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Environmental Study Delays in Nepal: A Comparison with India and Bangladesh and Policy Recommendations

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Abstract

This research examines the environmental approval process in Nepal and compares it with those in India and Bangladesh, focusing on the time taken to complete the assessment of environmental study reports. The study conducts three levels of analysis. First, the policy review outlines all relevant environmental policies and laws, highlighting key provisions related to approval timelines. While not every step of the environmental study process has a mandated time frame, the legal time limits for report forwarding and approval are explicitly defined. Second, statistical analysis reveals a significant discrepancy between the statutory and actual approval times. While the legal mandate is just 35 days for Environmental Impact Assessment (EIA), assessing a report actually takes 339 days on average. The trend line reveals that the average time taken is decreasing. However, it is still much higher than India's average EIA approval time of 64 days. Third, through a comparative analysis of eighteen different components of the environmental assessment process, this paper identifies the possible factors contributing to the delays, such as ambiguous jurisdiction, lack of nodal agency, lack of integrated guidelines, high centralization, and no use of e-governance. This paper also compares the thresholds that trigger the environmental study across eight sectors for three countries and finds that Nepal's thresholds are narrower than India's and comparable to Bangladesh's. Recommendations made include clarifying jurisdictional roles, developing integrated guidelines, establishing specialized nodal agencies, and implementing digital systems. Overall, this research attempts to address flaws in Nepal's environmental assessment system, offering solutions for efficient environmental regulation and improving the business environment in Nepal.

Keywords: Environmental study, Environmental clearance, EIA, Approval time, Environment regulation

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नेपालमा वातावरणीय अध्ययनमा हुने ढिलाइः भारत र बङ्गलादेशसँगको तुलना र नीति सिफारिसहरू

उमेश राज रिमाल

प्रधानमन्त्री तथा मन्त्रिपरिषद्को कार्यालय, सिंहदरबार, काठमाडौँ, नेपाल

पाण्डुलिपी प्राप्तः ५ अगस्ट २०२४ अन्तिम परिमार्जनः ९ नोभेम्बर २०२४ स्वीकृतः ९ अक्टोबर २०२४

सार

प्रस्तुत अध्ययनले वातावरणीय अध्ययन प्रतिवेदनको मूल्याङ्कन गर्न लाग्ने समयमा केन्द्रित रही नेपालमा वातावरणीय स्वीकृति प्रक्रियाको परीक्षण र यसको भारत र बङ्गलादेशसँग तुलना गरेको छ । अध्ययनमा तीन वटा तहहरूमा विश्लेषण गरिएको छ । पहिलो, सम्बन्धित वातावरणीय नीति तथा कानुनहरूको पुनरावलोकन गरी वातावरणीय अध्ययन र स्वीकृतिका लागि लाग्ने समयको बारेमा प्रकाश पारिएको छ । दोस्रो, तथ्याङ्कीय विश्लेषण गरी कानुनले तोकेको समय र वास्तवमा लागेको समयबिच महत्त्वपूर्ण भिन्नता रहेको पत्ता लगाइएको छ । कानुनले वातावरणीय प्रभाव मूल्याङ्कन प्रतिवेदन स्वीकृति गर्ने समय ३५ दिन मात्र तोकेको भए तापनि औसतमा ३ सय ३९ दिन लाग्ने गरेको देखिन्छ । समय प्रवृत्ति रेखाले यस्तो समय घट्दै गएको देखाउँछ । यद्यपि, अझै पनि भारतको औसत वातावरणीय प्रभाव मूल्याङ्कन प्रतिवेदन स्वीकृतिका लागि लाग्ने समय ६४ दिन भन्दा नेपालमा निकै नै धेरै समय लाग्ने गरेको छ । तेस्रो, नेपालमा विद्यमान वातावरणीय मूल्याङ्कन प्रक्रियासँग सम्बन्धित विभिन्न १५ वटा अवयवहरूको भारत र बङ्गलादेशसँग तुलना गरी उक्त ढिलाइका कारणहरू पहिचान गर्न प्रयत्न गरिएको छ । यस्तो तुलनाबाट अस्पष्ट क्षेत्राधिकार, नोडल एजेन्सीको अभाव, एकीकृत निर्देशिकाको अभाव, अति केन्द्रीकरण र विद्युतीय शासनको प्रयोगका अभाव जस्ता कारणहरू औँल्याइएको छ । यो अध्ययनमा तीन देशका वातावरणीय अध्ययन अनिवार्य बनाउने आठ वटा क्षेत्रका थ्रेसहोल्डबिच पनि तुलना गरिएको छ । यसले नेपालमा वातावरणीय अध्ययनको सीमा भारतमा भन्दा सङ्कुचित रहेको तथा बङ्गलादेशमा करिब उस्तै-उस्तै रहेको देखाएको छ । नेपालको वातावरणीय अध्ययन प्रतिवेदन स्वीकृतिको प्रक्रियालाई छिटो बनाउन उल्लिखित तुलना, विश्लेषण र नतिजाको आधारमा विविध नीति सिफारिसहरू गरिएको छ जसमा स्पष्ट क्षेत्राधिकार, एकीकृत निर्देशिका, प्रत्येक तहमा विशिष्टीकृत नोडल एजेन्सी र विद्युतीय प्रणालीको प्रयोग जस्ता सुधारका उपायहरू रहेका छन् । समग्रमा, यस अध्ययनले नेपालको वातावरण मूल्याङ्कन प्रणालीमा रहेका कमी कमजोरीहरूलाई सम्बोधन गर्दै नेपालमा कुशल वातावरण नियमन र व्यावसायिक वातावरण सुधारको लागि उपायहरू सिफारिस गरेको छ ।

