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0  INTRODUCTION

0.1  The Eco-System named ‘ Sundarbans’

The historic basin of the Sundarbans forms the southernmost portion of the Gangetic Delta extending along the surface of the Bay of Bengal from the Hugli on the west to the Meghna on the east, covering the districts of the 24 Parganas, Khulna and Bakarganj. The Sundarbans today comprise approximately 10,000 sq km of mangrove forest and intricate water channels fringing the river deltas at the head of the Bay of Bengal, straddling the border between India and south western Bangladesh. It is the only remaining tiger land of the globe where the Royal Bengal tiger occupies the pinnacle of both aquatic and terrestrial food web. Apart from its high biodiversity value, the region is home to several hundred different genera of plant species, several species of fish, a major habitat for wild shrimp, and a major pathway for induction cycling and pollution reduction. Many who have visited and lived in the Sundarbans have been greatly impressed by the dark, mysterious, foreboding nature of the region.
The colonial ecological description of the region has often been a mixture of negativity-awe-curiosity. Pargiter writing in Calcutta Review (1889) noted, “The scenery in the Sundarbans possesses no beauty……few of the forest trees display a handsome bloom….at all times of the year except during the rains….the water throughout the Sundarbans is necessarily very dirty, being full of the mud and impurities brought down from up-country.” At the same time its innumerable creeks and channels, dense marshy forest inhabited by the famous Royal Bengal tiger, its fertile alluvial soil ideal for rice cultivation, its lucrative timber industry and promising pisciculture prospects, its shimmering tidal waters bordered by mangrove trees are like a world of fantasy luring the naturalists, ecologists, historians, spectators and writers alike. In all its beauty and mystery Sundarbans is truly enchanting and captivating.

From the outset one must understand that the Sundarbans is an example of an “endangered ecological system that is highly populated and both fragile and economically valuable.” It in fact serves as a microcosm for examining global dilemmas and development, ecology and competing values. The vegetated tidal
lands of the Sundarbans function as an essential habitat, a nutrient producer, water purifier, nutrient and sediment trap, natural storm barrier, shore stabilizer, energy storage unit as well as an aesthetic attraction. It is truly a very dynamic eco-system of immense relevance, providing a unique opportunity for the interactions among plants, soil, adjoining water and aquatic living resources and helping them to exchange different chemical indices and energy contents among themselves. The region is intersected by a complex network of tidal waterways, mud flats and small islands of salt-tolerant mangrove forests, and presents an excellent example of outgoing ecological processes. As one writer very correctly pointed out that the Sundarbans is one region where events came to be dominated by the actual situation of the wilderness and the fluid riverine atmosphere of the wasteland. Hence it represents a unique eco-system where the interaction between man and nature can be easily observed.
0.2 Rationale

The rationale behind pursuing this particular topic of research lies in understanding the importance and relevance of three most important aspects of the present work, the uniqueness of the natural resources of the eco-system named Sundarbans; understanding the philosophy of Social Ecology and its present day relevance with special reference to the Sundarbans; and finally, placing these aspects within the timeframe of ‘Colonial Period’, an era of great transformation in the history of Sundarbans.

Regarding the unique region i.e. Sundarbans, one must realize that it is a ‘multi-faceted’ land in many ways. It is the largest remaining contiguous block of mangrove eco-system in the world:\textsuperscript{7} a critical and sensitive eco-habitat and a treasure house of rare, exotic and endangered flora and fauna; a region which boasts of peculiar indigenous human communities whose interaction with the ecology has been truly remarkable; an eco-system with the distinction of being one and at the same time a biodiversity – biosphere reserve, a national ecological park and tiger reserve and a sanctuary; and a region where ecological forces have been very important in shaping the peoples
lives, culture, beliefs. But, interestingly, at the same time it is also a region where knowledge regarding its social ecology is scattered, diffused and isolated. This directly brings us to the second aspect of the present project, the philosophy of social ecology and its present day relevance.

