Chapter 13
Relationships First: Introducing Phenomenological Research Methodology in Hydrosocial Scholarship

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INTRODUCTION

Increasing water-related disasters, scarcity in accessing water for everyday needs across social strata, prevailing water-intensive patterns of development, and rising water pollution are some of the issues that brought water at the center of attention in this century. Although water is a natural resource, these water-related issues arise at the intersection of socio-political and cultural dimensions. By acknowledging this fact, the current research on water is evolving as researchers are adopting interdisciplinary or transdisciplinary frameworks. Hydrosocial framework is an example of that shift, similar to socio-hydrology. Wesselink et al. (2017) thoroughly tease out in what manner these two frameworks differ in their epistemology, ontology, and axiology. The hydrosocial framework emphasizes on reorienting our approach of studying water as an object, to understanding water as being integrally embedded in its social context that gives its meaning (Budds et al., 2014). Capturing this place-specific meaning of water that transcends the scientific definition is one of its major objectives. According to Wesselink et al. (2017), the second objective is to understand how this meaning leads to establishing different relationships with water and the subsequent choice of water management system (Wesselink et al., 2017). The choice of water management system becomes the focal point as in the hydrosocial framework, researchers are not only keen on implementing a scientific intervention for better management, but also embrace a pro-poor stand and consider all different facets of a solution comprehensively (*ibid*).

Mostly, hydrosocial scholarship explores human agency, power asymmetries, and the need for fostering a reflective attitude to offer socially-just solutions. To attain this, narratives act as the departure point in hydrosocial scholarship.

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A. Mukherjee (ed.), *Riverine Systems*, https://doi.org/10.1007/978-3-030-87067-6_13

Researchers acknowledge that narrative is one of the effective ways through which developing a rich understanding of complexity is possible. This scholarship also adopts Actor-Network Theory (ANT) to capture the internal relationship that water and social power possesses. Introduction to hydrosocial cycle, as Linton and Budds highlight, is a step toward

> [t]ranscend (ing) the dualistic categories of 'water' and 'society', and employ a relational-dialectical approach to demonstrate how instances of water become produced and how produced water reconfigures social relations. (Linton and Budds, 2013, p. 2)

Scholars employ ANT to tease out all the transient networks, and also to unveil the privileged worldview that shapes the knowledge about water and guides water management. Both ANT and narrative approach work with one basic hypothesis, that is, different systems interact with each other, and the complexity that arises from these interactions can be captured through these.

The transition in water research from hydrology to hydrosocial is a shift from the understanding of one system (bio-physical system) to understanding how the interaction of different systems gives rise to the meaning of water. It acknowledges that meaning of water is place and community-specific, and subsequently argues that these meanings aid in forming the relationship with water. To understand this place-specific and community-specific meaning at first, hydrosocial emphasizes how various structural factors interact with each other and what is the dominating worldview that plays a crucial role in producing knowledge of water. Once the power dynamics between structural forces come to the forefront, and the meaning of water gets revealed, hydrosocial scholarship claims that these meanings guide individuals' relationship with water. Narrative as a tool helps in capturing these varied relationships with water. In that same vein, the hydrosocial framework presented by Linton and Budds comprises three components, viz. H_2O or biophysical and chemical property of water, technology, and social power or structure. By focusing on the interactions among these structural components, this scholarship attempts to unveil the holistic underneath picture (Boelens, 2013; Falkenmark, 1997). This approach of starting from the parts or components and then considering the relationships/interactions to be able to gain an in-depth understanding, I term as a disengaged mode of inquiry. I will clarify the reason behind terming it as a disengaged approach as I contrast it against an engaged mode of inquiry.

Hydrosocial employs narratives as a tool to gain an in-depth understanding of water. While analyzing narratives, the structural forces and interactions remain a focal point driven primarily by political-ecological understanding and ANT. Thereby, I argue though the narrative approach is vested with significant importance, we fail to explore the full potential of this approach in the hydrosocial framework. Hydrosocial adopts a problem-oriented approach and use of narrative is merely a tool to find out an appropriate solution. In another article, I present a detailed philosophical critique of this problem-oriented approach. As hydrosocial follow this problem-oriented approach, similar to the other existing paradigms, it also gets caught into the calculative ways of thinking, in which humans as subjects think about the object water from a managerial perspective. However, one of the

main aims of hydrosocial is to transcend this subject/object binary. Precisely for this, hydrosocial gives primacy to other structural factors, but limited use of narratives makes it a rather shallow disengaged mode of inquiry. On the contrary, I propose a methodology that vests primacy to the relationship between an individual and water by focusing on phenomenological narratives.

