

COAL DEPENDENCY IN UPPER ASSAM: A STUDY CONCERNING THE DEHING PATKAI NATIONAL PARK

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Abstract: *Coal is one of the significant mineral resources of the Indian State. Many coal fields in the Indian State are located in some biodiversity hotspots and geographically sensitive areas, viz., national parks, elephant sanctuaries, etc. Therefore, given this, the present study intends to dive deeper into the debates, contestations, and politics over the coal fields in Upper Assam. The Upper Assam area is located in the northeastern region of the Indian State. Recently, the decisions of the Union Government to allow coal mining in some of the ecological hotspot areas have created debates and discussions. Hence, the present study is an exploratory and qualitative research work done with the help of secondary data sources. The main objective is highlighting coal dependency in Upper Assam and the possible environmental implications. The study's findings discuss the role of the Indian State and recent trends, followed by suggestions and a conclusion.*

Keywords: Coal, Indian State, economy, ecological implications, sustainability, etc.

Introduction:

The Indian State, during its post-independence period, followed a conservative path of economic development with a deep focus on economic self-reliance and social justice (Narain, 1980). During British colonial rule, the Indian State experienced massive poverty, economic deprivation, famine, etc., sluggish the nation's growth trajectory. After the independence, the State pursued reform policies to do away with the slow growth syndrome and pushed for economic restructuring. However, despite several reforms, the country experienced severe economic stagnation, which could visibly be seen in the agriculture and industry sectors. Since then, economic development has become one of the primary goals of the Indian State.

During the post-independence period, the Public Sector Enterprises (PSEs), which originated in 1938, began to play a significant role in enhancing the economy of the State. Following this, the Indian State developed the objective of achieving a socialist pattern of society. Concerning this, based on the Industrial Policy Resolution of 1956, public utility services were handed over to the public sector to achieve industrial growth and development (Ganesh, 2001, 17). The Indian planning emphasized the growth and efficiency of the public sector. The PSEs in the country were introduced by the Planning Committee of the Congress Party under the Chairmanship of Jawaharlal Nehru in 1938 (Ganesh, 2001). The Indian State was perceived to be the driving force in achieving economic development and social justice for the country. Furthermore, with the adoption of Five Year Plans in 1950, which initially focused on agriculture and industrialization, the performance of Public Sector Undertakings began to develop efficiently.

Among the PSUs, the coal sector of the Indian State forms the basis for generating capital and national wealth. The Indian Coalfields contribute about eighty-five percent of coal production, and the private owners supply the rest. Among all the coalfields in the country, the State of Assam constitutes a large portion of coal exploration areas in the region. As early as 1852, Assam was a vital coal supplier during the Anglo-Burmese war (Dutt, 2007). Since then, Assam has contributed vast tonnes of Coal to the country's economic development. However, coal mining in the State has not always been stable. Several aspects show how coal extraction can create certain misbalances in the region. Assam is a land enriched with abundant natural resources and habitats where the indigenous communities primarily depend on the environment for their daily

lives. In such cases, coal extraction in some regions may threaten the natural habitats, including flora, fauna, and ordinary people.

Most of the coal reserves in Assam are located in its upper Assam area of *Margherita* and *Ledo*, also commonly known as the *Makum* coalfields. The Makum coalfields are controlled and managed by the North Eastern Coalfields (NEC), a subsidiary of Coal India Limited (CIL). However, certain factors have added tension to the coalfields and ecological biodiversity of the region. The National Board for Wildlife (NBWL) standing committee meeting held on April 17, 2020, presided over by the Union Minister for Environment, Forest and Climate Change, Prakash Javedkar, recommended new coal mining activities in the forest reserve of Upper Assam. This move of the Union Government left behind environmental activists and researchers (Kalantri, 2021). In July 2020, the NBWL stated that the NEC, the Assam-based coal-producing unit of the CIL, had opened up and mined 16 hectares of forest area in *Dehing Patkai* Elephant Reserve (Kalantri, 2021). As such, the State's people and the environmental activists began to protest against the union government's decision. It led to opposition from different corners of the Indian State and Assam. The society claimed that coal mining in the *Tikak* Open Cast Project area would threaten the Saleki Proposed Reserve Forest and the Dehing Patkai Wildlife Sanctuary (now Dehing Patkai National Park). Mining in Tikak OCP traces its autonomy to the pre-independence period of the Indian State. The Assam Railways & Trading Company (A.R. & T) initially mined it. After the independence of the Indian State, the Coal Mines Nationalisation Act 1973 transferred the operation of coal mines in Assam to Coal India Limited for a lease period of 30 years till April 2003 (Coal Mines (Nationalisation) Act, 1973).

