

THE TIPPING POINT: AN ANALYSIS OF THE SOCIAL ECOLOGY OF KUTTANAD, KERALA

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We live in a period where climate crisis is synonymous to an epochal crisis. Antonio Gueterres, the UN Secretary General, has echoed the same sentiment when he said that climate change is running faster than us. Climate change is not an entirely novel phenomenon. Climate change and deliberations on it is as old as Theophrastus, the father of Modern Botany [BC 371-287]. He asked 'Is it possible for humans to change the climate?'. He found the answer in deforestation and irrigation [Fleming, 1998]. The world was yet to discover fossil fuels then. Scientists all over the world were aware of the anthropogenic factors behind climate change way earlier, but the dominance of capitalist- development paradigm pushed this school of thought to the periphery. First half of 20th century witnessed two epic wars, which deteriorated the nature and exacerbated the situation .Rachel Carson and her magnum opus '*Silent Spring*' , E.F. Schumacher and his '*Small is Beautiful*' initiated public discourses on climate crisis. Natural science reflected similar spirit, with a group of 1700 scientists issuing 'World Scientists Warning to Humanity' in 1992.

Social sciences in general, and sociology in particular were late to perceive and deliberate upon the climate emergency and the impending disaster. Sociological musings on human-ecological interactions were first propounded by Murray Bookchin. His definition of social ecology constituted the reciprocal relationship between humans and natural environment. There emerged a felt need to understand and theorise the society-environment interaction network among sociologists around the world in the background of numerous environmental disasters in 20th century. Sociologists in USA primarily focused on environmental degradation. European sociologists focussed on environmental reforms. Indian sociology entered into this paradigm in 1920s with Radha Kamal Mukherjee , but a holistic approach was developed much later. Developments in the New World happened in the cold war period. Japan designed a precise framework of Environmental Sociology in the aftermath of nuclear bomb attacks in Hiroshima and Nagasaki. Large scale industrialisation and the resultant pollution led to the institutionalisation of Environmental Sociology in South Korea and China, but it is still in infancy. Amazon rainforest places Brazil in a salient position ,but the elected right wing government of today under Jair Bolsonaro has stalled the development trajectory of Environmental Sociology.

Environmental sociology as a discipline was initially confined to narrow realms of disasters and reforms. The confinement was not limited to the subject matter or focal point, but geographically too. This new paradigm of human – nature interactions was rooted in certain pockets of the western world despite the interconnectedness and integration the world experienced post globalisation .Such reductionism was detrimental to the growth and expansion of the discipline. Pluralities and multiplicities must be accommodated. The integration of places is just a starting point for the discipline to flourish. An integration of thematic areas, methodologies and theoretical articulations are also needed. Without this

integration, to borrow the ethos of Michael Burroway, sociology will always remain a professional and policy sociology and not a public sociology which fosters and is fostered by sundry organic intellectuals .And the fundamental prerequisites for deliberations and extrapolations on social ecology are organic intellectuals.

INTRODUCTION

Kuttanad is a region in south-central Kerala, popularly known as her 'rice bowl'. Literally, kuttanad means 'low-lying land'. She is a beauty to the eyes of the beholder, with vast tracts of paddy fields and coconut palms, innumerable ponds occupied by ducks and the Vembanad lake. Kuttanad is a delta formed by the confluence of Muvattupuzha, Manimala, Pampa , Achencoil and Meenachil rivers , more like a trough, before they drain off to Vembanad lake, Kerala's largest lake and a Ramsar site which is second only to the Sundarbans in West Bengal. The ecological significance of Vembanad and the adjacent trough Kuttanad is accentuated by the Ramsar title she possesses. The popular perceptions and imaginations of Kuttanad is governed by pure aesthetics , her serenity, unique cuisine of duck, fish , freshwater shrimp , local coconut toddy, the cottage coir industry and the famous boat race. The rise of houseboat tourism as a lucrative business resulted in a 'glocalised' experience of the land as well.