In everyday affairs, individuals live amidst the relationships that water is part of. Thereby, the relationships and interactions, I argue, first play out in our everydayness or we dwell completely being soaked into that milieu and often remain oblivious of the presence of these relationships. We are always-already dwelling in an engaged reality which is simultaneously shaped by as well as shaping these relationships and interactions. Therefore, relationships must rightfully be vested with higher ontological primacy than the components. I argue against the claim by Wesselink et al. (2017) that the meaning of water decides individual's relationship with water; rather, I see it is other way round. From individuals' everyday relationships with water, the meaning of water emerges. Hence, if we can get to these relationships from everyday experiences, then only we will arrive at a more engaged or situated understanding of the hydrosocial nexus. To capture these relationships, we need to focus on individuals who are being embedded in the hydrosocial nexus, live and witness the playing out of these relationships in their everydayness. In this context, this chapter introduces phenomenological research methodology that can capture experiential accounts of individuals and can also serve as a theoretical bedrock to understanding hydrosocial changes in an engaged mode.

Phenomenological Research Methodology is a powerful methodology that accepts narratives as its departure point. Through phenomenological narratives, we can attain the necessary experiential account for appropriately capturing the meaningful encountering of water. This methodology could illuminate the enmeshed relationship within which an individual belongs and in turn, could shed light on various components of hydrosocial nexus. Focusing on the relationship is the core for both phenomenology and hydrosocial—while phenomenology emphasizes individuals' experiences of these relationships, hydrosocial accentuates the need for understanding the relationship among various structures (social, political, and economic). My attempt here is to demonstrate how individuals' experiences provide an avenue to understand the relationship among various structures as well as makes us aware of those relationships through which the meaningful encountering of water becomes at all possible in our everydayness.

PHENOMENOLOGICAL RESEARCH METHODOLOGY

The dualistic nature of our thinking that divides subject and object to study the latter was problematized with the development of the stream of phenomenology which focuses on ordinary experiences to know about any phenomenon. To transcend the subject-object duality, the departure point of phenomenology is the first person's account of any conscious experience. Conscious experiences are those which not

only one observes or engages with, rather which one experiences and lives through or performs. By taking into account these conscious experiences, phenomenology studies the intentionality of the experience which analyses the way experience is directed toward revealing the phenomenon. The basic epistemological shift that phenomenology brings with itself is that it does not agree with the fact that reality exists out there. Indeed, it focuses on individuals' experiences and more importantly, their intentionality, and through that, it attempts to decipher the meaning of things that emerge in our experiences of a phenomenon. Manen (1997) points out that upshot of phenomenology is the moments of seeing meaning or "in-seeing" which is only plausible through thoughtful relation to our involvement with things of our world in everydayness. This mindfulness of our everyday involvement with our world provides an inherent understanding of a phenomenon by illuminating our relation to it.

The Phenomenological Research Methodology (PRM) is widely accepted in the discipline of psychology, education, nursing, and consumer research. In environmental studies and humanities literature, employing PRM is quite limited[1]. There are examples that have employed phenomenology as a methodology to capture embodied experiences. Here we need to remember Manen's (1997) suggestion that the role of phenomenologists is to unveil the region from where meaning arises and which in-turn leaves an impression on us, instead of capturing the mere experiences. In the following, I illustrate the methodology in detail with all its nitty-gritty.

The first step of PRM is to identify the specific phenomenon that would be the concerned matter of inquiry. Phenomenon is a mere experience/event/happening or occurrence. There should not be any problematization or value judgment involved in deciding the phenomenon. The only thing one needs to keep in mind is that there should be a possibility of obtaining direct human experiences of the phenomenon. To elaborate, in the context of hydrosocial, an example of a phenomenon could be one of the lived-experiences like changes in water bodies, water availability, the experience of water quality, landscape change, or access to water. Here, we should not consider any particular problem/concern like water crisis, water pollution, submergence of land, etc. as a phenomenon to begin with.

