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Exploring Environmental Justice And Legal Challenges In India And ASEAN Cross-Border Energy Integration

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Abstract:-
As South and Southeast Asian countries unify their regional energy networks to meet increasing energy demands, massive transnational schemes such as hydroelectric dams and state-to-state transmission lines have raised serious issues of environmental justice, community displacement, and absence of public engagement. This research examines the legal and institutional framework of such projects in India and the ASEAN (Association of Southeast Asian Nations), focusing on whether they offer transparency, sustainability, and accountability in the environmental and social senses.

The study investigates important bilateral and regional agreements like the India-Nepal Power Trade Agreement, the India-Bhutan Hydropower Memoranda of Understanding, and ASEAN Power Grid. The study also engages with relevant Indian legal frameworks, in particular the Forest Rights Act of 2006 and the Environment (Protection) Act of 1986.

Based on a review of a number of case studies, this paper identifies deficiencies in legal systems, for example, the lack of cross-border Environmental Impact Assessments (EIAs), weak participation of all the stakeholders affected by such projects, and weak grievance redressal mechanisms. This paper argues that current legislations and regulations are weak and do not deal with local and environmental concerns that cross national borders.

The paper also proposes reforms like binding cross-border EIAs, environmental justice clauses in treaties, community rehabilitation and redressal and regional oversight arrangements to foster a more equitable and sustainable model of energy governance in the region.

Key words:-
Environmental justice, regional energy governance, transboundary environmental impact assessments (EIA), and legal reform in South and Southeast Asia.

Introduction:-
The creation of regional energy corridors and chains of interdependent energy infrastructure that span national borders becomes a growing strategic necessity for South and Southeast Asian nations. The corridors include transnational power grids, gas pipelines, and hydropower generation plants. The primary aims of these projects are to promote energy trade, boost energy security, and ease the achievement of sustainable development goals. These projects, including the India-Nepal Power Trade Agreement, the India-Bhutan Hydropower cooperation, and the ASEAN Power Grid, are prime examples of this new pattern of regional cooperation, which provides economic dividends as well as promotes political stability through energy interdependence.

The countries are highly committed to the attainment of development goals; however, concerns about the social and environmental impacts of such enormous projects are on the rise. Such enormous projects have a tendency to displace large numbers of forest dwelling indigenous and rural populations, leading to the loss of their traditional livelihoods, ecological degradation, and lack of adequate public participation. Large numbers of affected groups are not consulted, and there are no adequate legal channels through which to appeal or have an impact on the decisions regarding the projects. Such issues have the tendency to raise fundamental questions related to environmental justice, emphasizing the necessity of fair treatment and effective participation of all the affected people, regardless of their background, in environmental decision-making.

This paper analyses and explores the answers to these questions by critically examining the legal mechanisms that governs the regional energy projects in India and ASEAN (Association of Southeast Asian Nations). It focuses on whether these frameworks is adiquate to protect the rights of affected communities and ensure environmental accountability. The study analyzes bilateral treaties such as the India-Nepal Power Trade Agreement and India-Bhutan Hydropower MoUs, along with regional initiatives like the ASEAN Power Grid. It also examines the domestic and environmental and land acquisition laws that are implemented in the countries.

The objective of this study is to identify the institutional and legislative loopholes that now stand in the way of environmental justice in regional energy integration. This article seeks to suggest a sequence of legal and governance reforms toward more transparency, inclusivity, and environmental accountability in regional energy initiatives. The study therefore seeks to raise the focus from a state-centered, top-down energy diplomacy to a people-centered, participatory diplomacy.

A Review of Energy Project Implementation:-

In response to their growing energy needs and to facilitate regional integration, South and Southeast Asian nations have entered into a series of large transnational energy projects. These projects aim to increase energy security; however, they have simultaneously also created serious concerns about environmental issues, forced population displacement, and the lack of adequate public consultation and participation. This part lists the major ongoing projects of India and the ASEAN region and the regulatory regime that covers these projects.

- Arun-III and Upper Karnali Projects (India–Nepal)

The Power Trade Agreement (PTA) between India and Nepal, signed in 2014, has opened the door for India's growing entry into Nepal's hydropower sector. Indian company SJVN Ltd is constructing the Arun-III Hydroelectric Project of 900 MW power in the Arun River. As India has bought rights to part of the electricity generated and profits therefrom, construction is in progress.

Likewise, the Upper Karnali Project (900 MW) is being developed by the Indian company GMR Energy Ltd. The project, as of now, remains in delay, but preliminary activities and consultations with stakeholders have already been initiated. The projects are based on the bilateral PDAs and sectoral guidelines.

But neither the Indian nor the Nepalese legislation requires any transboundary Environmental Impact Assessments (EIA). India's EIA Notification, 2006 and Environment (Protection) Act, 1986 apply only in India. Nepal's EIA policy is internal and does not take into account the transboundary impacts of these projects. Thus, there is no legislation requiring the estimation of the environmental hazards to Indian areas impacted by Nepali dams. The Indian citizens to be impacted by these projects are also not taken into account.

