in the history of South Asia, integral to which was “the relentless transformation of environments and landscapes” (Kumar *et al.*, 2011, 1). The colonial period is the watershed that shaped the ecology (and economy) of Bengal, in particular marking the moment when land and waters became firmly separated. Two overlapping strands in environmental historians’ debate on the colonial transformation stand out as relevant for Bengal: first is Whitehead’s (2010, 84) argument that the colonists envisaged lands in the newly acquired tropics as remaining underused or lying waste, in need of being put to better use; second is the not unrelated argument of D’Souza (2009) that the accumulation of capital from selected parts of the environment was the driving force of this transformation. Following Harris (2004), Whitehead (2010, 85) suggests that in dealing with the awe-inspiring lands and waters of the Indian subcontinent, the foundational binary in the British mind was that of a state of nature and a state of culture, which in turn underpinned conceptions of savagery and civilization. Such binary thinking strengthened the doctrine of enclosure of the commons in England, dispossessing thousands of peasants. In colonies such as India, the conceptual equation between a state of nature and a non-European cultivation formed “the *doxa* of land-use and ownership policies taken up by the British” (Whitehead, 2010, 85).

The second strand of the argument has been put forth by D'Souza (2009) who believes that colonial intervention in the landscape, particularly the privileging of land through the introduction of a new land tenure system, was the most crucial development in Bengal. He uses the views expressed by Colebrooke (1806) that the immediate concern of the British, on arrival in lower deltaic Bengal, was to control the rivers in order to stabilize the land as a source of revenue. Intensive research has demonstrated the extent of transformation of the waterscapes of greater Bengal (D'Souza, 2007; Hill, 2008; Mishra, 2003; Klingensmith, 2007). As Bengal became "the great environmental laboratory" (Hill, 1997) to test European theories on the purpose, use, and control of nature in all its manifestations, the annual floods became more disastrous and riverbank erosion increased (Chapman and Rudra, 2007; Lahiri-Dutt, 2008; Rudra, 1996, 2004). The two strands of argument meet in Bengal, the strange water/land that needed to be stabilized in order to firm up a systematic process of revenue collection.

Experiments in creating a land-based economy began soon after 1760, when Bengal and its ceded territories came under British rule.<sup>15</sup> This land-based polity regarded rivers as incidental because it was land that was seen to yield revenue: whoever owned land could profit by its productive output.<sup>16</sup> It is not surprising that one of the first experimental tasks was to detach the rivers by, for example, constructing embankments along their courses. However, it is important to remember that the control was not always physical; it was imperative to separate the *ideas* of land from those of water by the "transmission" (of ideas and institutions) while attempting to "translate" (Indian texts and norms) (Swamy, 2011, 138)<sup>17</sup>. *Two land laws* played crucial roles in this regard, the *Permanent Settlement Act* introduced in 1793, soon after the British conquest of Bengal, and the *Bengal Alluvion and Diluvion Act* of 1825, pertaining specifically to river lands or chars. At the heart of the application of English property law in India was the idea of establishing *absolute* and *permanent* land tenure, and taxation is inextricably linked to ownership and rights. The *Permanent Settlement Act* gave land away to the zamindars or local landlords in perpetuity<sup>18</sup> to reduce the

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<sup>15</sup> Wescoat (1990) quotes Ascoli, a revenue collector of the Sundarbans, as explanation of the neglect of water resources in the colonial administration of mangrove forests in the Bengal delta. Revenues were based on 'land', i.e., spatially delimited areas of economic access and control; water was regarded as merely one of many resources attached to the land. Revenues were derived from commodities that laborers produced: timber, food, fish, and fibre. However, revenue collection was organized through systems of entitlement to land.

<sup>16</sup> Ascoli (1921, 156) noted "... it is merely the fact that revenue is more concerned with land than with water that has tended in this book to hide the importance of rivers."

<sup>17</sup> Chaudhuri (1927, 18) noted that Lord Cornwallis asked Jagannath Tarkapanchanan to write "a digest of Hindu law" and suggested that under the ancient laws and customs of India, laded property vested in the peasant. Mitra (1898, 2) supports this view by noting Manusmriti ("A field, says Manu, is his who clears it of jungle") and the rule laid by the Prophet who was followed by the Muslim rulers ("whoever cultivates waste lands does thereby acquire property in them").

<sup>18</sup> The (mistaken) understanding was that the land was ultimately owned by the state, and hence zamindari property offers an absolute right of proprietorship in the soil subject to the payment of a fixed amount of revenue to the government (C. D. Field [2010/1883] on colonial land regulations).

complexities of revenue collection and to avoid the increasing number of rent payment defaults.