The next important step is to choose the co-researchers or narrators, who have prolonged and in-depth experiences of the phenomenon. As co-researchers' reflective descriptions of their experiences about the phenomenon are the basis for further exploration, the success of such study is entirely contingent upon the participants (Creswell, 2007). Hence the choice of participants depends on three basic criteria, viz. prolonged experience of the phenomenon, the willingness to spare adequate time to share experiences, and possessing the necessary articulation ability. An essential characteristic of a phenomenological narrative is that it might not be a definitive account of the phenomenon itself; rather, it is a description of the awareness of the condition in which the phenomenon can manifest itself (Wrathall, 2006)

[1] See my other attempts to integrate Phenomenological Research Methodology into Environmental Humanities: [Kalpita Bhar Paul and Meera Baindur, 2016], and [Kalpita Bhar Paul, 2017].

who also points out that "the end goal of description is to guide the reader to the practical orientation for the world in which the phenomenon can show itself" (Wrathall, 2006).

This methodology does not follow the active questioning technique; rather a researcher's role is quite limited here as being just a facilitator. As phenomenological narrative emerges out of self-reflection, the interview process is entirely unstructured. A researcher's sole responsibility is to create the space or moment that leads a co-researcher to elaborate on the experiences of the phenomenon or the occurrence of the phenomenon in his/her everydayness in a mode of 'self-talk'. The best way to create such space is to conduct the research at the site of the phenomenon (Moustakas, 1994). It enables the researcher to engage with the world of experience, which eventually ensures that he/she is completely immersed in the context. Particularly, in the context of hydrosocial research, I feel this is quite important as the visualization of a phenomenon offers a sense of belongingness with the place.

The discussion with co-researchers revolves around three major themes: "What does an individual experience in terms of the phenomenon?", "What contexts or situations have typically influenced or affected one's experience of the phenomenon?", "How does it affect the narrator?" (Englander, 2012; Groenewald, 2004; Kornhaber, 2009; Bhattacherjee, 2012). As this methodology is quite fluid, a researcher should maintain the necessary space for himself/herself to contemplate and reflect throughout the entire process so that the researcher can refrain himself/herself from asking any causal explanatory questions and in-turn, could guide a co-researcher to reach to the mode of 'self-talk'. If a researcher is able to reach this stage of 'self-talk' then, it has been observed that saturation can be achieved with 5-25 narratives from a homogeneous group. Saturation indicates that a new narrative is not providing any further insights into the concerned phenomenon and becomes redundant[2].

Interpretive Approach in PRM

As per literature, two of the broad objectives of hydrosocial paradigm are that of exploring how the meaning of water emerges from our relationship, and how water gets meaningfully appropriated to a community. PRM guides us to reveal these two questions in depth. The interpretive approach of narrative analysis over the descriptive[3], would be more appropriate in this context. Kafle (2011) highlights the normative difference between these two approaches is that researchers who follow the

[2] For further details about the methodology see Meera Baindur and Kalpita Bhar Paul, 2015.

[3] According to DPRA, a researcher should bracket her own belief regarding the pre-existing conceptual framework about the concerned phenomenon before beginning the research work. In this process, a researcher's aim should be to look at the phenomenon from the descriptions given by the individuals who have directly experienced it. In other words, it suggests that one must bracket out her natural attitude, which is thought to be contaminated by the prevailing scientific paradigm.

former believe that philosophy should not be carried out from a detached, objective, and disengaged standpoint, precisely what the latter proposes. Indeed, in the interpretive stream, researchers attempt to interpret what it means to experience the same that is described by the narrators. This method tries to capture the underlying mindset of narrators to get to their experiences. More importantly with the help of that, it attempts to reach the underlying condition through which the phenomenon appears. From this point of view, Interpretive Phenomenological Research Approach (IPRA) is a dynamic process that demands a persistent effort from a researcher's end to attain the state of experience in an 'as if' mode.