- Mangdechhu Project (India–Bhutan)

The 720 MW Mangdechhu Hydroelectric Project commissioned in 2019 in Bhutan is another such case in point. The project was developed under the terms of the India–Bhutan Hydropower Cooperation Agreement. Assisted by India, funded and constructed, the project results in seventy percent of the generated power being supplied to the Indian market.

The legal support is founded on principal bilateral MoUs and project-specific agreements, which focus on the strategic collaboration but offer little room for any public participation. Despite the national laws of Bhutan mandating EIAs, no particular requirement exists to consider transboundary environmental effects on the Indian ecosystems. There is a loophole in the overall ecological evaluation and consultation because Indian environmental legislation, such as the Forest (Conservation) Act 1980, is limited to Indian borders.

- The Laos–Thailand–Malaysia–Singapore Power Integration Project (LTMS-PIP)

The LTMS-PIP commenced commercial operation in 2022. The project is the first multilateral electricity trading framework of the ASEAN Power Grid (APG) program. Laos can export a total of 100 MW of electricity to Singapore via Thailand and Malaysia utilizing existing interconnection facilities.

Power generation is mostly derived from hydroelectric schemes in Laos, namely the Nam Theun 2 Project (NT2), which is supported by the World Bank and the Asian Development Bank (ADB). Despite the need for social and environmental safeguards, application of pertinent legislation has been subjected to severe criticisms. There is currently no binding ASEAN framework to govern transboundary environmental damage along with the follow-up compensation process. Resettlement is also a point of contention.

While there are independent national laws in Thailand, Malaysia, and Singapore for local EIAs, there is no single legal framework for ASEAN for any cross-border EIAs or stakeholder participation. The ASEAN Memorandum on the APG (2002) allows the technical cooperation but has no environmental governance tools or law.

Legal analysis of the Treaties, MoUs, and legal Frameworks Regulating Regional Energy Projects:-

The development of transboundary energy projects in South and Southeast Asia has been enabled through a combination of institutional and legal frameworks. These institutions vary from domestic environment and energy laws, bilateral agreements and MoUs to international regional mechanisms like those of ASEAN. The laws are a good framework for the governance of the transboundary projects but typically do not ensure social justice, environmental sustainability and participatory decision making. The following section critically analyzes these instruments with a view towards their strengths and weaknesses identification.

- The India–Nepal Power Trade Agreement (2014)

The India-Nepal Power Trade Agreement of 2014 is a landmark for energy cooperation in South Asia. The agreement defines the institutional and legal framework required for bilateral electricity trade between India and Nepal. It also enables cross-border electricity trade among all stakeholders, including public, private, and government sectors of the two nations. In addition, the agreement positively encourages investment in activities like hydropower generation, transmission infrastructure development, and power grid interconnection between Nepal and India. This cooperation is the key to promoting economic growth and energy security, particularly for Nepal, which is a landlocked country with an estimated 80,000 MW of untapped hydropower potential.

From India's perspective, the agreement allows it to access clean and renewable hydropower, particularly for its northern states, and improve the availability of energy. The agreement allows both countries to benefit from seasonal power collaboration and improve regional power grids by allowing space for trading power during peak demand periods. It also promotes private sector participation, which is required to boost investment capital, skills, and efficiency in operations. Although economically and strategically valuable, the agreement lacks firm provisions for environmental and social safeguards. It does not mandate cross-border Environmental Impact Assessments (EIAs), which is a significant legal and environmental lacuna given that hydropower schemes generally have transboundary impacts, such as alterations in the river flow, sedimentation regime, fisheries, and interference with biodiversity. For instance, individuals who reside downstream in India, particularly in Bihar and Uttar Pradesh, witness variability in the availability of water or unexpected flooding caused by dam operations conducted upstream in Nepal. In addition, both countries have not set enforceable public participation requirements or grievance procedures for the affected people. In terms of historic and current deprivation and displacement of livelihoods caused by large dam projects in the region, this absence of controls is most critical.

Also, the lack of integrated data repositories and coordinated monitoring systems contributes to the challenge of managing and mitigating ecological risk in transparent and cooperative ways. Lastly, the 2014 India-Nepal Power Trade Agreement is a robust economic platform for bilateral energy cooperation between the two countries; still, to secure actual sustainable and equitable energy integration, it needs more environmental protection measures and policies with stakeholder engagement. India–Bhutan Hydropower Agreements

- India–Bhutan Hydropower Agreements

India-Bhutan Hydropower Arrangements are among the most active and longest-standing models of South Asian regional bilateral energy cooperation. Underpinned by mutual trust and strategic partnership relationship, the arrangements are founded in a series of Memoranda of Understanding (MoUs)- eventually culminating in the 2006 Agreement on Cooperation in Hydropower Development. India has so far funded, designed and developed major hydro power projects in Bhutan, such as Chukha (336 MW), Tala (1.020 MW), Kurichhu (60 MW) and the more recent Mangdechhu (720 MW) hydroelectric schemes. Most rely on what can be characterized as a build-and-transfer model enabling India to develop, finance, and construct the schemes in the first place, and transfer ownership to Bhutan in some future point in time while offering ongoing electricity exports back to India.
The agreements have been generating significant dividends to both. Bhutan continues to earn revenues from the sale of electricity-hydropower contributes more than 30% to Bhutan's GDP and over 40% of government revenues-and India benefits from access to clean renewable power in accordance with its growing power needs especially in the northern grid. Capacity building and technical training and infrastructure development are also commitments, for building up Bhutan's local capabilities for hydropower management.