Consequently, The Act ignited debate as to what constitutes land, and what are its productive and unproductive uses (this deliberation is outlined in Mookerjee, 1919). A category of “wasteland” (*baze zameen*) needed to be defined as the opposite of useful land that is farmed. A sub-category was that of *khas mahals*, and these were not included within the area of any permanently settled area (Mitra, 1898, 32). Whitehead (2010, 84) describes such a division as not only a “constructed different landscape of value”, but also a landscape loaded with the social subjectivities of groups inhabiting these territories. For wastelands to become the subliminal *other* to private land or state-appropriated property, the waters needed to be separated from land completely. Whitehead argues that for political liberalism to retain practical validity, a proportion of “common, good land” had to be left for others; hence, a large mass of “wasteland” had to be found (2010, 85).<sup>19</sup> The water/land of chars and the haors and, according to Wescoat (1990), the Sundarbans, provided an answer to this search: “There was no doubt in their [the colonial British] minds that the road to a wealthy country was along the track laid out by Adam Smith: the search for profits would lead to the accumulation of capital and the most productive organization of economic activity” (Neale, 1962, 52). Land in Bengal thus became “the estate” for the British (Phillips, 1886, 41) and in opposition, the rivers became problematic (Sherwill, 1858). The Act had the ecological effect of stabilizing the lands (and waters) and changing the meaning of property: the cultivators began to lose the right to occupy the land that they had enjoyed since ancient times because British colonizers had enumerated the characteristics of the zamindari property as an absolute right of proprietorship in the soil, subject to the payment of a fixed amount of revenue to the government. This absolute right needed an absolute boundary between the land and the rivers, and altered the meanings that these elements of nature held to local residents. Consequently, higher embankments marked the boundaries on rivers to protect revenue-yielding land. As the embankments rose in height to completely segregate the rivers in places, the silt these rivers carried began to accumulate within the riverbanks giving rise to chars. Silt accumulation on the riverbed caused further decay to the rivers and to the traditional overflow irrigation system, causing the crumbling fluvial systems to desperately increase the shifting of their courses<sup>20</sup>.

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<sup>19</sup> Quoting Whitehead (2010, 85): “The category of wasteland became the hidden opposition to the category of value in Locke’s *Second Treatise*, in the sense that it is land that lacked in value because it had not (yet) been enclosed, privatized, and commodified. Wasteland and value-producing land became a foundational binary for multiple, ramifying oppositions that Locke constructed between the state of nature and a state of culture, savagery and civilization.”

<sup>20</sup> One of the effects of river control was rampant malaria. By the time C.A. Bentley, the colonial director of public health in Bengal, wrote his 1925 treatise, the soaring mosquito population had started to result in the decline of agricultural fertility and deterioration of public health. Klingensmith supports this cause-effect explanation (between mosquitoes caused by a choked drainage system and malaria): “Out of a provincial

As such movements became more unpredictable, those settlements that began with the blessing of the river now needed protection from it.

Later, having established revenue-earning methods, the British administrators began to explore ways of making the delta more productive (Eaton, 1990). This led colonial administrators to contemplate the problematic issue of legalizing the shifting river courses and moving lands produced by unending accretion and erosion. The law that was created in 1825 for this purpose and which still rules the rights of ownership of char lands is the *Bengal Alluvion and Diluvion Act* (BADA).<sup>21</sup> BADA was meant to establish a set of rules to guide the courts to determine the claims to land “gained by alluvion” or accretion, and the resurfaced land previously lost by diluvion or erosion<sup>22</sup>. Although chars exist within riverbanks, the difficulty remains that when a piece of land is lost to riverbank erosion, it may not arise in exactly the same location or arise at all within the foreseeable future. This means the owner has no certainty that they will get it back if and when it resurfaces, or when another char rises nearby. BADA considers two main categories of chars rising within the riverbanks: those rising *in situ* and new accretions. For the right to land that once existed, but was diluviated, and subsequently resurfaced in the old site, BADA considers that right to be incidental to one’s title to a tangible property, derived from the principle of justice and equity. The right to property is not affected only because that property has been submerged under water, and the owner is deemed to be in “constructive possession” of the land during the time of its submergence and it can be claimed back when it reappears out of water and can be identified as land. For this, however, the owner must continue to pay rent for the diluviated land. BADA ensures that when new land rises within a river, it should be considered as “an increment to the tenure of the person” to whose land it is contiguous, subject to the payments of revenues assessed by the state. Thus, the key to establishing land rights in the court of law was the payment of rent, even on diluviated land, obviously benefiting the richer classes.

Such a rule, however, is not applicable if a river suddenly changes its course, separating a considerable piece of land or joining it with another adjacent farm, but without destroying the identity, or preventing the recognition, of the land so removed. New accretions in large navigable rivers would be the property of the state, but if the channel between the island and the shore is fordable at any season of the year, it is considered an accession to the land tenure of the person who is “most contiguous to it”.

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population of around 45 million people in 1911, Bentley estimated that 30 million in Bengal were afflicted by malaria, more than 10 million severely so” (2007, 34).

<sup>21</sup> It is most likely that BADA added a word to Bengali dictionary; the popular folk term “*badajami*” means charlands.

<sup>22</sup> Donaldson (2011, 159) offers an historical account of ideas of accretion and avulsion that caused difficulties in firmly drawing boundaries between territories.

