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# Ecology Is Political: A Review On The Lower Subansiri Hydroelectric Power Project Dam Construction

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**ABSTRACT:**

The uninterrupted erosion, degradation and pollution of our ecology caused by various factors, appear to be a grave concern that the present society needs to face with proper measures for retaining the existence and value of the Human civilization and the Mother Nature as the source of all resources. The constant deteriorating and degradation of our ecology and natural environment have emerged as the major threat to the sustainability of the human society. The rapid changes in the economy of the society are seen as major factor in damaging the ecology. Political decisions and policies formulated by the state apparatus regarding utilization, usage, protection, preservation and sustainability of ecology profoundly draw the attention of political ecology as a separate discipline that focuses on understanding the complexity of development and welfare framed by deep interaction between the state, non-state actors and people, on the one hand and the mother nature on the other hand. Ecological and socio-economicimpacts of large river dam projects highly brings about heated debate and discussion specially in the countries of the south, the construction and operation of large dams considered as prestigious sign of progress and development but also appear as sensitive developmental and environmental issues.

Economic interests of dam-building are linked with negative ecological and socio-economic impacts and repercussions. In this article, it is attempted to review the political ecology in connection with the lower subansiri hydroelectric power project dam.

**Keywords**: political ecology, development, economic interest, ecology, dam-building

## INTRODUCTION:

Political ecology is a subject that developed jointly by the Mother Nature and the human society. Ecology is concerned with environmental study which focuses on the interaction of nature with social forms and human organizations. Political ecology is linked with economy, politics and natural resources. It draws the attention on interdependence and mutual interaction between policies, power and ecology. It reflects a kind of interdependence between politics and ecology. The ecology as a system performs multiple functions for sustaining the human society. There is a

very close link between socio-economic development and appropriation of nature and ecological degradation. Political ecology is concerned with how the ecology is get influenced and affected by political decision making process and how the ecology influences the policies, politics, power and conflict in the society.

However, the present mode of modernization and economic development facilitates the extensive use of natural resources. Thus, the capitalism and liberalized mode of development generates diverse ecological and socio-economic issues. This new paradigm of socio-economic development draws diverse discussions and repercussions in political and social systems. It is seen that the socio-economic and political conflicts concerning with ecology and natural environment are profoundly connected with the rising liberalized economic process leveraged politically by the state apparatus. Undoubtedly, it is the fact that the political decisions relating to ecology on the basis of conflicts and the consequent resolutions often advocate the economic interests. There is no exception to India in the context of commercial oriented ecological policies as far as the natural resources of the country are concerned. Political ecology has been prevalent since the colonial period in India. During the colonial period, the forests, land etc. used as the major source of revenue generation. Still, it is observed that most of the ecological policies have remained as revenue oriented despite of generating holistic plans for curbing and preventing further degradation and aggravation of the ecology as well as the Nature. Since independence, the developmental activities and policies of India have not been dissociated from the liberalized mode that linked with the global economic market, instead of having ecological consequences. In fact, Natural resources of the country are appropriated and exploited intensively for fulfilling the interests of few at the cost of the huge section of less privileged people and ecological degradation.

The downstream of the river Subansiri had continued a biologically controlled healthy ecosystem as well as ecology along with riparian zones and forests as rich hot spot of species, before the construction of 2000 MW hydropower project dam was started. The constructions of 2000 MW lower Subansiri dam would alter the existing ecology that served as energy flow, nutrient cycling and species diversity. Consequently, this alteration of ecology due to the dam-building would heavily affect the important native species, biota, flow variability, water quality, fish diversity, as well as endangered aquatic mammals along with the food production capacity and livelihood security of the people who are dependent on the downstream ecosystems.

Experts assert that total hydropower potential of the country at 150,000 MW out of which 56,539 MW lies in the Arunachal Pradesh of the North East India. National Hydroelectric Power Corporation (NHPC) has already completed the flow diversion of the Subansiri River, as an important part of the 2000 MW lower Subansiri Hydropower project. Moreover, it has constructed tunnels, roads etc. through extensively destructing forests, wildlife and habitats. The dam would heavily impact on the ecology and the ecosystem in both upstream and downstream regions. The dam creates obstacle for stream natural flow and hold back sediments. It is said that dams reduce the flow of river. It minimizes habitats, nutrients and increases pressure on aquatic life of downstream. The dam can make huge changes to the ecology and water ecosystems and its

tributaries. Furthermore, the impacts of the dam can be seen on the downstream flood plain, due to changing in timing and volume of flow of water and nutrients.