Despite these dividends, the agreements remain very much infrastructure- and finance-focused, with minimal regard for environmental sustainability and social inclusiveness. Bhutan's environmental legal regime itself mandates Environmental Clearance Certificates (ECCs) for hydropower projects, with mitigation of ecological effects envisioned. These, however, are strictly domestic processes that do not extend to transboundary ecological appraisal. There is no legal obligation to determine or mitigate potential downstream effects in India, such as alterations in river flow, sedimentation, or flooding, especially in ecologically sensitive zones of Assam and West Bengal.

Further, local Indian communities potentially affected by Bhutanese dam operations-albeit in this instance, in particular, during unplanned water releases or accidental spill-over-have no official role or voice in Bhutan's decision-making or environmental clearance process. This lack of cross-border stakeholder consultation is a serious governance deficit, especially in the context of climate change rendering river systems more variable and downstream populations more vulnerable.

There is also a lack of bilateral institutional arrangements for co-monitoring, data sharing, or conflict resolution of hydrological adjustments. Compared to certain international regimes, e.g., the Mekong River Commission or the Indus Waters Treaty, the India–Bhutan hydropower regime currently lacks an official transboundary environmental management mechanism, which would have more sustainable and fairer outcomes.

Indeed, as much as the India–Bhutan Hydropower Agreements are a regional model of energy diplomacy and development cooperation, their environmental blind spots i.e., cross-border impact assessment and participatory governance highlight the need for complementary legal instruments. These must enshrine the monitoring of the environmental, public participation, and collaborative risk management in order to ensure hydropower expansion with regard to environmental justice and intergenerational equity norms.

- ASEAN Power Grid (APG) MoU (2002)

ASEAN Power Grid (APG) Memorandum of Understanding (2002) is a pillar in the vision of a Southeast Asian integrated electricity market. Proposed by ASEAN member countries under the ASEAN Ministers on Energy Meeting (AMEM), the APG MoU is to reach a multilateral agreement to facilitate cross-border electricity trade through interconnecting power transmission lines. The project is motivated by the region's growing energy

demand, variations in resource endowments, and regional energy security. It aims to take advantage of the potential of hydropower-rich countries such as Laos and Myanmar by linking them with high-demanding economies such as Thailand, Malaysia, and Singapore, thereby making regional load balancing and economic optimisation of electricity resources feasible. The APG strategy gives the highest priority to the construction of cross-border interconnection schemes, the coordination of grid and technical standards, and the encouragement of private investment in transnational power facilities. It has yielded results in a series of tangible accomplishments, including bilateral and trilateral interconnections like the Laos–Thailand–Malaysia–Singapore Power Integration Project (LTMS-PIP), which commenced commercial operation in 2022, a milestone event in multilateral electricity trade in the region.

Despite its ambitious vision and technical achievement, the APG MoU is policy-oriented and non-binding. It is a policy framework, not a treaty. It has no hard commitments to environmental protection, the rights of indigenous and local people, or harmonized social impact assessments. All member states enjoy full autonomy in environmental management, and the effect is scattered and incoherent regulatory regimes across borders. This is creating huge governance voids in projects like the LTMS-PIP, where hydropower development upstream in Laos affects riverine and ecological processes downstream in countries but there is no ASEAN-level institution to enforce ASEAN-level harmonized standards for Environmental Impact Assessments (EIAs) or resettlement procedures.

In addition, the APG system has no regional grievance redress mechanism or cross-border public forum for consultation, offering local and indigenous peoples few avenues for raising concerns or seeking redress in case of environmental harm or displacement. The absence of a central ASEAN body to monitor environmental compliance, audit social impacts, or implement safeguards further undermines the system. This is contrasted with other regional energy governance systems such as the European Network of Transmission System Operators for Electricity (ENTSO-E), which integrates environmental and social responsibility through regional directives and independent regulatory agencies.

Another problem is the poor institutionalisation of benefit-sharing. While the downstream nations like Laos derive the economic advantages of electricity sales, affected communities receive the environmental and social spillovers without due compensation or involvement in decision-making. The unevenness risks locking in environmental injustice and may trigger local resistance, which undermines long-term project sustainability. In substance, the APG MoU (2002) is a geopolitically significant but legally and environmentally underdeveloped regional energy integration mechanism. In order to best achieve the optimum potential of the ASEAN Power Grid while maintaining the principles of sustainable development and environmental justice, the region needs binding protocols or ancillary instruments that institutionalize cross-border environmental regulation, public participation, and community safeguarding of rights. These reforms are needed because the ASEAN region is accelerating its energy transition and building its cross-border facilities in response to climate commitments as well as economic growth imperatives.