Amidst the Covid-19 lockdown period, such a sensitive issue has compelled the NBWL to discuss the matter. Furthermore, one of the primary reasons for the debates and discussions was the Dehing Patkai National Park. The activists claim that coal mining in and around the Saleki Proposed Reserve Forest of the Dehing Patkai Wildlife Sanctuary would impose challenges on the biodiversity of the wildlife sanctuary. There were memorandums filed to the Union and State Governments demanding a complete ban on coal mining in the Saleki Proposed Reserve Forest of the then-Dehing Patkai Wildlife Sanctuary.

Hence, the present study shall discuss the entire matter related to coal dependency in the Upper Assam area and the ongoing conflicts toward environmental protection and preservation from the perspectives of the Dehing Patkai National Park. The paper shall also analyze the State's role, related policies, and recent trends in the problem triggering the ecological sustainability of the entire Upper Assam region.

Objectives:

1. To study the institutional arrangements of coal mining and its implications in the society and ecology of Upper Assam.
2. To analyze the environmental politics in Upper Assam with particular reference to the Dehing Patkai National Park.
3. To study the role of the State.

Methodology:

The study is exploratory in nature and qualitative in orientation. Secondary sources have been used in the study. The data included a detailed analysis of Governmental documents of the Forest Department of Assam, specifically from the Digboi Forest Division, and those collected from the office of the North Eastern Coalfields, Margherita. The research also included information from books, newspapers, reports from various Governmental sites, unpublished Ph.D. thesis and M.Phil dissertations related to the study area, etc.

The present study further employs a historical analysis of facts. It covers the historical analysis of coal exploration in the Indian State from the colonial period (19th century). The study also follows a descriptive and analytical method, as it is helpful in critically evaluating the information and facts of the past, present, and future.

Findings:

Based on secondary data collection, the findings of the study have been divided into two sub-sections, which are as follows:

a) Coal Mining in Assam: Context and Corollaries

Coal is one of the primary energy sources in the Indian State, used mainly for generating electricity. It is one of the most abundant fossil fuels found in various regions of the Indian State, such as Odisha, Chhattisgarh, West Bengal, Madhya Pradesh, Assam, Nagaland, Meghalaya, etc. Assam's coal industry significantly contributes millions of tonnes of Coal to the industrial development of the Indian economy.

The State of Assam is located in northeast India. The State is a land with mountains, rivers, forests, and natural resources. Assam is connected to mainland India through a narrow corridor in "West Bengal that runs for 56 kilometers below the foothills of Bhutan and Sikkim" (*Brahmaputra*, Google, 2021). Assam shares international borders with the kingdom of Bhutan, Myanmar, and Bangladesh. The State has two major valleys, the Brahmaputra valley (also known as Assam valley) and the Cachar valley. Assam is covered with forests and hill areas with varieties of flora and fauna (Barpujari, 2004, p. 1). After the end of the Anglo-Burmese war, on February 24, 1826, Assam became a part of the British colonial empire by signing a peace Treaty of Yandaboo. Since then, Assam has been under the control of British imperialism till the independence of the Indian State.

During British colonial rule, the State assumed several infrastructural and industrial developments. Industrialization in Assam started at a very early age. It initially comprised manufacturing industries, such as small-scale and cottage industries, followed by large-scale industries, such as tea, Coal, and petroleum. The tea industry in Assam traces its origin to the colonial period. It was discovered in 1823 by the East India Company. In 1833, the colonizers began to set up tea industries in the State. With the growing demand for tea in early 1860, the necessity for Coal was found to "meet the demand of coal consequent upon the expansion of tea cultivation and introduction of commercial navigation on the mighty river the Brahmaputra" (Katakey, 2021, p. 1).