Kuttanad is a 900 sq.km.geography [Madhyamam, 2021] spread over Alappuzha, Kottayam and Pathanamthitta districts. It comprises of Changanasserry, Vaikom taluks of Kottayam, Cherthala, Ambalappuzha, Kuttanad, Karthikappally, Mavelikkara taluks of Alappuzha and Thiruvalla in Pathanamthitta district .Kuttanad is today, a land of paradoxes and contradictions .The impact of climate crisis is painfully conspicuous on the lives of the denizens. The recurrent floods have obliterated the ecosystem of Kuttanad and today she is in a precarious state. The people and the culture of a place are never in a stasis, they are dynamic. The old is replaced by the new and the replaced traits become memories. But all memories are not relics of the past , they evolve. Who remembers and why becomes pertinent in the new discourse. The narrative that culture is the story we tell ourselves has gained significance today. This paper is an attempt to sociologically analyse and understand the everyday lives and experiences of the people of Kuttanad, their history, their myths , their power relations , their art forms, their vulnerability, the concrete problems they encounter in the aftermath of the unscientific interventions of both people and the government. This is an attempt for a bottom- up, decentralised approach to understand the social ecology , a deviation from the grand theoretical frameworks.

HISTORY OF KUTTANAD

There are 2 prominent theories regarding the past of Kuttanad. One theory states that Kuttanad was a shallow coastal region along Arabian sea. Gradually, due to morphological transformations, a small bay was formed , rivers flowed into it . The rivers deposited silt and that gave rise to this delta land.

Another theory traces Kuttanad historically as a dense forest , the Khandavavana, which caught fire, which later got engulfed by sea. Later, the sea retreated creating this landmass-Kuttanad. This land was known as 'Chuttanadu', burned land , hence the name 'Kuttanadu'. The places in Kuttanad like Mitrakari , Mampuzhakari, Chennankari , Ramankari , Kainakari

etc. carries with them the word 'kari', meaning burned, testifies this story. Kuttanad delta is classified as *Karappadam*, *Kayal* and *Kari lands* [K.A.Sreejith,2013]

Another story explains the land as ruled by Cheran Chenguttuvan, a powerful Chera ruler. Thus Chenguttuvanadu became Kuttanad. Another discourse identifies Kuttanad with Karumadikuttan, a local Buddhist statue. Vernacular literature on Kuttanad explores a subaltern and much more nuanced perspective.

KUTTANAD- THE GEOGRAPHICAL CONTEXT

From a socio-cultural perspective, one deciphers that the people of Kuttanad share similarities in their food, employment, language and rituals. Hence it is not false to extrapolate that they possess the characteristics of a folk community. Being a folk community does not mean that they are devoid of differences. There are caste, sub-caste, religious differences inherent and internalised. In spite of these differences, the geographical contiguity and idiosyncrasy bestows a certain bond among the people. This phenomenon is called *cultural geography*. There exists a complementary relationship between geography and the identity of the people dwelling there. Hence, Kuttanad is not merely a geographical entity, it is also the people and their culture.

Sangam literature of 300BC has divided the landscape into different categories as per the geographical location. This is called the 'thinai' and there are 5 'thinai's, namely, kurinji, mullai, marutham, neithal and palai. Kuttanad falls in the marutham thinai. It is a marshy, wetland. The geographical identity of Kuttanad is not homogenous entirely, but heterogenous. The wetland has kayal, land below the sea level and above. As the population density increased, there emerged a demand for land. Much of today's Kuttanad is land reclaimed from the kayal [backwater]. When modernity made its inroads into Kuttanad, roads were built levelling the wetland. Concrete structures were built and floods became recurrent. Water became a belligerent force in the lives of the people of Kuttanad. Earlier, water was the centre and people, the periphery. Today, the centre – periphery dichotomy is reversed. This anthropocentric paradigm has obliterated the symbiotic relationship and interaction human society and nature shared. Sociology, as an academic discipline has addressed the human – nature interactions since the beginning of 20th century. A brief overview follows.

THE CONCEPTUAL FRAMEWORK

The concept of *social ecology* by Murray Bookchin stimulated an ecosophical perspective in sociology and the journey was accelerated by the constitution of 'Environmental Sociology'. *Radha Kamal Mukherjee* of Lucknow University pioneered it in India. He was by no means an ecological determinist, but he focused on the dynamics and interaction between humans and their natural environment.

Patrick Geddes, a Scottish social thinker, also the founder of sociology department in Bombay University regarded his works as '*biosophy*', a philosophy of the biosphere. He focused on the necessity of creating decentralised communities in harmony with ecology and proposes the development of new technologies that would foster humane, ecologically balance communities.