Domestic Laws in India Governing Environmental and Social Justice in the Context of Cross-Border Energy Projects

- Environment (Protection) Act, 1986

The Act is the main law regarding environmental regulation in India. It provides the central government with powers to act for environmental protection, such as controlling industries, pollution control, and imposing Environmental Impact Assessments (EIAs) on different types of infrastructure projects. The Act is a key piece of legislation for India's EIA process and provides room for public consultations, environmental approval, and establishment of pollution limits. Yet, its enforcement is applied only within Indian bounds. It cannot be used to cover projects within adjacent countries such as Nepal or Bhutan, even though such projects may have large ecological or hydrological effects within Indian bounds. Downstream communities from foreign-origin dams or power schemes have no locus under this Act for calling for environmental responsibility or mitigation. Additionally, India does not have any binding bilateral arrangements with neighboring countries to impose

transboundary EIAs, common ecological monitoring, or compensation for environmental harm done by infrastructure built outside Indian territory.

- Forest Rights Act, 2006

The Forest Rights Act is a milestone law that recognizes the customary and traditional rights of the Scheduled Tribes and other forest-dwelling communities on forest land and resources. One of its key provisions is the need for Free, Prior, and Informed Consent (FPIC) from local Gram Sabhas prior to any diversion of forest land for developmental projects. But the Act integrates the tribal populations into a very important stakeholder by requiring their involvement in project decisions impacting their livelihoods and environment, within the territory of India. Significantly, the Act does not extend beyond the Indian territory. Thus, when cross-border projects in nations such as Bhutan or Nepal lead to deforestation, disrupt forest-dependent livelihoods, or affect forest ecology on the Indian side, there is no redressal available in law to victim Indian tribal communities under this Act. Even in India, when transmission lines are laid to transport power from such foreign projects, the enforcement of the Act gets watered down. They are predominantly categorized as linear projects in most cases and are carried forward without proper consultation with Gram Sabhas, undermining the participatory protection the law aimed to provide.

- Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013

This law governs land acquisition in India and ensures compensation, rehabilitation, and procedural protections to those affected by public and private development projects. It seeks advance clearance for land acquisition in some situations and Social Impact Assessments (SIAs) for mega projects. The act is important in comparing the state's developmental interests with the rights of the displaced. Its protection, however, does not extend to the Indian border. Indian citizens affected by cross-border schemes such as the Arun-III dam in Nepal, whose effects include changes in the availability of water, riverbed profile, and risk of floods, are not brought under the purview of this Act. Indian law does not mandate any obligation to conduct an SIA for environmental or social effects arising out of an off-country scheme, even though it adversely affects Indian citizens. Besides, while transmission lines are built in India to bring electricity from such foreign projects, the very implementation of the Land Acquisition Act is secret. Public hearings, openness of information, and proper rehabilitation processes are unevenly implemented, particularly in remote or tribal areas, contributing to a vacuum of justice for the affected population.

Legal Gaps in Transboundary Environmental Governance

The legal framework that regulates transboundary energy projects in South Asia, especially with India and neighboring countries, is still weak and underdeveloped. Although international cooperation has created infrastructure connectivity and power exchange, the legal tools that regulate these projects have yet to transform to address the intricate challenges brought about by environmental degradation and displacement across borders. One of the main legal loopholes is the lack of binding commitments in transboundary environmental impact assessments (TEIAs). In contrast to the Espoo Convention or the European practice, neither India nor its neighboring countries make a requirement for impact assessments that consider downstream or cross-border ecological effects. This lack has a direct impact on communities residing in common river catchments or border zones who are exposed to activities upstream such as damming or deforestation in a different country.

Moreover, the concept of prior informed consent that lies at the heart of contemporary environmental justice approaches is not ingrained in cross-border project governance. Indian communities impacted by a project based in Nepal or Bhutan are seldom informed or consulted, contravening both procedural as well as substantive rights. Mechanisms for grievance redressal too are breathtakingly inadequate. Although domestic arrangements may offer local projects administrative or judicial review, no such parallel arrangement exists for foreign-origin infrastructure that inflicts damage in India. Their victims lack legal ground to oppose foreign states or private companies.

Furthermore, most energy cooperation agreements lack overall consistency with environmental legislation. Power exchange, grid infrastructure, and business terms are the predominant concerns in treaties and Memoranda of Understanding (MoUs). Environmental protection, social justice, or sustainability are secondary considerations at best. This disjointed approach reinforces a development paradigm that seeks maximum economic efficiency over ecological stability and community welfare. As such, while regional cooperation appears to be in place, the legal regimes established are short of normative depth to protect rights, ensure justice, and prevent environmental externalities from being transferred onto the weak. A more integrated and enforceable transnational legal framework is thus necessary to uphold environmental justice in the era of regional energy integration.