IPRA is known as a double hermeneutic process (Pietkiewicz and Smith, 2014) which points toward a dual interpretation. The first layer of interpretation comes from the narrator, and to understand that a researcher tries to extract the essence of narratives from the narrator's point of view. This process is called an emic approach (Pietkiewicz and Smith, 2014). Next layer of interpretation is of researcher's understanding of the narrative through notes, explanatory comments, and multiple readings of a narrative. It is called an etic approach. Thorough readings help a researcher to break narratives down for grouping them under various themes. The explanatory comments noted down during readings as well as during fieldwork, guide a researcher to develop new themes. By clustering such themes, major themes emerge. Once these themes are in place, the task of the researcher is to proceed with the analysis of narratives based on the major themes. Following this structure, final step is to elaborate on each theme by drawing examples from narratives. This double hermeneutic process, on the one hand, demonstrates the way interpretation happens in an interviewee's mind; on the other, it also provides a scope to capture a researcher's interpretation of the same.

While analyzing a narrative concerning water availability, for example, a researcher should at first try to discuss those situations in which the question of availability has emerged, and when the narrator felt the lack of availability or excess of it and most importantly how the narrator is defining the changes in water availability. Answers will come from the first level of hermeneutic, i.e., emic approach. In the next level, the multiple readings of the narratives will help researcher to develop various themes, which may not always directly offer an understanding of water availability, it will rather show how this is intrinsically tied with other socio-political, ecological, and economic issues. Themes like industrial pollution, groundwater depletion, water resource management, impact on biodiversity, and women's drudgery etc. will inherently provide us the essence of the phenomenon of water availability. It will reveal how the availability of water is not only an issue related to water; it is indeed the tip of the iceberg.

In the following, as an illustration of how PRM can be employed to study water-individual society relationships, I am going to capture the nexus between water and changes in the environment in the Sundarbans within the framework of hydrosocial.

Furthermore, descriptive phenomenology also borrows from Husserl's eidetic analysis, which attempts to reach the universal from the particular, to establish the truth.

The phenomenon under consideration here is how people of this area perceive changes in the environment. We all are aware that in the Sundarbans rivers, creeks, and land create a cobweb-like structure which essentially forms the Sundarbans that is neither a waterscape nor a landscape region; indeed, it stands at the threshold of being both of these, concurrently. Hence, the environmental changes in the Sundarbans cannot entirely be captured phenomenologically, barring the discussion on water. Water acts as an active force in this region not only in determining the landscape but also in shaping the lives and livelihoods of this area.

PHENOMENOLOGICAL NARRATIVES ON CHANGE IN ENVIRONMENT AND LANDSCAPE OF SUNDARBANS

Following the double hermeneutic process, at first, it is important to grasp how the biophysical changes in the landscape and the environment come into the narrators' purview or how narrators are defining these changes. Reading the narratives in an 'as if' mode or from the narrators' standpoint will enable us to understand when the changes are being felt by the narrators and which changes have the most bearings on them. Here, the primary focus is on to capture those moments that induce a narrator to experience changes in landscape and waterscape.

Emic Approach: In Sundarbans, the islanders' lives and livelihoods revolve around various environmental phenomena like timing of tides, seasonal changes, lunar cycle, etc. For this dependency, there is an integral connection between the narratives of environmental change and their livelihoods or everyday endeavours. As they spoke about their livelihoods and household chores, changes in the landscape and waterscape surfaced. However, this contextualized reference of change is crucial as it determines whether or not any particular change in this 'ever-changing' world gets acknowledged as a 'change' in the narrator's everydayness. For example[4], a veteran boatman narrates, how before the introduction of GPS technology, he used to notice the submergence of the existing landmasses on the sea or rivers and the creation of new islands while taking his boat deep into Bay of Bengal. Being a boatman, the person acknowledges the submergence and the creation of new islands as these provide him with necessary landmarks for navigating at sea. Hence, we can see these subtle landscape changes appear to boatmen not merely as changes in the landscape; indeed, these possess higher significance to them as landmarks. And their work-world enables them to notice these changes.

However, young boatmen are hardly aware of these changes probably because the new age technologies like GPS, wireless phone, have made their journey so safe that they do not feel the need to remember any external landmarks for navigation.

[4]This field work was part of my PhD dissertation research. Portions of these narratives have been used in my different published articles. However, the interpretation and most importantly the contextualization are entirely distinct in each of these works.