Elisee Reclus , a French thinker and geographer sowed the seeds of '*social geography*'. Reclus was an anarchist thinker. He envisaged a free- communitarian society in harmony with nature. Reclus criticised the rise of modern, centralised state, he extended his criticism to capitalism and socialism too. He upheld an egalitarian , free society , living in cahoots with nature.

Another pivotal figure in the development of social ecology was American historian and thinker Lewis Mumford. He built upon Reclus' idea and his illustration of history was a struggle between freedom and oppression. As society progresses , there is the rise of technology , state etc. on the one side and destruction of nature on the other. For Mumford, the dominant moment of history has been 'one long retreat from the vitalities and creativities of a self- sustaining environment and a stimulating and balanced communal life'. Mumford sees the first step towards this in the primordial 'megamachine', the mechanised human labour mass under a centralised authority who built the pyramids. This ancient megamachine has reinvented itself in the modern world in the form of a more complex, centralised, technocratic system, founded on profit motive and fuelled by obsessive consumption. This modern megamachine state disrupts the symbiotic relationship humans had with nature. The remedy for this disruption , as per Mumford , is in rebuilding decentralised , local communities and their idiosyncratic cultures. To him, reclaiming local cultures and communities give depth and meaning to the modern , technocratic world.

Ramachandra Guha ,renowned Indian thinker, has formulated how ecological assumptions have transformed the fundamentals of sociology. To him, sociologists work within a model of society divided into 4 bands; economy, polity, social structure and culture. The economy , in Marxian sense, includes forces and relations of production. Polity includes relations of power and authority . By social structure , Guha means family, kinship , caste etc. Culture embodies forms of collective self- expression , a way of life . Ecology is the 5th dimension he added. This addition is totally in contradiction to the premise on which the founding fathers of sociology like Durkheim and Weber built upon their philosophies. For Weber , social action was the subject matter and for Durkheim it was social facts. Guha justified his paradigm asserting that social facts can be properly understood with reference to the natural environment they live in and sustain. Guha also sheds light on the influence of social class on natural resources. According to him , there has been a growth in public consciousness about forms of environmental degradation in India since 1980s after the Bhopal gas leak and Chipko movement.

Deep Ecology , a philosophy propounded by Norwegian thinker Arne Naess has left an indelible mark on social ecology. It underscores that for humans to lead a life of dignity and value they must radically alter their way of living and thinking . Humans must understand that nature has an inherent value. It is not a mere instrument to satisfy one's needs. It exhorts the transition from anthropocentrism to ecocentrism.

Deep ecology was corollary to the rise of 'Environmental sociology' in the 1970s. William Catton and Riley Dunlap gave birth to a new paradigm, New Environmental Paradigm [NEP] as opposed to the Human Exemptionalist Paradigm [HEP]. They stressed the necessity of sociology adopting NEP, a deviation from the Dominant Western Worldview [DWW] that humans are the 'conquerors of nature'.

Several writings on Marx's early works uphold that Marx pondered on anthropogenic climate change, especially how desertification led to the demise of ancient civilisations. He deliberated on 'social metabolism', the process of human-nature interactions. Labour is the medium of this interaction. The *theory of metabolic rift* of Marx encapsulates the strain in the production system of capitalism which has a deeper ecological imprint.

IMPORTANCE OF KUTTANAD WETLAND

Kuttanad means 'low lying land'. It is a biodiversity spot. The region encompasses vast stretches of backwaters, mangrove borders, paddy fields, - mostly reclaimed from the lake. The average annual rainfall is 3000mm [Sreejith, K.A., 2013]. During the months of June to November, the inflow into Kuttanad exceeds the inflow to Vembanad lake. During the months of December to almost mid-May, which coincide with summer, the reverse happens. There is a net decrease in the total inflow of rivers into Kuttanad. This brings down the water level in Vembanad lake, resulting in a reverse flow from the sea to the inland water body, bringing salinity all over the lake [Koonan, 2007]. Based on the soil, geo-morphology and salinity intrusion, Kuttanad is divided into 6 agro-ecological zones.