- Treaty and MoU Gaps: India-Nepal, India-Bhutan, and ASEAN

The India–Nepal Power Trade Agreement (2014), the India–Bhutan bilateral hydropower development agreements, and the ASEAN Power Grid (APG) MoU (2002) collectively constitute the South and Southeast Asian regional energy cooperation architecture. These are primary to the building of energy security, energy diversification, and cross-border trade in electricity. But though of great strategic value, these agreements do not have enforceable clauses to respond to the socio-environmental aspects of transboundary energy venturesThe India–Nepal Power Trade Agreement (2014), the India–Bhutan bilateral hydropower development agreements, and the ASEAN Power Grid (APG) MoU (2002) collectively constitute the South and Southeast Asian regional energy cooperation framework. These tools are essential to enhancing energy security, facilitating diversification of energy sources, and facilitating cross-border electricity trade. But although a part of their strategic significance, such agreements lack provisions for enforceability on the socio-environmental components of transboundary power projects. More specifically, they lack adequacy in three areas: environmental protections, stakeholder engagement, and grievance redress.

The India–Nepal Power Trade Agreement of 2014 is a landmark bilateral arrangement providing a gate way to government, public, and private sector participation in cross-border electricity trade. Although it allows for easier power interexchange and encourages investment in transmission facilities, and hydropower production, it does not refer to the environment. Environmental impact assessments (EIAs), even transboundary EIAs, are not mentioned in the accord, yet these are highly necessary in assessing ecological effects that cross political boundaries. Downstream Indian states, particularly Bihar and Uttar Pradesh, are thus still susceptible to negative effects of Nepali hydropower projects located in the upstream. The lack of mandatory concurrent EIAs or cumulative environmental assessment provisions in the agreement generates a structural deficiency in expectation or response towards environmental damage.

Moreover, the agreement does not necessitate public consultation or the participation of affected communities. Whereas Nepal might perform national EIAs through its own laws, it is under no obligation to involve Indian stakeholders that could be downstream receivers of the project's environmental effects. This creates a governance asymmetry and adds to an environmental justice procedural deficit. The _FPIC rule_, utterly universally accepted around the world in indigenous peoples' and forest rights settings, is entirely absent in this treaty.

India's cooperation in hydropower generation with Bhutan is often reported as a model of regional energy diplomacy, supported over the course of decades. Among these projects are Tala, Chukha, and Mangdechhu, funded and developed by Indian technical and financial support and currently serving as sources of power re-exported to India. These arrangements are essentially infrastructure-based, and focus is placed mainly on generation targets, cost-sharing, and power tariffs. Even as Bhutanese domestic law mandates environmental appraisal for these activities, no binational procedure is available to address cross-border environmental impacts. Diversion of river flows or cumulative impacts on Assam or West Bengal transboundary river basin ecosystems, for example, are legally untouched. No process is also available to address Indian citizens indirectly affected by Bhutanese infrastructure.

Besides, Bhutanese environmental guidelines—although relatively robust—are not attached to Indian regulatory systems. No provision in the agreements is reserved for coordination of environmental surveillance, exchange of information, or warning systems on downstream floodings. Furthermore, local populations' interests in Bhutan

are determined by internal mechanisms, not bound by any requirement to take into account Indian hinterland interests based on the same river basin. This creates both legal and participation gaps.

The ASEAN Power Grid MoU (2002), a regional multilateral process among ASEAN members, seeks to establish a regional electricity grid to facilitate economic integration. Though India is not a direct member, it interacts with ASEAN through BIMSTEC and other cooperative energy mechanisms. The APG MoU focuses on technical standard-building and connectivity through transmission but remains essentially non-binding and policy-based. It is not based on enforceable provisions regarding environmental standards, indigenous peoples' rights, or procedural protections. For example, the Laos–Thailand–Malaysia–Singapore Power Integration Project (LTMS-PIP), a flagship project of ASEAN, does not fall under any central ASEAN agency to oversee environmental compliance and achieve equity across borders.

Significantly, the MoU fails to provide any mechanism for joint transboundary environmental impact assessments, public consultation, or social impact assessments. It leaves such matters in the hands of national governments, thus creating a patchwork system. In so doing, the APG and other such agreements exclude environmental democracy and human rights principles gradually being accepted as core elements of sustainable development.

In short, whereas the India–Nepal, India–Bhutan, and ASEAN energy pacts have managed to promote electricity exchange as well as the development of infrastructure, they all share the shortcoming of lacking environmental responsibility, participatory processes, and international legal protection. Their inaction on cross-border environmental justice is a stark policy gap that needs to be filled in order for regional energy cooperation to be sustainable and equitable. In particular, they fall short in three critical areas: environmental safeguards, inclusive stakeholder participation, and grievance redress mechanisms.

- Inadequacies of Indian Domestic Laws in Addressing Transboundary Energy Projects

India has a very large legal framework to govern environmental protection, land acquisition, and forest rights. Acts such as the Environment (Protection) Act, 1986; the Forest Rights Act, 2006; and the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 are some of the most advanced in the developing world. But these are bound in their jurisdiction in an inherent way—they are operative only within Indian territory. With more cross-border energy projects initiated by India with Nepal, Bhutan, and ASEAN countries, such territorial borders create legal vacuums that deprive Indian nationals to whom they apply of adequate remedies or claims to participation.