शब्दकुञ्जी: वातावरणीय अध्ययन, इआइए, स्वीकृति समय, वातावरण नियमन

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1. Introduction

Environment Protection Act 2019 and accompanying legal instruments necessitate the approval of environmental study reports from the concerned authorities before commencing specified infrastructural and industrial projects in Nepal. The provision of integrating environmental considerations into the development processes was initiated to balance between environmental protection and economic growth (NPC, 1980). Given its sensitive geo-climate and topography, such measures are critical for Nepal (Khadka & Tuladhar, 1996). While environmental studies have contributed to maintaining environmental integrity and reducing pollution, at least to some extent, various stakeholders, including regulatory agencies, the private sector, and the media, have raised concerns regarding significant delays in approving environmental study reports. These delays have hindered the timely completion of projects, negatively impacting the business environment in Nepal. Therefore, smoothing the environmental study process has been a critical policy issue that needs prioritized resolution.

An environmental study is a precautionary action that documents the potential negative impacts of the construction and operation of the proposed projects and finds a way to control them. Various alternatives are discussed and analyzed to select the best alternative in terms of environmental permissibility. Regular follow-ups with the necessary corrective measures in a timely manner are conducted to address the environmental concerns that may arise from project execution.

The concern for encroachment of developmental activities on the natural and manmade environment led to the emergence of environmental impact studies worldwide. The first such effort materialized in the United States with the enactment of the National Environment Policy Act (NEPA), which assesses the environmental impact of US federal agencies' actions on the environment and takes necessary actions to mitigate the effects (NEPA, 1969). The goal was to ensure that the infrastructure projects such as airports, complexes, and highways financed through the federal budget were sustainable, pro-people, and environmentally friendly. Although initially adopted by the developed Western countries, the NEPA initiative quickly gained traction globally. This momentum was further accelerated by the mandatory provision of environmental assessment for the projects implemented with the World Bank's assistance (World Bank, 1991). Today, virtually all countries have legal frameworks to govern the environmental concerns of developmental activities regardless of the sectors, whether they are public, private, or third sector, that implement the projects.

Nepal started environmental impact assessment in the 1980s mainly to address the environmental effects of donor-assisted projects. The binding provision was made on constructing infrastructures passing through the forest area in 1982 after the establishment of the Environment Protection Council. The Environment Protection Act (1997) and the Rules (1997) made environment study mandatory for the projects and activities specified in the Rules. Article 4 of the Act states that no one should implement or cause to implement the specified proposal without approval from the concerned authority or the ministry after the Act comes into force. With these initiatives, addressing environmental side-effects during developmental activities got legal frameworks in Nepal. The Act underwent amendment thrice before its replacement by the new Act; first to address the republic transformation of the nation, second to accommodate the role of provinces after the declaration of a new constitution, and the third was miscellaneous amendments to introduce provisions that do not have direct consequences on environmental clearance procedures. However, the Rules witnessed five revisions, almost all of them having a direct bearing on the environmental study.