1. Upper Kuttanad
2. Kayal
3. Vaikom kari
4. Lower Kuttanad
5. North Kuttanad
6. Purakkad Kari [Indo - Dutch Mission, 1989]

This natural ecosystem is under pressure due to anthropogenic interventions.

THE POWER RELATIONS.

A glimpse of Kuttanad history educates us that feudalism remained the dominant system of production there. Land was the medium of production. Feudal Kuttanad was divided into 4 'nads': Thekkumkur, Vadakkumkur, Kayamkulam and Chembakasserry. Chaturvarna system had deep roots in Kuttanad where the upper castes owned the land and the 'bahujans', mainly Parayas and Pulayas tilled the land. The power relation was one of landlord vs. serfs. The art forms of the Dalits in Kuttanad are loaded with politics and ideologies that corroborate this power relationship. There are folktales on how the zamindars of Kuttanad made the parayas looters. 'Kavarchapaadam', a place adjacent to Kidangara, indicates this. Michael Foucault's theorisation about knowledge and power, about how centres of power construct 'heterotopia / dystopia' can be read in association with Kuttanad's power structure.

Talking about power relations necessitates one to mention the Proletariat uprising in Kuttanad , influenced by the Marxian ideology.

LIFE IN KUTTANAD.

Kuttanad underwent innumerable changes due to the unscientific farming and land conversions. Earlier , Kuttanad experienced 2 floods every year. One due to the flow of saline water from Arabian Sea and another , during monsoon , when water from Pampa, Achencoil and Manimala rivers reach Kuttanad. The interventions made by government and the people exacerbated the situation. Unscientific Thaneermukkam bund and Thottapilly spillway are examples of monumental failures and mismanagement . All the stakeholders, the people and the different governments are equally responsible for the conundrum Kuttanad is today. .

- The transition from food crops to cash crops devastated the ecosystem of Kuttanad.
- This intensive farming along with the increase in population density created a demand for land , thus wetland was converted to dry land. This intervened with the natural cycles and decimated diverse organisms , vital to the ecosystem of Kuttanad.
- The advent of modern farming techniques , especially after the Green Revolution ,instigated the use of chemical fertilisers and pesticides. The unique geography of Kuttanad as a wetland , surrounded by water, coupled with the complacency of the stakeholders let the effluents drain off to waterbodies , thus killing the aquatic lives and polluting the water.
- This results in drinking water scarcity. The proverb ‘water, water everywhere, not a drop to drink’ is true in Kuttanad’s case. The region is surrounded by water, but the quality of the water is deplorable. The chemical intensive farming , tourism and the disposal of waste from nearby urban centres and their own indigenous industries like the coir are the notable sources.
- Extraction of lime from Vembanad lake has affected the wetland . The extraction is unsustainable , and is done for cement industries . If Kuttanad is the rice bowl of Kerala , Vembanad is the ‘fish bowl’ of Kerala. The fish wealth has been lost now.

THE DEVASTATION OF VEMBANAD LAKE.

Vembanad is Kerala’s largest lake, also a Ramsar site, hence a place of international repute. The unscientific cultivation , encroachment of the lake , clearing of mangroves for developmental activities etc. have already endangered the lake. The recurrent floods deposited silt and sediment accumulated on the river bed, reducing the depth of the lake. This enabled penetration of sunlight , facilitating the growth of plants . Earlier, the accumulated silt and sediment were utilised by farmers for building small bunds , hence the depth was kept intact. The cessation of traditional practices resulted in increased salinity in the water body , which then obliterated the aquatic ecosystem and paddy cultivation in Kuttanad. Today , the people engaged in fishing has decreased by 70% and just 25% of households receive fresh

water according to the study by Dr. K.G.Padmakumar. According to the study published by Kerala Pollution Control Board [KPCB] Vembanad lake has presence of DDT , Coliform bacteria and many carcinogenic agents. It is a no brainer to accuse encroachment and waste disposal for Vembanad's decimation. Industrial needs , construction of Wellington Island , multiple fishing harbours are also the culprits. It is not an exaggeration to extrapolate that 3 projects by the government of Kerala and erstwhile Travancore nailed the coffin of Kuttanad: Thottappilly spillway , Thaneermukkam bund and Alappuzha – Changanasserry road [AC Road].

THOTTAPPILLY SPILLWAY.