The Environment (Protection) Act (EPA), 1986, is the overarching law for environmental protection in India. It authorizes the central government to impose environmental standards, regulate pollution controls, and require Environmental Impact Assessments (EIAs). This Act calls for EIA Notification mandating that projects which are likely to have environmental effects—particularly infrastructure projects—be subjected to public criticism and scientific evaluation. This structure fails, though, when the project is outside Indian jurisdiction. For example, a dam constructed within Nepal or Bhutan that transforms flows in rivers into India or affects biodiversity downstream cannot be subject to Indian EIA requirements. There is no transboundary jurisdiction of the EPA, nor does it have a mandate to make foreign parties undertake joint EIAs or take into account Indian environmental interests. This leaves a huge lacuna, especially in ecologically sensitive areas along border states like Sikkim, Arunachal Pradesh, West Bengal, and Bihar.

Additionally, the Ministry of Environment, Forest and Climate Change (MoEFCC), which operates the EPA, lacks an institutional mandate to be involved in bilateral or regional environmental assessments of foreign-origin projects. Even in collaborative energy projects initiated by India's Ministry of Power or Ministry of External Affairs, the MoEFCC tends to be relegated to the side. There is no statutory requirement of transboundary environmental management, rendering preventive action challenging and restricting India's diplomatic capital in order to provide sustainable energy cooperation.

The Forest Rights Act, 2006, recognizes rights of Scheduled Tribes and other traditional forest dwellers to forest land and resources. It requires Free, Prior and Informed Consent (FPIC) from affected Gram Sabhas before any diversion of forest land for development purposes. In India, the FRA has acted as a strong movement against land dispossession and protecting forest land. Still, in the case of transnational infrastructure, specifically power transmission lines constructed to export energy from Bhutanese or Nepali hydropower dams into India, these rights are watered down. Transmission projects are most commonly classified as "linear infrastructure" and expedited through administrative exemptions. Consequently, the obligatory consent process of forest-dwelling populations is either bypassed or done perfunctorily. Even more glaring is the entire lack of any use of the FRA where the environmental degradation comes from outside the country, even if it impinges directly upon forest-dwelling communities within India.

The Land Acquisition Act of 2013 seeks to provide reasonable compensation, rehabilitation, and social impact assessment (SIA) to landowners and affected communities in the case of big-ticket projects. The law provides safeguards in the form of public hearings, expert appraisal, and even requires consent from affected populations in some instances. This Act is robust in terms of protecting citizens affected by domestic projects, but it provides no redress to Indian citizens whose projects are located outside India. For instance, when such a dam in Nepal causes seasonal flooding or perennial water scarcity in some Indian villages downstream, those affected cannot invoke this Act for compensation or rehabilitation. Even when lands are acquired in India for transmission corridors connected with foreign sources of power, their open processes for transparence and consultations are often opaque or abridged. There is minimal transparency regarding whether or not the power relations of the cross-border project influence the application of Indian legal protections.

In totality, India's domestic legal instruments—although progressive within national boundaries—lack the scope and mechanisms to engage with transboundary infrastructure's ecological and social consequences. The assumption that environmental and social risks are contained within state borders is increasingly untrue in an era of interconnected energy corridors. Without legal reforms that introduce cross-border environmental governance, joint impact assessments, and participatory rights for Indian communities affected by foreign projects, the promise of environmental justice remains incomplete.

Reformative measures for enshuring enviornmental justice and community involvement.

- Legal Mandates for Cross-Border Environmental Impact Assessments (EIAs) and Public Hearings

The most pressing void on the legal front of regional energy cooperation is that cross-border Environmental Impact Assessments (EIAs) and public consultations are not binding. While national legislations requiring EIAs for significant infrastructure projects exist in most countries-India, Nepal, and Bhutan; the assessments remain within the boundaries of the respective country.As a result, a Nepalese hydropower dam that has a significant impact on the ecology or water supply of Indian states such as Bihar or Uttar Pradesh can go ahead completely disregarding those transboundary impacts. The same holds for India-supported hydropower projects in Bhutan or multilateral energy corridors under the ASEAN umbrella.

This lacuna can be filled by establishing bilateral or multilateral legal requirements that call for the conduct of joint EIAs for all transboundary infrastructure projects. These orders must include upstream and downstream countries' responsibilities to examine cumulative environmental, hydrological, and socio-economic effects. Public hearings must be made mandatory not only in the host nation but also in neighboring areas that could be affected. These hearings need to be carried out in native languages, with locally suitable means of communication, particularly in the case of tribal or forest-dwelling groups.

International law is also in favor of this proposition. The Espoo Convention of 1991, even though a European Convention, offers a well-developed structure for the transboundary EIAs and can serve as a model. India and the neighboring countries are not parties to the Espoo Convention, but acceptance of the principles by a regional environmental protocol would build transparency, accountability, and cooperation.