By ‘Social Ecology’ we mean the history of interaction between the natural environment (water, soil, forest) on one hand and man and his entire “web of life” (economy, polity, social organization, culture) on the other. It is this aspect of social ecology that suddenly becomes alive in a fragile, dynamic and sensitive ecological setting like the Sundarbans, where the harsh environmental
realities have been adapted by the settlers of this region. Thus at a
time of grave environmental crisis, when so much is discussed
and great value is attached to the philosophy of Social Ecology,
the unique eco-system of the Sundarbans offers the perfect
arena for observing the fascinating role of social ecology in
history. And when all this is placed within a very important time-frame,
the colonial period, the topic gains great relevance and direction.
Indeed it is during the colonial period that Sundarbans witnessed
unprecedented intervention in the form of wide scale reclamation of
forests, imposition of forest rules and regulations, building of ports
and beginning of surveys of rivers and forest boundaries. All
these changed the ’face of Sundarbans’ and had great
ramifications on the fragile ecology of the region. The
transformation brought down by the colonial measures, not only
limited the use of “common resources” in the virgin Sundarbans but
also brought about changes in form of complex economic relations,
deforestation, and extinction of many species of plants and animals.
Initially the colonial administration did not understand the value of
Sundarbans eco-system and thus indulged in wide scale
destruction of forests for purpose of settlement and reclamation,
and when the value was to some extent realized, great damage had been already done. Hence the intervention witnessed in a fragile virgin forestland by the colonial administration left behind a legacy of exploitation and degradation of a unique eco-habitat like the Sundarbans. Moreover, land distribution pattern, forest rights, right of navigation and fishing - in all of these spheres the present carries the legacy of the colonial period. Hence, one can easily understand the pressing need to bring together these important aspects (Sundarbans, social ecology and colonial period) under a single topic of research.

0.3 Existing State of Research and their Limitations

Those working on this unique ecosystem are often placed at an advantage regarding the rich reading materials available. The gazetteers, district handbooks, survey reports, colonial diaries, travel books and novels – all speak on diverse aspects of this intriguing land. No doubt numerous valuable research has also been undertaken on various aspects of Sundarbans. While some of the works are primarily based on the Bangladesh portion of the Sundarbans, others are mostly on the Indian part of Sundarbans. Most of the works so far done focus on any one or more aspects of the region like the
A history of the Social Ecology of Sundarbans: The Colonial Period

political study and development prospects, mangroves or the Royal Bengal Tiger or perhaps the shrimp aquaculture, or just on the ecological processes of the region. Very few cover the colonial timeframe in a chronological order, when important developments in the Sundarbans were taking place and which had deep ramifications for the future. Even if they do cover the period, there is often a brief mention of the important events during the concerned period. Hence, one can say, that there is a lack of any form of macro-study covering the history of social-ecology of Sundarbans during British times. Thus they logically lack in the focus which the present work strives to follow.

In this context we must mention some recent research works like Aparna Mandal’s ‘Sundarbans-an ecological history; A. A. Danda’s ‘Surviving in the Sundarbans, Threats and Responses’, and other published works like ‘Sundarban Mangals’ (ed) by D.N Guha Bakshi, P. Sanyal, K.R. Naskar; Anuradha Banerjee’s ‘Environment, Population and Human Settlements of the Sundarbans Delta’; Kumar Chattopadhyay’s ‘Desperate Deltas - Social Ecology of Sundarbans’ and Sutapa
Chatterjee Sarkar’s ‘The Sundarbans: Folk Deities, Monsters and Mortal’; Annu Jalais’ s ‘Forest of Tigers: People, Politics and environment in the Sundarbans’. Among books in Bengali one can mention Debi Prasad Jana’s ‘Sree-khanda Sundarban’. The work by Sutapa Chatterjee Sarkar begins with reclamation history and survey records of Sundarbans and then abruptly jumps to folk and punthi culture of Sundarbans. One is amazed at the lack of linking the two diverse aspects of Sundarbans history, for which the writing has become largely diffused. Moreover, recently, colonial records are being “re-read” and ‘re-examined’, as in the case of W. W. Hunter whose Statistical Account on Sundarbans ((regarded as the most reliable document of lower Bengal) has been critically reread by Paul Greenough who has traced “beneath the overt Statistical Account with its fixed topical format…. another intuitively assembled version of the Sundarbans” . This has logically meant a total re-evaluation of Hunter’s project. It has to some extent revived interest in re-examining colonial documents pertaining to the Sundarbans. Besides, while there are works on the flora and fauna and ecological aspects of the land, as well as on the settlement history and unique nature–inspired folk culture of Sundarbans, there has been no
significant attempt as yet to utilize these existing knowledge so as to trace the history of social ecology of Sundarbans during the crucial colonial era. In other words, these works have failed to demonstrate how events in Sundarbans have been deeply influenced by its ecology and man’s attempts to tame mother nature has proved disastrous for all.