Cederlöf (2014) notes that massive survey operations were also initiated to produce cadastral maps for revenue survey lists (or *khatians*). The surveys fulfilled the dual purpose of obtaining more accurate knowledge of what was deemed as “resource”, and of assessing the capacity and potential of these lands. Efforts to pin down the shifting river courses (such as in the maps made by James Rennell) helped to firmly draw the borders (Cederlöf, 2014). The local administrators also set out to delineate land categories as cultivated, uncultivated, alienated, and “most productive”, and in the process allocated a large amount of land as *baze zameen* – wasteland.

Changes in social relations of production in agrarian Bengal in response to the laws have been well documented (see for example Guha, 1963; Field, 1883); less documented is the transformation of Bengal’s ecology along with changing values of land and water. The laws unleashed a cycle of change in which one thing led to another – interventions on land and water changed production relations and exacerbated power inequalities within communities. Bengal was transformed from a riverine into a land-based community (Urch, 2008). The absolute right over land, Roy (2010) argues, allowed the colonial British to accumulate primary capital through land taxation, determine agrarian relations, and alter the meanings attached to the elements of land and water. This had unforeseen impacts in shaping the meaning of place and landscape in Bengal.

The countless number of under-tenures that had developed in this new system was indicative of the growing importance of land in Bengal. Phillips (1876, 29), in his Tagore Law Lectures, observed that it was impossible to give an exhaustive account of them as “in many cases what is called a tenure has no distinctive feature; and the name it bears is given, not an account of any peculiarity in cultivate or the crop produced, or the mode in which rent is paid.” Nationalist historians (such as Mookerjee, 1919) have shown that proprietary rights of land had always belonged to the cultivator in pre-British times: the king was only entitled to a share of a land’s produce and was never regarded as the proprietor of the land. Under colonial rule the cultivators began to lose the right to occupy the land that they had enjoyed traditionally.

Legal control of rivers went hand-in-hand with engineering controls. Once the idea of land was entrenched as being in need of protection from unpredictable waterways, it was easy to wall-in the latter with embankments and dikes, encouraging them to remain within fixed courses thus rendering land even more permanent. This dominant narrative was adopted by most intellectuals in Bengal (see for example Sengupta, 1951), who were strongly influenced by the reigning discourse of positivism (Lahiri-Dutt, 2012). Walled-in and bounded by embankments, the rivers were further controlled by the construction of dams and barrages upstream (Lahiri-Dutt, 2008). In the process, the fluid worlds of waterscapes became invisible.

## Conclusion: Critical geography reframing ideas of hybridity

The water/lands of the Bengal delta are hybrid environments not only because they are natural and lived-in waters, but because colonial history constructed land as more productive, and rivers as challenging. The portrayal of rivers as uncivil (and hence in need of control) in riverine Bengal led to colonial and postcolonial engineering and legal controls, through land- and water-management policies and the revenue system (Lahiri-Dutt, 2000). Still, the water/lands of Bengal have persisted as if to illustrate diverse and fluid worlds, and to encourage us to reinterpret hybridity not just as either one environment or the other, and not even as the mixture of two environments, but as *sometimes a given environment, sometimes another, sometimes both and sometimes neither*. The blend of the water/lands is such that the environment is continually in flux, not a mixture of this and that.

Yet, at the end there is a need to ask the “so-what” question, and consider the implications of water/land in advancing critical geographical theory. In the contemporary world where waters are rising, deserts spreading and conflicts over resources looming, and where experts are forecasting collapse and doom all around, is it reckless and nihilist to talk about wet theory? Can wet theory make itself legible to mainstream environmental sustainability science and resource management experts who are looking for “fixes” to prescribe in order to deal with change? Can wet theory converse with (and enrich) our understandings of uncertainty and risk? Can wet theory avoid being embraced by dark and deep ecology proposing uncivilizational returns? Finally, how can the “liminal spaces” of hybrid water/lands be re-presented “not [only as] lines of separation but zones of interaction ... transformation, transgression and possibility” (Howitt, 2001, 240)? These important challenges are yet to be dealt with by the proponents of hybridity. A conversation between geographers and environmental historians has begun, and a flexible conceptualization of hybrid environments inherent in wet theory would enliven the dialogue.

In laying out the characteristics of wet theory, Appadurai and Breckenridge (2009, ix) say “[this theory] recognizes its own uncertain footing, that is humble to the ruthless tyranny of context, and that is always ready to negotiate with the facts ...”. For academic subalterns, conventionally treated as “sources of data” in international geography, it thus opens up an opportunity to flaunt their “view of nature from below”. Empirical evidence will undoubtedly play a crucial role, lest in empty concepts critical geographers resort to empty rhetoric. Muddy, soggy Bengal, with its ill-defined legal and geographical boundaries, provides us with those contextual facts to push the conceptualisation of hybridity into domains not yet trodden by Anglo-American cultural ecologists.

Mainstream geography, based on the water-land dichotomy, turned water/lands invisible to both social and environmental scientists. Yet, thinking of Bengal through the lens of hybridity invokes reconsideration of the way water (and

land) has been considered here. Bengal as water/land offers us the rare opportunity to dredge beyond the conventional perception of water and land as two rigid and indissoluble categories, and to transcend the idea of permanency and hard edges – both natural and political – instead recognizing dynamic, constantly changing environments, and people, communities, and cultures deeply embedded in them.

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