- Establishment of a Regional Environmental Governance Body

To promote effective enforcement and supervision of environmental norms across borders, there is a need for a specialized regional environmental governance institution. This organization—either as a South Asian Environmental Court or an ASEAN Environmental Ombudsman—would be an impartial platform to settle cross-border environmental conflicts, oversee compliance with treaty-based protections, and lead harmonization of domestic environmental legislations with global standards.

The current framework does not have such a platform. Disputes caused by hydropower-induced floods, displacement, or deterioration of downstream environments usually remain unresolved since there are no official transboundary adjudicative mechanisms. While native courts can hear complaints within their country, they cannot compel foreign states or companies to adhere to environmental justice. Furthermore, people from a different country cannot easily seek redress for harm caused by a project located elsewhere.

A regional environmental body could fill this gap. It could be mandated to oversee implementation of environmental clauses in regional MoUs, treaties, and bilateral energy cooperation frameworks. The same body can also hear petitions from affected persons, civil society organizations, or local governments. The body can also be required to maintain a public registry of transboundary infrastructure projects, environmental assessments, and reports on compliance, promoting transparency and public accountability.

This proposal borrows from today's international models. The Latin American Escazú Agreement includes a regional mechanism for environmental access rights. Similarly, the European Court of Justice has played a key role in enforcing EU environmental directives. While South and Southeast Asia possess unique legal cultures, such precedents demonstrate that regional environmental regulation is feasible and effective.

In a region as ecologically and culturally rich as South Asia and ASEAN, a participatory but centralized environmental institution would act as a surety of justice, making sure that energy integration does not occur at the expense of ecological loss or people's dispossession.

- Incorporation of Environmental Justice Clauses in Energy MoUs and Treaties

One of the foundational reforms required in regional energy diplomacy is the incorporation of explicit environmental justice clauses in all bilateral and multilateral agreements. Current energy MoUs and treaties between India, Nepal, Bhutan, and ASEAN countries focus heavily on technical, financial, and operational aspects. However, they largely ignore the ethical and legal implications of environmental degradation, displacement, and unequal impacts on vulnerable populations.

Environmental justice is not merely about minimizing harm to the environment—it is about ensuring that the gains and losses of development are fairly distributed, that affected people have a voice, and that grievance procedures are in place and functioning. Guarantees to that effect should become standard treaty practice. They need to learn about the rights of the indigenous community, women, forest-dwelling people, and marginalized communities who usually bear the brunt of infrastructure development without representation in the planning and negotiation process.

These provisions may include mandates for parties to conduct Social Impact Assessments in parallel with EIAs, compensation and resettlement consistent with human rights, participatory monitoring throughout the project cycle, among others. They must likewise ensure access to justice and remedies for transboundary victims of environmental degradation.

Precedents for similar provisions exist in international documents such as the Rio Declaration (1992), where principles of access to information, participation, and justice in environmental issues are enshrined. Domestic Indian legislation such as the Forest Rights Act and Land Acquisition Act also have the same ethos. Unless, however, these principles are planted in international agreements, their impact remains localized.

By including environmental justice provisions in energy treaties, states communicate a strong message that human rights and ecological sustainability are not additions to economic cooperation but an integral part of it. Such provisions would infuse responsibility into the very DNA of transnational projects, making energy corridors not just drivers of economic growth but also avenues to inclusive and sustainable development.

- Capacity Building for Local Communities to Access Legal Remedies

Perhaps the most underplayed but most important element of transboundary environmental governance is local community groups' ability to access legal recourse when affected by cross-border energy infrastructure. Regional and national legislation might be in place on paper, yet the functional capacity of communities to traverse administrative and legal processes is commonly weak, uneven, and determined by their socio-economic status.

Most forest, indigenous, and agrarian communities impacted by big infrastructure projects are ignorant of their national rights under such legislation as the Forest Rights Act or the Land Acquisition Act. If the damage is from across the border, things get worse. Local people have de facto zero access to foreign courts, zero comprehension of foreign legal orders, and zero options to be involved in project planning processes taking place in another sovereign nation. In energy corridors with several jurisdictions—e.g., the Bhutan-India power transmission lines or the ASEAN LTMS-PIP project—this leads to disenfranchisement and environmental injustice.

In order to address this, capacity-building needs to be institutionalized as a parallel process to legal and policy change. Governments, in partnership with civil society and international organizations, need to finance and support training schemes that train communities about environmental rights, legal entitlements, and accessible grievance redress mechanisms. Legal aid units need to be set up within project-affected areas with multilingual materials, paralegal volunteers, and access to digital documentation tools.

In addition, local-level Environmental Monitoring Committees (EMCs) may be granted the authority to monitor ecological effects independently and report to national governments as well as regional watchdog institutions. Local committees may also function as subnational stakeholders to informal inter-state consultation procedures. Cross-border civil society networks between NGOs like Indo-Nepal or India-Bhutan organizations should be supported and financed to enable collective representation of affected communities.