Technological devices entirely guide them at sea. It renders that these landmarks are not necessary for them, and thus, mostly they remain ignorant about changes in those. It is an example of how structural modifications like the introduction of new-age technologies make people indifferent to changes in their surroundings. Nevertheless, these young boatmen have agreed on the fact that they cannot rely on technology entirely as there is always a scope that in front of nature's fury these technologies will fail, and in these moments their intuition can be their only savior. As one of them says:

> No one can teach how to ride a boat in the sea. At most one can tell us the know-how of driving a boat. However, true learning happens through our years-long experiences as an assistant of an experienced boatman. We gather how to make the right decision, how to decipher natural clues, etc. Sitting beside him only we truly learn how to make our journey safe at sea. It is much easier to learn the technical know-how, but that would not be enough for life [FLDN][5].

It is a perfect example of how changes in livelihood needs (i.e. context) subsequently transformed an individual's observation ability, and as a result, changes in the environment which earlier was significant becomes insignificant. Technological interventions, on the one hand, create a safe environment for dwellers to cope with natural elements. On the other hand, due to these interventions inhabitants become reluctant to observe the environmental cues that provide them an early sign of extreme natural events, as well as changes that are perpetually taking place and shaping their surroundings. No doubt, this lack of awareness makes them oblivious of their capacity of gathering intuitive knowledge of this land-waterscape.

Although narrators speak about changes in the coastline vividly, in their narration, they hardly mentioned about landscape changes. They were even quite reluctant to acknowledge it as a change. They mentioned modifications of the landscape as if it is the very nature of the place where they live. According to them, one of the primary characteristics of Sundarbans' rivers is that they shift their courses over time, and that, in turn, induces changes in the landscape. However, islanders do not acknowledge these landscape modifications as 'environmental changes'; they consider these as an integral characteristic of the place they inhabit. The attitude of accepting landscape changes as the feature of these islands, as we can understand, makes islanders skeptic to any policies and interventions that, in principle, attempt to safeguard land from water. The prevailing land-water binary is missing in their phenomenological experiences. Their lives on island lead them to acknowledge that living in the Sundarbans means living in a land that is liminal. Here, on the one hand, land emerges from water and on the other, "land remains until water takes it over" [FLDN].

With the help of these narratives, one can understand that there is a significant difference between outsiders' and insiders' acknowledgement of changes in land and waterscape. While these seem to be threatening to outsiders, the dwellers' lives flow in harmony with these changes. The first layer of analysis of phenomenological

[5] FLDN stands for Field Narrative. Henceforth, FLDN will indicate extract from narratives.

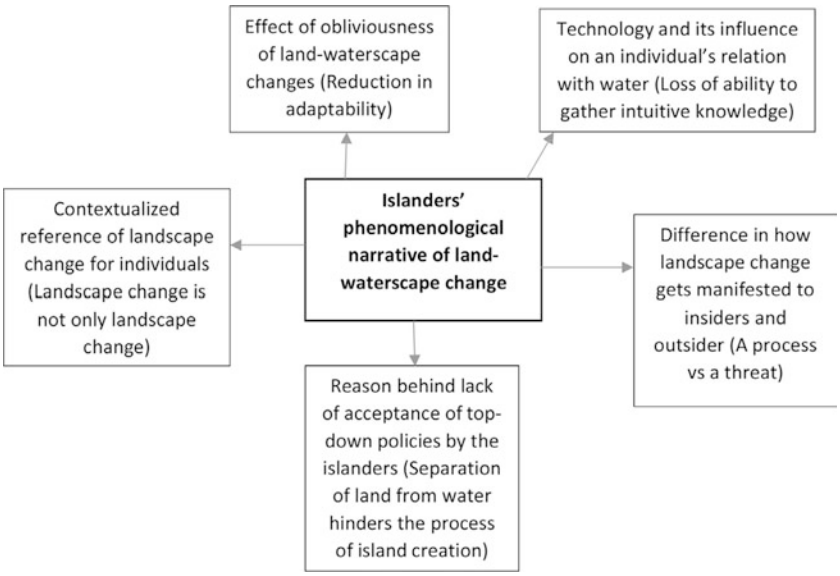

Figure 1. Various dimensions of hydro-social framework emerged out of islanders' phenomenological narratives.

narratives helps us to capture inhabitants' perception of changes in waterscape. It enables us to acknowledge how depending on the waterscape the landscape is being formed and consequently, how society thinks about this kind of liminal landscape. It also illuminates how a community, who lives in close proximity to such a liminal landscape, remains at ease with such integral land-water mingling. Sundarbans islanders for their living depend on water not only for their livelihoods or for their everyday needs but also for the continued existence of the very land itself, and eventually, they find themselves in an intrinsic relationship with water. The following diagram (Fig. 1) conclusively portrays how the first level of phenomenological narrative analysis unfolds various aspects of the hydrosocial nexus.