The Assam coalfields belong to the Eocene period. During the colonial period, since the northeastern region was known as Assam, the most important coalfields in the State were found in the lower Eocene of the *Garo* and *Mikir* Hills, the Middle Eocene of the *Khasi* Hills, and the Upper Eocene to Oligocene beds of the *Naga* Hills. The Garo and Khasi Hills used to be significant coalfield areas containing good coal quality in huge reserves. Later, these coalfields were extended to the northwestern part of *Tura* in the Garo Hills to Shillong in the Khasi Hills. Some other major coalfield areas of upper Assam explored during the colonial period were *Nazira* (*Dikhow*), at the foothills of Naga Hills, *Jaipur*, Makum with 1,000 million tons, and *Namchik* fields with 600 million tons of Coal (Goswami, 1988, p. 6-7). In 1826, for the first time, Coal was identified by Captain R. Wilcox and Mr. C. A. Bruduring (Wilcox, 1873, p. 5). In the same year, Captain Jenkins (Commissioner of Assam and Agent to the Governor-General in the North-East Frontier) found traces of Coal in the *Berhat* and Jaipur areas of upper Assam (Barpujan, 1958). In 1840, to meet the growing demands, the Assam Tea Company explored coalfields in Jaipur and the other regions of Assam (Barpujan, 1958, p. 300). In 1847, when Steamer Services was introduced in the Brahmaputra, the need for Coal gradually increased. For supplying Coal to the steamers of Brahmaputra, Maniram Dewan acted as the Government contractor. The Government also depended on private contractors to provide Coal to the steamers at Gauhati or *Dikhowmukh* (Sivasagar) (Barpujan, 1958, p. 301).

During the nineteenth century, the British Government attempted to raise the coal industry's demand. In 1882, several coalfields began in Naga Hills, Makum coalfields, and Khasi Hills. The Makum coalfields were the largest producer of coals, followed by the Khasi Hills. The Inner line Regulations had little effort to explore the coal beds of the region. Hence, the then Chief Commissioner of Assam, Colonel Keating, sought to attract private industries (Foreign Political Proceedings, 1880). By the end of the nineteenth century, coal exploration began to rise. Under the initiative of the Assam Railways and Trading Company, coal beds were explored in the Upper Assam hills of *Namdang* (1896), *Ledo New East* (1903), *Tirap & Ledo New East* (1904), *Borgolai* (1909), *Tipongpani* (1924), *Tikak* and *Namdang Deep*. Furthermore, the improvement in the transportation facilities increased the demand for Coal by several tea industries in the Indian State. "At the same time, communication by rail, river, and road improved, which encouraged the establishment of markets" and brought employment opportunities, surplus, and foreign capital to the region (Barpujari, 1958, p. 305).

b) Coal Dependency in Upper Assam and the Dehing Patkai National Park: Interpretation and Illustrations

During the 20th century, exploration of the coal industry led to the overall economic development of Assam. One of the significant contributions of the coal industry was the introduction of steamships, roads, and railways. It also brought industrialization and commercialization to the State, leading to the generation of employment opportunities and one of the State's primary revenue sources.

As per the investigation by the Geological Survey of India (2009), some significant coalfields in the Upper Assam area of the northeastern region are as follows:

- **Makum coalfields:** During 1959-60 and 1960-61, A.C Goswami systematically mapped the Makum coalfield area in Upper Assam. During 1961-62 and 1962-63, A.C. Goswami and A.N. Trivedi did a large-scale mapping of the Makum coalfields. In 1964-65 and 1965-66, A.C. Goswami, P.C. Raj, and P. Majumdar did a Seam-wise estimation of coal reserves in part of the Makum coalfield, and during 1966-67, N.Venkatappaiyya, A.K.Majumdar, A.K. Chowdhury and V.D.Puri of the Coal Division, Geological Survey of India, investigated further.
- **Dilli-Jeypore coalfields:** During 1963-64, J.P. Dias, R.N. Sinha Roy, and B.D. completed large-scale mapping of Dilli-Jeypore coalfields. In 1967-68, A.K. Chowdhury, V.D. Puri, and several others investigated the Dilli-Jeypore coalfields.
- **Mikir Hills:** During the 1950s and 1958-59, the coal beds of Mikir Hills were scrutinized by A.M.N. Ghosh, V.K. Raina, and M.M. Munshi. In 1962 and 1966-67, further scrutinization was done by M.M. Munshi and M.D. Limaye. Later, in 1886 and 1966-67, La Touche and M.D. examined the eastern flank of Mikir Hills, Coal, and limestone occurrences. Limaye.

The coal beds in Upper Assam are mainly tertiary compared to Gondwana coal deposits in *Dhubri* District and adjoining Meghalaya. The Makum and *Dilli-Jeypore* coalfields are the two central coal beds in upper Assam, containing mainly tertiary deposits with maturity and softer than Coal in other parts of the country (Baruah, 2016). After the independence of the Indian State, the Central Government adopted initiatives to develop the coal sector of Assam. The mineral industries of Assam, including the coal sector, got "entangled with the developmental discourse and the growing forces of regionalism" (Baruah, 2011).