Capacity building brings about a change in the legal rights from abstractions of theoretical protections to concrete tools of justice. It leaves all the reforms- even the most progressive going over the heads of society's most desperate victims of environmental and social ills.

- Regional treaty on transboundary environmental governance

Although bilateral MoUs and sectoral cooperation agreements have provided the foundation for South and Southeast Asian cross-border energy infrastructure, the lack of a specific regional treaty on transboundary environmental governance continues to be an acute legal gap. Such a treaty would be able to offer an overarching platform for governing regional environmental and social effects of regional infrastructure, aligning national legislation with international environmental standards and holding parties to enforceable obligations.

As opposed to sector-specific pacts such as the India–Nepal Power Trade Agreement or the ASEAN Power Grid MoU, a regional environmental treaty would transcend all sectors to the extent that ecological integrity and community rights are not compromised at the altar of development. The treaty must enshrine minimum procedural and substantive obligations: required joint EIAs, shared hydrological information, advance public notice of cross-border projects, coordinated biodiversity conservation, and compensation mechanisms for transboundary harm.

The treaty could be modeled on international examples such as the Espoo Convention or the 1992 UNECE Water Convention. It should institutionalize the principle of "no harm" to neighboring states, enshrine environmental justice and access rights, and mandate dispute resolution through an impartial regional mechanism. Participation should include not just national governments, but also local authorities, indigenous groups, and civil society.

In addition, such a treaty can set up a South Asian or an ASEAN Commission for Transboundary Environmental Cooperation, with the authority to scrutinize complaints, review Environmental Impact Assessments, and make non-binding recommendations. Its findings could guide or complement national environmental clearance procedures, introducing one more layer of responsibility and transparency.

Without such a treaty, every energy project is an island, separately negotiated, with scant attention paid to aggregate regional environmental effects. A region-wide treaty would rectify this fragmentation, standardize legal regimes, and bring environmental governance into the spotlight from the footnote it currently occupies in regional collaboration. It would also add legitimacy to development processes by demonstrating that states are not merely exchanging electricity, but committing to green futures.

- Creation of a Transboundary Social and Ecological Risk Atlas

To support evidence-based policymaking and enhance transparency, South and Southeast Asia must invest in a Transboundary Social and Ecological Risk Atlas—a publicly accessible, interactive mapping system that identifies zones vulnerable to environmental and social risks from energy infrastructure. Such an atlas would serve as a decision-support tool for governments, investors, local communities, and regional institutions.

Currently, the absence of cumulative risk mapping leads to decision-making in isolation. Projects are evaluated individually, without considering overlapping impacts on ecosystems, migratory routes, seismic fault lines, or community livelihood patterns. A single dam might seem environmentally benign in its individual EIA, but when mapped alongside other planned projects, its role in cumulative degradation becomes evident. It is particularly applicable in river basins such as the Ganga, Brahmaputra, and Mekong, where tens of proposed or built dams and transmission lines intersect across national borders.

A Transboundary Risk Atlas would integrate information from hydrological research, biodiversity records, traditional land maps, climate modeling, and socio-economic surveys. It might shade in red zones—places where more infrastructure can result in environmental tipping points or social dispute. The Atlas might be serviced by a regional organization such as the suggested South Asian Environmental Court or an intergovernmental technical commission.

Most importantly, the platform must be multilingual and participatory so that communities can post local data, testimonials, and visual evidence. Civil society, media, and researchers might utilize it to audit government claims, raise alarm, and assist with litigation or advocacy. Governments might utilize it for transboundary dialogue and strategic environmental planning.

Examples of such initiatives include the Global Forest Watch (for deforestation tracking) and the Water Risk Atlas by WRI. Adapting this model for the energy-environment interface in Asia would provide a crucial layer of democratic oversight, reduce conflicts, and promote coordinated development that respects ecological limits and social equity.

Conclusion: Towards Just and Sustainable Energy Cooperation

The accelerated growth of regional energy cooperation within Southeast Asia and South Asia uncovers some of the most vital legal and governance loopholes, particularly on issues related to environmental justice. While multilateral and bilateral arrangements, such as the India–Nepal Power Trade Agreement, India–Bhutan Hydropower Agreements, and ASEAN Power Grid MoU, have promoted energy integration, the arrangements remain deficient in commitments regarding cross-border Environmental Impact Assessments (EIAs), public engagement, and grievance redress frameworks. Domestic Indian laws, while comparatively robust, have no extraterritorial application and provide no recourse to Indian nationals harmed by foreign infrastructure.

These deficiencies signify a structural gap between energy policy and environmental governance. Coordinated legal reforms are necessary to address these: mandatory cross-border EIAs, inclusion of environmental justice clauses in treaties, establishment of a regional environmental oversight body, and capacity building for the affected communities. In addition, a region-wide treaty on transboundary environmental governance and a shared risk mapping system are in order.

Regional energy security should be balanced with ecological sustainability and social equity. Otherwise, cooperation is likely to be extractive and exclusionary. By placing environmental justice at the heart of energy governance, states can make sure that development is not merely efficient but inclusive and sustainable, serving present and future generations alike across borders.

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