One cannot overlook the fact that the syllabus and books referred to in the schools and undergraduate levels, has very little or no mention of the history and ecological wealth of this unique ecosystem. In fact one is astonished to see the total neglect of the past glories and present importance of Sundarbans in the books. One has to urgently bring Sundarbans back in focus so that our youngsters feel proud of the region’s wealth and unique bio-diversity as well as its history.
0.4  **Present day relevance**

Among today’s hotly debated topics, discussions on environment, social ecology and global warming, has come to dominate all other topics. Sundarbans is a region which occupies an active cyclonic zone in the Bay of Bengal, where deltaic formation is still underway, where subsidence is a reality, problem of salinity a natural hazard and lack of fresh- drinking water a daily problem. It is also a region which has witnessed the implementation of the first scientific forest management plan in the world under the British rule and is perhaps one of the last surviving tropical deltaic mangrove forests in Asia, the rest having succumbed initially to paddy fields and later on to aqua- culture. This automatically makes one aware of the need to immediately focus our attention and resources on this rich and unique eco- habitat.
0.5 Conclusion: Methodology of Research and Chapter definition

The method of research for the present work is strictly empirical and hence based on the printed primary sources- the gazetteers and district manuals, handbooks, revenue reports and survey plans, forest working plans as well as census returns. Apart from archival data, the project draws heavily from important journals like the Calcutta Review, the Asiatic Society Journal, the Indian Forester, Science and Nature as well as other geographical journals. Besides, for up to date information, human development reports, forest statistics, research on the rise of sea-level and global warming have been widely read and referred. Here one thing needs to be mentioned, that the present research project has not touched upon the important issue of public health, a crucial component in the study of social ecology, mainly because the area of public health is a huge sphere of study and only a separate work dedicated to this aspect can truly do justice to the topic. But apart from this, the present work has striven to understand how simple ecological events as well as natural hazards can have great impact
on the history of a region and how man in attempting to tame and control nature, ends up paying a heavy price for his folly. Wisdom lies in understanding and respecting the ecological realities of Sundarbans and adapting to the harsh environmental conditions. The present research work thus attempts to underline the eternal truth that only through a judicious balance of respecting nature as well as encouraging eco-friendly human sustenance, a sensitive and fragile eco-system like the Sundarbans can survive and prosper.

The present work has been divided into number of relevant chapters. It begins with a chapter on the history of global environmentalism and situating social ecology. It discusses in details the philosophy of social ecology along with its proponents and their contribution, also touches on Ramchandra Guha’s ideas on global environmental history and its recent trends. The second chapter deals with the history of settlements in the Sundarbans. It discusses the existence of civilization type settlement there, its impermanence and reasons for its decay and goes on to explain the role of Muslim pioneering saints or
'Pirs' in the extension of the reclamation process and hence settlements. It goes on to explain the demography of this eco-region during the colonial period in details and any changes in the demography noticed and ends with the impact of harsh environmental conditions on the popular beliefs and folk culture.

The next chapter is on the reclamation history of colonial Sundarbans, which has been divided into three phases, when various attempts were made to clear the jungle and reclaim the soil for cultivation of rice. It also discusses the results of such ruthless deforestation and the difficulties the settlers faced in reclaiming a land under such unfavourable and harsh environmental conditions.

The chapter on colonial surveys of Sundarbans, which was simultaneously carried on along with reclamation, explains the various surveys undertaken in a chronological fashion and the challenges faced by the British surveyors working in a difficult terrain with dangers lurking both on land and water.

Any work on Sundarbans social ecology would remain incomplete without the mention of its forests and rivers. The chapter on colonial forest resource management and conservation primarily
discusses the concept of scientific forestry, its colonial proponents in India, the constitution of ‘Reserved’ and ‘Protected’ forest in Sundarbans and its impact on the use of common pool resources of the forest.

The chapter on water resource management and its utilization deals with ecological events like changes in river courses that can have a crucial impact on history. It also discusses the condition of fisheries, building of embankments and ports during the colonial regime as well as the problem of salinity having an impact on the lives of the people living there.

The present work ends with a discussion on the natural hazards in Sundarbans and its devastating impact on the lives and property of the settlers. This chapter outlines the occurrence of severe cyclones, floods, earthquakes as well as other forms of natural hazards like subsidence and salinity. It also explains colonial disaster management, its limitations as well as the adaptability of the settlers with these harsh natural ecological disasters.

One cannot fail to notice that in all these chapters the unfavorable and adverse ecological realities of Sundarbans have
been shown to have a great influence on the lives of those inhabiting the region and it is precisely this adaptation to the realities of the region that the philosophy of social ecology suddenly finds a new dimension and meaning.
0.6 References

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