The Makum Coalfield of upper Assam has recently been the primary coal contributor to the Indian economy. Most of the coal mining activities of this coalfield are located in and around the ecological hotspot areas of the Dehing Patkai National Park. Such dynamics are causing numerous debates and discussions among intellectuals, environmental activists, media persons, etc. The Makum coalfield is also known as the *Margherita* coalfield. Makum coal mines are located in the Assam-Akranim Basin of the Patkai Hills along the Assam-Nagaland and Assam-Arunachal Pradesh boundaries of the Tinsukia district of Assam (Baruah, 2016). The Collieries under the Makum coal mines are Borgolai, Tikak, Tirap, and Tipong Colliery. The Northeastern Coalfields (a subsidiary of Coal India Limited) is in charge of the Makum coalfields, producing one million tons per annum (MTPA) Coal (*Makum Coal Mines*, Google, accessed on 2022).

However, The Makum coalfields in the present day have been subject to various debates. The Tikok OCP (measuring an area of 98.50 ha) of the said coalfield falls in the Saleki Proposed Reserve Forest (PRF) of the Dehing Patkai National Park. There are claims alleging that coal extraction and illegal mining in the Tikok OCP and Saleki PRF by Coal India Limited pose environmental devastation to the flora and fauna of the said PRF (Katakey, 2021, p. 4).

The Dehing Patkai National Park, also known as the "*Amazon of the East*," is the 7th National Park of Assam. It is one of India's most extended stretches of lowland rainforests (*Dehing Patkai National Park*, Google, 2021). Considering the Dehing-Patkai, the whole belt provides an ecological hotspot for the forests, rare species, and minerals (Coal, oil, etc.) to develop and foster. Since the economy of Assam is agriculture-based, the Dehing Patkai range provides fertile arable land and heavy rainfall suitable for growing crops. The Dehing Patkai range is a habitat for several ethnic and tribal communities like *Singphos*, *Tangsas*, *Noctes*, *Wanchos*, *Khamtis*, *Tai Phakes*, *Kacharis*, *Sema Nagas*, tea tribes, and non-tribal communities like *Ahoms*,

Mattacks, Nepali, etc. (The History of the 'Dehing Patkai' and the Lake of No Return, the State of Assam and the Indo-Burma Border, India!, Google, accessed on 2022).

The Dehing Patkai National Park falls under the Digboi Forest Division of the Tinsukia District, Assam. The Digboi Forest division comprises six Proposed Reserve Forests (PRFs), 15 Reserve Forests (R.F.s), one Wildlife Sanctuary, and one National Park (Katakey, 2021, p. 76). The national park extends across the oil and coal-rich districts of upper Assam - Dibrugarh and Tinsukia. Moreover, one of the oldest refineries in Asia- the Digboi Refinery and the Coal India Limited spreads across the Dehing Patkai Elephant Reserve (Drishti IAS, Google, accessed on 2022). The Dehing Patkai Elephant Reserve is a hub of wild Asian elephants. However, the elephant reserve in the present context has been under threat. Most of the elephant corridors of the Dehing Patkai National park fall in and around human settlement areas resulting in constant human-elephant conflicts and several related issues. From the context of the study area, the primary threat to this elephant reserve is posed by the increasing coal mining processes in the Saleki Proposed Reserve Forest of the Dehing Patkai National park.

Therefore, the study below shall explain further the discussions related to coal mining and its possible threats over the Dehing Patkai National Park.

c) The Question of Environmental Degradation and Analysis of the One-Man Commission of Inquiry, 2021.

Coal has been one of the most dominant energy sources for about 300 years. The sustenance of modern industries largely depends on coal production. Recently the development versus environment debate has drawn the attention of intellectuals, politicians, environmental activists, and the general public. In developing countries like India, development-induced displacement at the cost of environmental degradation has been a debated concern. Considering the State of Assam, the State is a land blessed with rich forest resources. However, in a rush to achieve rapid industrial growth, protection and preservation of forest lives are somewhat lagging.