This paper makes attempt to reflect the political ecology in the context of the construction and operation of the lower Subansiri hydroelectric power project dam. The dam site has rich biodiversity and agricultural diversity. Non-governmental organizations, pressure groups and along with the civil society have been claiming for a detailed downstream impact assessment study and postponement or removal of the construction of the dam until a proper participatory detailed assessment is executed. It is witnessed that the environment impact assessment report regarding the project's environment clearance from the ministry of environment and forests in 2013 is very worrying.

## OBJECTIVE OF THE STUDY:

The Ecology has been a very comprehensive and concerning subject since the beginning of Human intervention on the natural environment for human wellbeing. The ecology becomes more interesting and attentive when politics reflects its interconnection with the Ecology as broader than the natural environment. This study aims to narrate and reflect the growing Political Ecology and its socio-economic and political outgrowth stemmed from the Hydroelectric Power project dam construction on the Lower Subansiri River basin, in Dhemaji district of Assam.

## METHODOLOGY:

The composition of this article is prepared by the descriptive and analytical methods. Secondary sources of data such as books, articles, websites and journals are adopted to study and narrate the political ecology and its consequences at the downstream emerged from the dam building at Lower Subansiri River.

### Profile of the lower Subansiri Hydroelectric Power Project Dam:

River Subansiri is the largest tributary of the Brahmaputra, originates from the western part of mount pararu in the Tibetan Himalaya. It enters India after flowing for 190 KM through Tibet. It continues its flow through the Himalayas of India for 200 KM and penetrates into the plains of Assam through a gorge near Gerukamukh of Dhemaji District of Assam. Its total length is 520 km and drains a basin of 37000 sq. km. The downstream length (from the dam site to the Brahmaputra River) is nearly 115 km. The area is a global biodiversity hotspot. The left bank of the dam is in Assam and the right bank of the dam is in Arunachal Pradesh where the power generation will be stored.

**Location:** It is located at 2.3 km upstream of Gerukamukh village in the Dhemaji District of Assam. Nearly, 70 Km from North Lakhimpur and it is in the midst of surrounding forests attaching with three reserve forests namely kakoi reserve forest, Dulung RF and Subansiri reserve forest. 4000 Hectares total land used for the project, Height of the Dam is 116 meter. The

downstream covers 115 K.M. The forest areas required for the project estimate 4,039.30 hectares out of which 3.183 ha is in Assam.

**DISCUSSION:**

The Mother Nature is always continuing to be the only source of living life. Nature provides subsistence, meaning and self-definition of who we are. Nature can also be seen as a source of conflict, starvation and strife. It is ubiquitously conceded that nature's resources are for humans to appropriate, aggravate and exploit for mere human well-being.

Political ecology puts emphasis on the inseparable interaction between socio-economic-political, individual interests and the ecology or the natural environment, as the source of all resources for the advancement of human civilization. Earlier the interdependence between socio-economic-political interests and ecological concerns was overlooked. This mutual link between nature and people did not draw much attention to the basic discourse of ecology as well as political dimensions in the society. Political ecology draws enormous attention and significance in the context of India since the colonial period. India is a country that surrounded by natural geographical entity such as the great ranges of the Himalaya, The Thar Desert and the Indian Ocean. Over the years, people from different regions have flowed in and out of it through the northwest, the northeast and across the seas but cultural exchanges have been intense within the boundaries of the subcontinent. India was politically constituted as a state under the British colonial rule only about two hundred years ago.