Etic Approach: The next step of narrative analysis is etic approach. From my reading of narratives, two themes emerge, viz. the first is obviously the landscape change and the second is change in biota. Following illustrates how these two themes help in understanding the hydrosocial nexus in this region. There are some sub-themes which also emerge within these two broad themes, for example, property loss, changes in livelihoods fall under the first theme, and risk perception, effects of institutionalized/top-down interventions come under the second theme. Following will provide the account of their acknowledgement of change; in addition, I will highlight the context of that acknowledgement.

Landscape change: Although the narrators have not explicitly mentioned or have not acknowledged several alterations in the landscape as change, phenomenological descriptions of the place implicitly contains a significant account of changes in land and water-scape. These phenomenological accounts offer a sense that land and water

create an intricate network in this area. Islanders have experienced many floods with varied intensities. Those experiences of floods, I see, make them realize the essence of the place which is, the land here is always susceptible to the invasion of water. Islanders here live within a space constituted simultaneously with anxiety and ease. An old fisher in his narration mentions "my present house is the thirteenth house of mine, and I have moved as and when the embankment shifted. The recent one is the seventh embankment I witnessed in my life" [FLDN]. To capture constant transformation between landscape and waterscape narrators frequently use phrases like: *age chilo, ekhon nei/age chilo na ekhon ache*, which means, something was there earlier but not present now/or something was not there earlier but is currently present. This expression highlights the presence-absence framework to prove how the Sundarbans always remains in a state of flux.

The transition between land and water happens here quite fluently, land can change into water-body or a waterscape can transform into the land, as if the entire area is in a process of 'becoming'.[6] Due to this process of 'becoming', changes in the landscape are encountered so often and in almost daily activities that the inhabitants identify these as the very characteristics of the place itself. No wonder that these landscape changes have strong bearings on the islanders' lives. Property loss is common upshot of such change. As mentioned above, many islanders have shared their experiences of shifting their home from one place to another. And also this water invasion on land hampers farming to a large extent, e.g. islanders explain, after the cyclone Aila, in 2009 to cope with the saline water invasion, many farmlands are being converted to salt-water ponds for fishing a few particular species of fish. Farmers either have sold or leased the land to fishers or without having any alternatives they have moved from their primary occupation. Hence, fact is that though the islanders are habituated to landscape changes, their lives and livelihoods do get hampered by such change to a large extent. For this reason, in their phenomenological narratives landscape changes intrinsically appear as significant.

Change in biota: The connection between hydrosocial nexus and the biota of the Sundarbans region is intricate. All the narrators explicitly recognized changes in biota in some form or the other as livelihoods of the islanders directly depend on the biota. The most common observation in this regard came from fishers as they discussed the fish stock depletion and reduction in the varieties of fish. Local fishers undoubtedly accept that the introduction of trawler fishing in this region has aggravated fish stock depletion. Opening up Sundarbans waterscape for industrial trawlers not only hampers traditional practices of sustainable fishing but also harms the biophysical condition of the sea. One of the fisherman shares:

> The new trawlers come from outside, have a different mechanism to catch fish. They place their net so deep into the sea that it even scratches grass and fish seeds, everything from the seabed. [FLDN]

[6]For more details about phenomenological understanding of landscape change see [Kalpita Bhar Paul and Meera Baindur, 2016].

This deterioration in the seabed as per the fisher community of the islands puts a massive toll on fish reproduction and that in turn severely affects their livelihood.