The Union Government's decision on the privatization of coalfields and the allegations about coal mining in the Saleki Proposed Reserve Forest of the Dihing Patkai National Park led to the appointment of the One-Man Commission of Inquiry 2020. The then Chief Minister of Assam, Sarbananda Sonowal, set up the One-man Commission of Inquiry committee under former retired Justice of Gauhati High Court Justice Brajendra Prasad Katakey (Zaman, 2020). The Governor of Assam constituted the One-man Commission of Inquiry on August 18, 2020, vide Notification No. FRS 1712018/272. The Commission was formed to exercise the powers conferred under section 3 of the Commissions of Inquiry Act, 1952. The objective was to enquire into any violation of the laws related to the "forest, wildlife, mining, and environment during the last 20 (twenty) years while carrying out any mining or any other activities by any corporation, organization, or individual" in the Saleki PRF and Tikok OCP (Katakey, 2021).

Based on the investigations made by the Commission, the findings are:

- a. Non-implementation of the Mine Closure plan by the NEC, CIL, rat-hole coal mining, forest land encroachment, elephant corridor obstruction, etc.
- b. In the field visit by the Commission to Ledo OCP, they noticed that although Ledo OCP is closed, the pit was not filled up properly. The officers of the NEC, CIL, have stated that due to the non-implementation of the Mining Closure plan, the pit dumped is causing soil destruction, environmental pollution, and risk to human life (Katakey, 2021, p. 213-216).
- c. During the field visit to Borgolai Coal Mine (also known as "Stone-Drift Mine"), the Commission noticed that official mining had been closed in June 2010. However, the mining site has not been closed properly. The mouth of the stone drift is covered with tree branches and bamboo sticks, for which the water coming from it is highly toxic, causing pollution to nearby streams (Katakey, 2021, p. 210-211).
- d. Based on the details furnished by the Divisional Forest Officer of the Digboi Forest Division and the field visit, the Commission noticed encroachment of forest land in the Saleki Proposed Reserve Forest by the Tea Gardens. They have also seen the encroachment within the R.F.s and PRFs without the approval

required by the 1980 Forest Act. Further, no action has been taken by the State Government to stop such illegal activities (Katakey, 2021, p. 243).

- e. In the field visit made by the Commission to the nearby areas of the proposed Dihing Patkai National Park, they noticed the existence of the Oil Collection Station (OCS) of Oil India Limited. The Commission also found abandoned drilling sites and a few non-operating wells of the OIL in the said Reserve Forest. The Commission also noticed an abandoned drilled site within the habitat of the state bird of Assam, the White Winged Wood Duck (Katakey, 2021, p. 244).
- f. The Commission has further noticed continued illegal coal mining by unknown persons/organizations. They have also mentioned the involvement of NEC in such activities since 2003 without a valid registered lease. The mining areas include the forest lands without approval under Section 2 of the 1980 Forest Conservation Act of the Indian State ((Katakey, 2021, p. 276).

The Commission, in the report, concluded that there were contentions between the environmental activists and the CIL authority (Katakey, 2021, p. 224). The body recommends investigation by independent agencies, such as the Central Bureau of Investigation, which the State cannot control.

From the above analysis, it can be stated that the One-Man Commission of Inquiry, 2020, headed by Justice Brajendra Prasad Katakey, has played an active role in inquiring about contentions between the NEC (CIL), the Digboi Forest Division department, and the petitioners. The Commission is holding the State responsible for such an issue. It states the passive role of the North Eastern Coalfields and the active role of the State Forest Department. However, if the report is analyzed critically, it can be stated that holding the CIL authorities responsible is not justified solely without proper evidence. It is because corruption and illegal activities have been common in the era of the politico-bureaucratic nexus. A Public Sector Undertaking is the State's asset. Although the Assam state government has constituted the Commission of Inquiry, however State itself is directly or indirectly involved in such activities for which the investigation has been inquired.

Despite all these, the One-Man Commission has put forth some vital information regarding illegal coal mining and the ecological challenges faced by the Dihing Patkai Wildlife Sanctuary. This report also somewhat contributes to upgrading the Dehing Patkai Wildlife Sanctuary into Dehing Patkai National Park on June 9, 2021.

d) Role of the State

The new lease of coal mining in the Dehing Patkai Wildlife Sanctuary, as approved by the National Board of Wildlife, Government of India, has caught society's and the State's attention from every corner. The role of the State in this ongoing sensitive issue is of great importance. The State has to play its part concerning two poles. On the one hand, lies the Northeastern Coalfields, a Public Sector Undertaking and a subsidiary of Coal India Limited, one of the most crucial energy-generating and revenue-earning sources for the Indian economy with substantially increasing demand in the global market. On the other hand, there lies the protection and conservation of forest land, including its species (flora and fauna). In such a situation, the State is always assumed to play a balancing role.