**Meaning of Ecology:**

The concept of ecology is similar to the term of ecosystem. The ecology is mainly concern with the study of the structure and function of the ecosystem. The ecology has been getting changes in concept and understanding concerning natural world and its relationships. It has been a dynamic discipline which engulfs problems and issues of biodiversity loss, social ecology, environmental ecology, problems of development, population ecology, green ecology, pollution problems, bio-technology and bio-diversity, agriculture and political ecology. In another simple term, ecology implies the study of organisms in their natural home. Ecology is a scientific study that deals with the interactions and the relation among living organism in their natural environment and ecosystem. It can also be understood through three levels such as the individual organism, which refers how the individuals are affected by the environment and in turn how the individuals influence the environment. Second level refers the population and third level refers the community. Thus the term ecology mainly involves these three components. On the other hand eco system refers to a self-regulating community of living organisms that hold interaction with each other and their non-living physical environment and all the ecosystems are inter connected and inter dependent.

However, the concept political ecology occupies broader scope and it is interdisciplinary in nature. For which it draws multiple definitions and understandings. Politics of ecology or political ecology was first coined by Frank Throne in an article 'Nature Rambling: We Fight For

Grass' in 1935. However, there was no systematic definition although there continued extensive usage and aggravation in human geography and human ecology till 1972, when it was revived through ownership and political ecology articulated by Anthropologist Eric R. Wolf. The concept political ecology got popularized after the intensification of environmental awareness in the western world in the late 1960s and early 1970s. Since 1960s, the political ecology has been a separate discipline and a new feel of constant enquiry and social conflict. It has drawing continuous discussion and debate from multiple entities in the society. There different interpretations and understandings on politics of ecology from different eco-political thinkers in their own ways.

It is Linda HershKovitz who states politics of ecology as the politicization of environmental concerns (Ecological politics), a way of understanding environmental issues politically and adopting program for change. Simply it can be said that it is a politicized study of human ecological relation and natural resource use.

Bryant and bailey describe political ecology as a debate which puts emphasis between the state, non-state actors and physical environment.

John Bellamy Foster who articulates that the depth of the ecological and social crisis of contemporary civilization and the need for a sharp reorganization of production for a more sustainable and just world, are inevitably subsided by the ruling elements of society who remain blind and deaf to the real ecological problems of the society.

Madhav Godgil and Ramchandra Guha (1995) narrate politics of ecology as a condition where the state machinery gets used for diverting natural resources for omnivore prosperity. Thus, the higher level political interties always try to drain away all the profits generating from the use of local natural resources and overlook the latten consequences from using the local natural resources. In this context, Ramchandra Guha (2000) articulates that politics from the purview of ecology and environment- has been state centered which has to be restored and community control system must be established in an impartial and just mode. The trend of concentrating power in the hands of fewer elites that drain away the natural resources and decision making capability from the access of the poor and the marginalized people should be redirected and active participatory democracy with transparent decentralized political institutions vested with decision making power should be established.

**Ideology based notions of political ecology**

Marxism describes ecological appropriation, aggravation and related problems as due to expansion of capitalist exploitation of nature and working classes simultaneously. Marxian thinkers reflect that all powerful states behave irresponsibly towards ecology. Development from primitive societies into class societies and consequently into the capitalist society reflects a radical transformation in human relation with nature. Under capitalism, this constant relationship between human and nature is determined basically by the ruling class of capitalist and thus the original interaction between human and nature is broken with severity.

On the other hand, the perspective of liberalized economy moves for declining and weakening the bureaucratic apparatus, size and power of bureaucracy and strengthening private industries and companies that function as a ecologically responsible apparatus.

Gandhian perspective of ecological politics affirms moral imperative grant the ecosystem people that is rural masses for greater access to natural resource base of their own localities through strong decentralized system. Gandhi views that industrialization and over use of natural resources should prevented and the omnivores should not expand their material comforts at the cost of nation's natural resources and human made capital.

Present mode of industrialized economy has been using maximum utilization of natural resources and generating instability in the ecological system. This continuing instability has been creating repercussions in social and political systems like laws, plans and policies.

In the context of the proposed study and political ecology concerning, the construction of lower Subansiri River dam on the border of Assam and Arunachal Pradesh. Since independence, in India, it is emphasized that the pattern of economic development has been in collaboration between the capitalist and the state apparatus in aggravating and appropriating the gifts of nature from the access and availability of the poor. The natural resources including forests, land and water get converted to produce energy and commodities for the rich and the poor are customized to incur the social and ecological consequences mainly in the form of declining natural resources, polluted environment and physical displacement. Majority of India's rural people or ecosystem people depend on natural environment in their own local areas and have minimum access to human made capital that of resources of the organized industry services sector. In Assam, the revenue oriented ecological policies have continuously been affecting its ecology and social relations.