Many narrators have alluded to the decline in the forest cover; however, in this regard, there was hardly any mention of extinction of any plant species in their account. On a few occasions, to explain the nature of the forest, some of the narrators described how, in spite of Sundarbans getting its name from the *Sundari* (*Heritiera fomes*) tree, at present the tree can hardly be found in the forest, rather the forest is mostly covered by Goran (*Ceriops decandra*) tree. Except this, narrators have mostly described the loss of forest cover along the river. Changes in the course of rivers and increasing demand for settlement area, together led to the depletion of the mangrove that in turn make this region significantly vulnerable to the brute force of storms and cyclones. Apart from this, it further impacts the availability of firewood. Mostly women's accounts capture how at present gathering sufficient fuelwood is a struggle, and their drudgery has increased significantly. In earlier days firewood availability was never a concern for them, but at present, on one hand their access to forest is highly restricted, on the other, trees alongside riverbanks are declining; therefore to collect firewood they are now dependent on water. They need to go to the river at dawn to collect logs which come floating downstream.

Small scale fishers, who regularly visit narrow creeks deep inside the forest, as well as honey gatherers[7] mentioned that the number of tigers have significantly increased in the last 10-15 years. The threat of tiger attack is a deterrent to their forest-based livelihoods. Their accounts sketch a vivid picture of how institutionalized conservation and preservation programmes have severely restricted their access to the forest. In the same vein, tiger protection and conservation programmes undoubtedly increase threat to their life inside the forest or even making their stay in the proximity to forest more unsafe. Forest conservation and preservation are considered as the backbone of ensuring the Sundarbans' sustainability and disaster risk reduction; however, the same pose threats to inhabitants whose lives and livelihoods are integrally dependent on forest and creeks.

Farmers shared how the introduction of monoculture practices led to the abolishment of different native paddy varieties. They also explain how land-shaping and concretization of embankments increase the risk of flood. As a result, their choices of paddy have changed.

> Earlier we used to cultivate native varieties paddy, which yielded less but those paddies could withstand saline water, massive storm, and even flooding. Now we focus more on yield and could achieve that only through hybrid varieties of paddy. But it has increased the risk by many folds. Hybrid varieties cannot stand any slightest of natural calamity. That is why during Aila [cyclone that hit this region in 2009] all our crops failed miserably [FLDN].

It shows how development in terms of separating land from water have induced some significant alterations in farming practices. These seem effective at the outset

[7] Mostly people from indigenous communities of this area go deep inside the protected forest, generally, in a group for collecting honey from beehives.

but practically makes farmers more vulnerable to the onset of any natural calamities like floods, cyclones.

The second level of narrative analysis with the help of theme-based analysis showcases the interconnection among various processes and events. It shows how structural changes induce alterations in traditional practices and how those, in turn, influence the biophysical environment of the Sundarbans, impacting the inhabitants' lives and livelihoods. The following diagram comprehensively illustrates the same.

The two-step analysis offers clarity on how to capture nuanced hydrosocial changes through detailed analysis of phenomenological narratives. I conclude, PRM is quite appropriate not only for deciphering the effect of hydrosocial changes in individuals' lives and livelihoods but also for teasing out existing interactions among structural forces and how that in-turn, creates this hydrosocial nexus. It also indicates how far institutional strategies are effective in managing the hydrosocial nexus in this region, and how it shapes a community's future. This methodology helps us to realize the bigger picture by illuminating the relationship between water and each individual and also water and the society/community at large. In this methodology, narratives are not only employed to come up with an appropriate solution of the problem at hand, instead it helps in teasing out the situation in-depth and all the interconnected issues that emerge out of this situation (Fig. 2). Especially, in area like the Sundarbans, where water plays a pivotal role in shaping every