Regarding the entire situation of coal mining in the forest land of Upper Assam, the Indian State, including the Forest Department, has seemed to play a very proactive role. Before the Notification from the NBWL, the Assam Forest Department imposed a penalty of Rs. 43.25 Crore on CIL. The Forest Department claimed that between 2003 and 2019, the CIL had been carrying out illegal coal mining inside the forest of the Dehing Patkai Elephant Reserve (Das, 2020). The forest department has also filed a First Information Report (FIR) at the Sub-Divisional Chief Judicial Magistrate's Court in Margherita in the Tinsukia district. The FIR was filed against the officials responsible for illegal mining in and around 73 hectares of land inside the Dehing Patkai Elephant Reserve Forest between 2003 and 2019 (Press Trust of India 2020). However, the officials of the CIL do not initiate any action regarding giving any penalty amount to the Forest Department of Assam. The Union Government, on the one hand, asked the Additional Principal Chief Conservator of Forest to draft charges against Divisional Forest Officers and Range Officers of the region concerned from 2003 onwards for initiating departmental disciplinary action against them. On the other hand, the Union Government has

requested the State Government to approach the Coal Ministry to take disciplinary action against the CIL officials (Press Trust of India 2020).

Moreover, the NBWL, in its second Standing Committee meeting held on April 2020, under the Union Ministry of Environment, Forest and Climate Change, refused to accord permission for mining operations unless it fulfills a set of 28 conditions, including payment of the penalty amount raised by the Assam Forest Department (Press Trust of India 2020). The NBWL also stated that measures should be adopted to preserve the rich biodiversity of the Saleki Proposed Reserve Forest. Professor R Sukumar, NBWL member and Representative from the Wildlife Division and the State Chief Wildlife Warden, India, has stated that "it would be prudent to preserve the basic integrity" of the proposed forest area (Press Trust of India, 6 May. 2020). He added that the forested hill slope is a "part of the Dehing Patkai Elephant Reserve, adjoining good forest area in the neighboring state of Arunachal Pradesh, which includes Deomali Elephant Reserve with a sizeable population of elephants" (Press Trust of India 2020).

Meanwhile, for further consideration, the NBWL Standing Committee asked the CIL to submit documents regarding broken and unbroken areas of the forest used for coal mining activities. The General Manager of the NEC stated that since 1884, over 130 years, mining in the Tikok area has been going on. Till 2003, 98.59 hectares of mining within the minefield did not require any forest clearance, and till 2012 only 57 hectares were broken. He stated that the work was going on because the State Government anticipated giving permission. General Manager further stated that in 2013 the "Forest Advisory Committee recommended work with certain conditions, including some to be fulfilled by the Assam government" (Press Trust of India 2020). The NEC had alleged the State Government for delaying the lease renewal process and that the damaged area was part of the lease land mining activity, which did not include the forest area.

The Assam Government, following the PILs filed by the petitioners, directed the State Forest and Environment Minister Parimal Suklabaidya to initiate an inquiry. Suklabaidya, after a field visit in May 2020, stated that coal "mining has been stopped in October, 2019 and till date no final approval has been accorded" (Das, 2020) to the NEC, CIL. For Stage II clearance, the compliance report will be placed before the Union Government when the CIL and the Forest Department must fulfill 28 conditions. He added that until Stage II clearance, the State Government would not allow and approve any coal mining by the NEC at the cost of the environment (Das, 2020). Based on this, the NEC temporarily suspended the coal operations in the region. In the meantime, the then Chief Minister of Assam, Sarbananda Sonowal, directed the State Forest Department to initiate steps and consult with the Union Ministry of Environment and Forests to upgrade the Dehing Patkai Wildlife Sanctuary into Dehing Patkai National Park. On December 13, 2020, the Government of Assam upgraded the Dehing Patkai Wildlife Sanctuary into a national park. On June 9, 2021, the Assam Forest Department officially notified it as Dehing Patkai National Park (*Dehing Patkai National Park*, Wikipedia, accessed in 2022).