**Colonial legacy of political ecology in Assam:**

During the initial stage of the British rule, the colonialists did not realize any necessity of conservation of natural resources due to its abundance and people were not restricted to usage and easy access to natural resources like forests, land and water. But gradually the forests, land and water and other natural resources used and enjoyed by the people in their own localities went under the state interventions with gradual and systematic take over by the British officials.

Colonial exploitative politics of natural resources, systematic taking over of large amount of natural resources like forests, land and other resources brought about impacts on India society in political, social and ecological dimensions, politically intense expansion of powers of the state generated and these extensive powers of the state over nature led to the deprivation and decline of the rights of ecosystem people over the natural resources in their localities. Socially, it brings about curtailment of easy local access and conversion of traditional pattern of resource usage that led to social conflict between the state and social groups. The construction and intense commodification of natural resources altered the ecosystem of respective region and consequences of ecological degradation affected the local people mostly. Rampant takeover of traditional rights to access and

use of natural resources and various discriminatory and exploitative policies gave rise in hard resistance movements against the state throughout the colonial period which has been still continuing in India after the independence. Due to extensive state intervention over natural resources and state's discriminatory policies that act as the major source of curtailing rights and socioeconomic and cultural security of the people inhabiting and carrying body in the nature for serving the interests of the capitalists class and partial development that does not serve all round development of the people who play role as protector of nature.

**A review on political ecology in the context of the Lower Subansiri River Dam, Assam:**

**Ecological impact and socio political consequences of lower Subansiri Hydroelectric power project dam in Assam:**

The construction of lower Subansiri dam, project has been drawing intense attention along with heated repercussions from different groups, political parties of civil society, for the probable massive socio-economic-ecological impacts of the construction and operation of the dam.

In India, Dams are seen as powerful source of making social changes and economic advancement and development after the independence. Large Dams can be seen as the greatest structures among other built by humanity. Large dams serve as powerful symbol of economic development, modernization, national prestige, social transformation and human's dominance over nature. In India, right after the independence, Nehru considered large dams as the temples of the modern India. In Indian context of economic development, social change, modernization and industrialization, Large dams acquire a sacred place in the policy making process of the nation. At the same time the construction and operation of large dams often draw heated debates, discussion and repercussions between opponents and proponents. Moreover, there arise questions of serving interests through the construction and operation of large dams over the rights of the people to the natural resources and socio ecological impacts affecting both local ecosystem people, over all climate and natural environment.

Production of hydropower is one of the most significant purposes of the construction and operation of large dams. Other advantages of large dams are the seasonal or annual storage of water for human consumption, agriculture, industrial production, flood control and navigation. Although, there is global and national socio economic importance of large dams but large dams have often become the focus of intense debate and repercussion due to its severe ecological and socio economic impacts. It is seen that the advocates of the construction and operation of dams put emphasis positively on modernization, technological progress, and water supply in drought prone regions, hydropower generation and flood control as stimulus for intensifying both regional and national economic development. On the contrary, opponents put thrust on negative ecological and environmental impacts, aspects and high socio economic and political costs of unwilling and unfair resettlement and rehabilitation. In addition to the displaced population, other people including rural people, farmers, indigenous peoples and ethnic minorities residing at the downstream from the dam are heavily affected by the construction and operation of the dams. However, the ecological

imbalance caused by the dam-building and over use of natural resources through the growing capitalism and industrialization has been drawing major attention and issue in Indian ecological politics. Despite being aware of the negative repercussions and consequences of developmental projects like construction of dams, India is bound to move forward due to modern trend of market economy the propelling India to be part of it and gain something rather than to detach and lose.

Fast growing population, immigration, urbanization, industrialization, overgrazing conversion to cultivable lands and other unplanned developmental activities have accelerated the degradation of ecology. In Assam, the revenue oriented ecological policies have constantly been affecting its ecology and socio economic and political environment. In the past few years, the trend of degradation and depletion of natural environment have emboldened the state apparatus for making policies of conservation and sustainability of natural resources. The 2000 MW lower subansiri hydroelectric power project, constructed at Gerukamukh Village in the Dhemaji district of Assam, emerge as a real threat to the freshwater biodiversity of the downstream of the subansiri river basin through diversion of the river, damming and reducing water discharge to the downstream, unique species, natural habitats as well as the river ecosystem are severely threatened. The people who depend on freshwater ecosystems for their livelihoods are equally affected. The people affected by the dam do not directly get benefits and they are denied to access power and clean water.