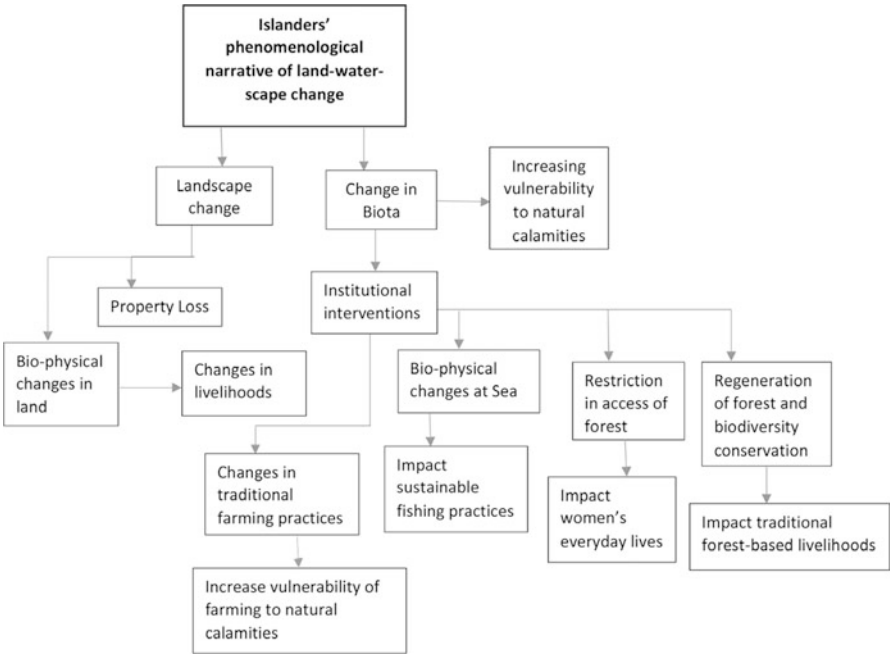

Figure 2. Illustration of various aspects of hydro-social framework emerged out of theme-based analysis of phenomenological narratives.

factor—tarting from landscape to livelihoods, to eventually the flow of life—it is imperative that PRM is employed to tease out various facets of the hydrosocial framework.

CONCLUSION

This is an attempt to demonstrate how the current hydrosocial scholarship in-spite of being able to induce a shift from hydrology to hydrosocial, gets limited by following a top-down approach or a disengaged mode of inquiry. This scholarship highlights the presence of different components of hydrosocial nexus as its point of departure and then attempts to capture the interactions among these components to be able to shed light on the relationship between water and society holistically. I argue the approach of employing an interdisciplinary perspective to grasp a comprehensive picture falls short of bestowing enough emphasis on the relationship as such. Here, keeping in mind that the primary objective of hydrosocial nexus is to unfold how water and society relate to each other and, in-turn, shape themselves, I introduce an alternative methodology named Phenomenological Research Methodology. It begins with everyday experience of individuals and through that intends to arrive at a more nuanced understanding of the complexity of water-society relationship. I vouch that this is an apposite one to capture the hydrosocial nexus as it adequately accentuates the need for an engaged mode of inquiry and opens up different components of the hydrosocial nexus as these appear in an individual's field of experience. The relationship between water and society is intrinsically present in each of our lives and could be possible to grasp by paying attention to our everydayness. Therefore, I propose instead of various structural forces and components, individuals' everyday experiences should be the departure point for hydrosocial to reach a holistic understanding that it envisages. Through the case study of the Sundarbans, I demonstrate, how the islanders' phenomenological narratives provide a detailed understanding of various structural components of hydrosocial as well as illustrate the context in which it plays out in individual's situatedness.

This is a preliminary attempt that contributes meaningfully to the hydrosocial scholarship by not only providing a case study of the Sundarbans to illustrate the playing out of hydrosocial framework there, but also it is to bring an epistemological shift in the water-society relationship. By introducing the Phenomenological Research Methodology, I accentuate the role of individuals in this entire hydrosocial nexus. In other words, it highlights why individuals matter in understanding the water-society relationship. As we have seen individual stands in the milieu of social processes and also encounters bio-physical changes in water or water bodies at first. Only in everyday dwelling of human beings, changes in water and waterbodies first get manifested. Therefore, narrative of an individual's life experiences does not remain limited to being an affect-based narrative; indeed, it manages to highlight how various so-called changes get appropriated in his/her place-specific situatedness.

This attempt to introduce a new methodology can significantly help the hydrosocial scholarship to move away from the prevailing disengaged approach. Even though I have restricted myself in delineating phenomenology as a methodology, it also has the potential to philosophically enrich this scholarship. If phenomenology is adopted as a philosophical bedrock then it can strengthen the hydrosocial framework as far as the exploration of the relationship remains its central theme. I foresee more philosophically enriched version of Phenomenological Research Methodology not only will illuminate the unexplored dimensions of water-society relationship but also it will emphasize individuals' relation to social processes and natural systems which eternally remain in constant flux. Even I see phenomenology could radically change the conceptualization of this framework by rightfully highlighting the role of individuals' experiences. For establishing the same, nevertheless, we need more exploration and further deliberation on this line.

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