Hence, the Indian State, specifically the State of Assam, has played a balancing role in resolving the entire matter. By allowing inquiry into the issue of illegal coal mining and its implications on the environment, the State Government has tried efficiently to find out the leading cause of the problem. Furthermore, the decision to convert the Dehing Patkai Wildlife Sanctuary into a National Park has ensured proper protection and preservation of the entire forest area and its species by the Union Government. The decision has also benefited the NEC, CIL, as the coal mining in the Tikak OCP and Tirap OCP, which was suspended, was restored, considering the forest boundaries.

Recommendations:

Based on the fundamental research, the study has tried to remark on some recommendations, which are as follows:

- a. The North Eastern Coalfields are an essential asset in the hands of the Indian State. The Indian State is currently in a developing phase. Therefore, increasing coal production is necessary to ensure economic growth and stability despite the criticisms. To ensure the smooth running of coalfields, the State should play a proactive role. The State should investigate the matters related to granting mining leases to the Coal

India authorities. Also, the Government should take proper measures to reform the old mining leases, as the state's economy and environment are at the pace of continuous change and development.

- b. The state of Assam, as mentioned above, is a hub of natural resources and forest lands. The state has significant industries, such as Coal and Oil, located in and around forest lands and human settlement areas. The PSU location often conflicts between the authorities, the forest department, and ordinary people. In such cases, the PSU, before initiating any project around the forest lands and human settlement areas, should take prior consent and approval. They should pay attention to providing compensation and resettlement to those affected by their projects.
- c. The available literature and field visits show that most of the coal exploration and oil drilling sites are located in and around the PRFs and R.F.s of the Dehing Patkai National Park. After completing the projects, when these sites are left abandoned, it creates implications for the land and causes environmental pollution affecting flora, fauna, and human lives. To combat such a situation, the concerned authorities of the coal and oil departments should take proper action in dumping the coal and oil exploration sites. Instead of leaving the abandoned area openly, it will be beneficial if it is covered up by planting trees or building boundaries around the forsaken land, whichever is suitable. Doing so will restrict the entry of locals and animals into those lands, which may affect them. Also, planting trees can provide a suitable habitat for humans and the flora species, contributing to a balanced ecosystem.
- d. The North Eastern Coalfields in Upper Assam generate employment opportunities. Employment opportunities have contributed to human development ensuring sustainable livelihood. Therefore, the people living around, instead of directly protesting and opposing the developmental activities of the coal India authorities, should first consult the officials about the matter. As the coal operations in any region are also responsible for the development of the area so, instead of blindly judging based on news spread in the media or any other sources, the protestors and petitioners should first take the matter to the Government or concerned authorities of the PSU for proper investigation.
- e. The Dehing Patkai National Park is surrounded by Coal and Oil fields, leading to never-ending conflicts and debates. To combat this, the Forest Department should properly demarcate the forest boundaries. The PSU authorities should consider the forest boundaries before initiating any project around the forest lands. Developmental projects are necessary for increasing the production of resources; however, while starting any exploration or drilling sites, the animal corridor and the forest lands should be prohibited. If used, the Forest Department should take proper action to preserve and protect the forest lands.
- f. Globally, since the demand for Coal is increasing, the present study also suggests that the Indian Government should implement partial privatization (also known as the Public Private Partnership model) over Coal India Limited. Doing so shall benefit the NEC, CIL and contribute to the region's economic development. Since the PPP model means collective ownership of both the public and private owners, there are chances of transparency in the utilization of resources and more effective public resource management. There are possibilities that partial privatization may also contribute to generating employment opportunities for the people living in and around the Coal exploring areas.

Conclusion:

Since its inception, the North Eastern Coalfields has been boosting the region's local economy. Over time, the coal industry is undertaking massive coal production as its demand in the global economy is increasing. As a result, coal exploration processes are also on the verge of rising, for which the NEC is expanding its mining activities. Mining activities' expansion creates specific implications for the region's forest lands. Also, the proposal of the Union Government to privatize Coal India Limited is creating fear and doubts in the people's minds.

The present study was undertaken to dive deeper into the ongoing geo-political matter. Therefore, the study's conclusion draws on the note that the Coal fields of Upper Assam and the Dehing Patkai National Park serve as valuable assets in the hands of the Indian State. Moreover, to meet the growing demands, there are possibilities that the privatization of Coal fields (which is currently not applied to the NECs) might be

implemented soon. It will help boost coal production. Furthermore, it will be beneficial if the policies of the Indian State strive for a balance between PSU management and environmental consequences. Doing so will help in creating a sustainable world for the near future.

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