The north-east of India is recognized as India's future powerhouse in 2001. The central of electricity authority (CEA) India has reported 168 large hydroelectric projects with a potential of 63,328 MW in the Brahmaputra river basin. This contains 22 projects with potential of 15,191 MW in the subansiri river basin.

**Probable negative socio economic and ecological impacts of The Subansiri River dam in the downstream:**

The NHPC has extensively extracted boulders, stones, gravels and sand from the river basin and done construction of building and roads on the left bank of the river. Thousands of workers working in the dam site rely on the forest of the area for daily firewood and food by extensive destruction of vegetation and ecosystems of the area. The river serves as damping ground for muck, sewage debris. The elephant corridor has been halted by fencing in the subansiri reserve forest.

Environmental impact assessment (EIA) was done only up to 7 km downstream of the dam. The report of EIA did not record on ornamental fishes, downstream hydrobiology, endangered species, especially aquatic mammal plantansia gangetica, endemic plant keyia assamica, vulture spotted in the downstream. There was also no record in the EIA regarding the three nearby reserve forests, agricultural diversity and socio economic aspects of downstream dwellers.

Ecological destruction in the dam sites started in 2006 by rampant dumping of muck into the river in upstream and blasting operation for flow diversion of the river. However, downstream impacts mainly caused due to changes in flow regime in the downstream and flow diversion in the upstream and it leads to habitat fragmentation in the downstream due to flow diversion. Other impacts of the dam on natural ecosystems and biodiversity can be seen as impact on hydrobiology

due to the alteration in the flow regime and discharge control by damming of the river. Physical, chemical and biological changes in stored water by damming the river lead to changes in water quality and water temperature that affect many physical, chemical and biological process at the downstream.

Due to changes in flow regime, water quality, there occurs habited degradation which leads to loss of breeding ground for threatened fish diversity and fishery production as obstacle for upstream and downstream migratory fishes. Damming of the lower Subansiri River, impacts negatively in the downstream on agriculture diversity that includes degradation of crop fields due to changes in flow regime, water quality and nutrient supply. There is probability of losing and changing of indigenous rice variety and crops specially the deep water rice.

**Socio-economic impacts of the dam at the downstream:**

The downstream riverside dwellers have continued gaining some economic benefits through fishing, collecting drift wood, commercially valued plants like Imperata Cylindrical, Saccharummunja, Vetivera Zizanoide, Tamarix Diocia and dairy farms etc. which create a balance between human usage and the ecology of the river. The cultivable lands are productive by seasonal flood. Inhabitants of riverside areas use water for drinking, washing, bathing and agriculture to great extent. Now the dam will cut down these economic benefits of the riverine dwellers. The dam would cause downstream fragmentation, degradation, changes in water quality and quantity, loss of species etc. the dam would affect the flood plain residents whose socio-economic condition is related to the river. The dam on the Subansiri River would halt the natural flood cycles leading to widespread destruction to ecosystems of flora, fauna, regional economy and the food production affecting the people depending on the riverside and its flood cycles. This hydroelectric power project will make severe impact on survival of some species that live and rely on areas of the river basin. The dam will also contribute to the global warming through trapping nutrients behind the dam that reduces fertilization of oceanic plankton which keeps carbon dioxide away from the atmosphere. Storing of water in large dams also affects the local climate. There is also potential of occurrence of disease like Malaria nearby areas of dam site, like Lakhimpur and Dhemaji districts of Assam. These areas are Malaria Prone and the formation of stagnant pools in the downstream courses may cause and increase in the risk of the dieses like Malaria, as it thrives in stagnant water.