Thottappilly spillway was the brainchild of Vaidyanathan Commission appointed by the erstwhile Travancore state. This was the first flood mitigation project in post- independent India. The idea behind this spillway was to divert the monsoon water in Pampa , Achencoil and Manimala rivers to Arabian sea directly , preventing its entry to Kuttanad. Thus, the monsoon flood in Kuttanad could be controlled. But the inadequate width of the leading channel of the spillway and the reduced depth due to silt accumulation has made the project redundant.

THANEERMUKKAM BUND.

This is a bund of 1250 m length. The bund was commissioned in 1975 and the idea was to prevent saline water from Arabian sea enter into Vembanad lake and thereby improve the 'puncha' farming. Disruption of the natural cycle killed the aquatic ecosystem. The microorganisms which required the salinity for survival were killed . The reproduction cycle of fishes and diverse aquatic creatures were affected. The absence of a 'fish path' in the bund also added to the deterioration .Prior to the bund construction , 16000 tonnes of fishes were annually caught from the lake . It reduced to 4000 tonnes in just 2 decades[Sreejith ,K.A].This has micro and macro ramifications. The loss of livelihood for many families , the protein deficiency, affecting their health and the health of the state economy . The Kerala Shastra Sahitya Parishad has made a dangerous finding that the entire bund has divided the Vembanad lake into 2 lakes of totally different character. The extent from Kochi to Thaneermukkam has salinity and the extent from Thaneermukkam to Alappuzha has freshwater. The ecological ramification is disastrous.

ALAPPUZHA – CHANGANASERRY ROAD

This is a 24 km road built in 1957, in the low lying areas of Kuttanad. The road required land conversion and this road is a chief reason for the recurrent flooding in Kuttanad today.

HOW TOURISM DESTROYED KUTTANAD?

Tourism was identified a potential area for the development of Kuttanad along with agriculture. The predictions of World Travel and Tourism Council and Oxford Economic Forecast regarding the tourism potential of Kerala gave the fillip. The envisaged model was a 'sustainable project', but the sustainability rested in papers. Tourism gifted extensive pollution to Kuttanad. The human waste and the inorganic refuse from the houseboats , along with the fossil fuel emissions disrupted the wetland. Plastic dumped in the lake are found inside the fishes as microplastics. The doomsday for Kuttanad wetland is not far.

THE THREAT OF DISEASES.

Kerala Health Department conducted a study on the status and magnitude of diseases in Kuttanad in 2009. Communicable and non – communicable diseases surface Kuttanad intermittently. It is not hyperbole to state that every household in Kuttanad today has a cancer patient . Dengue fever, Japanese Encephalitis , Typhoid and other water borne diseases have become the new normal. The unlimited use of chemical fertilisers have resulted in the proliferation of water hyacinths in the lake , decreasing the oxygen level and killing the aquatic beings.

THE MASS EXODUS

The renowned Malayalam writer Zachariah posted the experience of one of his friends' on Facebook some time ago. *'Post 2018 Kuttanad is witnessing a massive demographic transition. 12 out of the 14 villages record 25-50 families migrating every year. As per 2011 census, the population of Kuttanad is 1, 93,007 and the number of families are 47, 416. Around 2% of these have migrated. This is expected to resume unless decisive steps are undertaken. Kuttanad will soon turn a myth for the coming generations'.*

Every disaster makes some people vulnerable . The degree of vulnerability exhibits gender disparity. Women , elderly and children bear the brunt always. Every monsoon evicts 2-3 lakhs of people from their homes to rehabilitation camps in Kuttanad today. There are also instances of people in Kuttanad renting houses in Changanasserry and Kottayam for the 3 months of monsoon.. Contrary to the people residing in other parts of Kerala , camps are not an aberration for the denizens of Kuttanad , but it is the new normal. Floods are not new to Kuttanad, but the intensity and frequency has increased, turning lives in doldrums.

Kuttanad needs holistic and scientific development. No concrete measures have been shaped to control the deluge, but a semi-elevated road is being constructed for the people to escape the floods. 'Save Kuttanad' has become a joke . Cyclones Tautae and Yaas dragged the people to camps recently. Recurrent floods have left the people more fragile, economically , mentally and physically. The people showed resilience in the beginning , but the vicious cycle of poverty exacerbated by the debts from the local moneylenders have tethered them to a suicidal tree.