However, the proper study of environmental impact assessment can play vital role in preventing ecological degradation occurred due to the construction and operation of the lower Subansiri River dam. There are two major pressure groups like All Assam Students Union (AASU) and Krishak Mukti Sangram Samitee (KMSS) and the major regional political party The Asom Gana Parishad (AGP), have been talking bold stand and massive protest against the construction and operation of The lower Subansiri River dam. The issue draws more attention due to sudden rise of political interest and anti-dam protest during the election time. Pressure groups, social and environmental activists have been demanding proper environmental impact assessment, Subansiri river vision, proper plan for ecological restoration of The Subansiri River and it is recommended that there should be pre-dam, present-dam, and post-dam ecological survey of The Subansiri River

and this should be accessible to common people riverine dwellers and researchers. Several resistances in different forms led by different pressure groups along with the local communities of the dam site continues to assert for the postponement and removal of the construction of the dam due to probable extensive ecological damage and negative socio- economic impacts. Heated debates and repercussions between proponents and opponents of the dam have continued to influence the political development and decision making process of the state apparatus.

## CONCLUSION:

The Subansiri River dam should not be the only one that causing massive destruction to the ecology and arising all the problems to the Mother Nature, because except Subansiri there are other dams in the country. Instead of some negative impacts of The Dam, there are also numerous positive aspects in the society, as the dam can play a crucial role in creating direct and indirect employment, contract, supply, transportation, tourism, infrastructure development and other related activities that is connected with the development and welfare of the people. There is also need proper deliberation and environmental impact assessment on the construction and operation of the dam in a fair way that a fair ecosystem and ecology in dam site can be restored. There is need to focus on different development approaches for having good understanding of complexity of large dam debates of the main proponents and opponents of dam-building. The political ecology of the dam unfolds a framework for understanding nature and scope of the repercussions between state apparatus and private technocratic companies on one hand and environmental activists, pressure groups and affected communities on the other. Regarding the removal and postponement of the dam construction there is need proper and fair consideration. Dam construction and operation require transparent information and instance debate by social, environmental activists, affected people and common masses. However, the guidelines of the world commission on dams (WCD) put emphasis on equity, efficiency, accountability, sustainability and participatory decision making. Proper dam designing, site selection like avoiding dam-building in the main stream and proper river basin management approach can play an important role in curtailing negative impacts of dam-building and operation. It can also lead to better balance between socio-economic and ecological accepts.

## REFERENCES:

1. Gadgil, madhav. Guha, Ramchandra. (1995), Ecology and equity: The Use and abuse of Nature in contemporary India, Penguin Books India, New Delhi.
2. Guha, Ramchandra. (2000), Environmentalism: A Global History, oxford University Press, New Delhi.
3. Carson, Rachel. (2000), Silent Spring, Penguin Classics (reprint)
4. Dawan, Ashok. (2008), A Textbook of Environmental Studies, Saurabh Publishing House, New Delhi.

5. Baruah, D., Hazarika, L. p., & Dutta, R. (2009). Probable Downstream Impacts of 2000 MW Lower Subansiri Dam in Arunachal Pradesh of North East India. An international Quarterly scientific Journal, 835-844.

6. Gadgil, M., & Guha, R. (2008). Ecological Conflicts and The Environmental Movements in India. In R. Mahesh , Evironmental Issues In India (pp. 385-424). New Delhi: Parson logman.

7. Jorgensen, D; B.M. Renofalt, (2012), Damned if you do, Dammed if you don't: Debates on dam Removal in Swedish media, Ecology and Society 18(1):18, Http://dx.doi.org//10.57511ES505364-180118.
8. Nursser, Marcus. January, 2003, Political Ecology of Large Dams: A Critical Review, Https://www.researchgate.net/publication/273380663.
9. Tor. A. Benjaminsen, Hanne Svarstad, 2019, Encyclopedia of Ecology, Second Edition, V-4, P-391-396, Http://doi.org/10.1016/B978-0-12-409548-9.10608-6
10. Bandyopadhyay, J., B. Mallik, M. Mandal, & S. Perveen. (2002). Dams and Development: Report on a Policy Dialogue. Economic and Political Weekly, 37(40), 4108-4112. Retrieved April 29, 2021, from http://www.jstor.org/stable/4412689
11. Sarma, P. (2017). Dibang Mega-Dam Project and Probable Displacement of the People of Arunachal Pradesh. Indian Anthropologist, 47(2), 1-15. Retrieved April 29, 2021, from https://www.jstor.org/stable/26494028