The Office of Auditor's General (OAG) has repeatedly pointed out the need to reform the environmental clearance procedures to expedite the process. In its 59th report, OAG states that despite the legal compulsion to clear the reports within 35 days, almost none of them have been approved on time (OAG, 2022). Some instances even show that the Ministry of Forests and Environment took more than two years to complete the procedures, resulting in prolonged extension of development projects. The unusual extension of the construction period has mandated repeated variations in time and cost, ratcheting up the consultation and construction costs. This has shifted the overall project cost to a substantially higher level. OAG advised the ministry to effectively coordinate among the stakeholders to approve the Environment Impact Assessment (EIA) report within the period fixed by the law. Remarks with similar spirits are also repeated in the 60th report (OAG, 2023). Along with continuing the previous year's remarks, the 61st report has gone one step further (OAG, 2024). The report analyses the causes and consequences of the delay and directs the ministry to address those limitations.

The current Environment Protection Act and the Rules, enacted respectively in 2019 and 2020, allocate the roles and responsibilities among three tiers of the government. These legislations have adopted a decentralized approach in the context of the federal structure of the country. Though a continuation of the previous Acts and Rules in many respects, the new Act allocated the approval authority to the three tiers of the government. With the new law, environmental study of national priority developmental projects, Investment Board approved projects, national

pride projects, federally governed projects, inter-provincial projects, and any other projects specified by the Government of Nepal must be submitted to the federal ministries (EPA, 2019). Brief Environmental Study (BES) and Initial Environmental Study (IEE) are approved by the specified ministries, whereas the EIA is approved by the Ministry of Forests and Environment (EPR, 2020). The environmental study reports regarding the developmental activities or the projects under the jurisdiction of provinces are to be submitted to the authorities specified by the provincial law. Similarly, for the activities or projects under the jurisdiction of local levels, BES and IEE reports should be submitted to the authority specified by the local level laws. In contrast, the EIA report should be submitted to the authority specified by the provincial law.

The Government of Nepal has enacted numerous legislations, decentralized the decision-making process, and amended environmental study thresholds multiple times. Yet, the average time for obtaining environmental clearance is excessively long (OAG, 2022; OAG, 2023: OAG, 2024). This inefficiency directly contributes to the slow project implementation and low capital expenditure (MOF, 2024). Although the prolonged clearance process is recognized as a significant governance problem, only some studies have examined the underlying causes of delay. Existing literature primarily focuses on the qualitative aspects of Environmental Impact Assessment (EIA). Research that analyzes the time dimension of bureaucratic processes for environmental clearance is almost non-existent.

This study analyzes the approval time for environmental study reports in Nepal, collecting data from three federal ministries: the Ministry of Forests and Environment (forests), the Ministry of Physical Infrastructure and Transport (physical infrastructure), and the Ministry of Energy, Water Resources and Irrigation (energy). It presents summary statistics, descriptive analysis, and trend analysis of three-and-a-half-year period data to examine variations in approval times among the ministries over the study period. The time taken for approval may vary according to the types of proponents, such as government agencies vs. private sector, as their operating efficiency and incentives differ. Because the time taken can vary according to the kinds of proponents, the equality of mean test is applied to observe if there is a statistically significant difference in approval time between the study reports proposed by the government and private sectors. The study also compares approval times across different sectors, as the environmental impact and consequences of projects vary by sector, affecting the time needed for report analysis. For example, environmental study reports of constructing a hotel or a hospital may be less complex than those of industrial zones. Therefore, environmental study reports of a hotel or hospital may take less time to approve than those of industrial zones.

In addition to examining the Nepali context, the study conducts a comparative analysis of the EIA process between Nepal, India, and Bangladesh. The four general processes of environmental clearance, viz. screening, scoping, public consultation, and evaluation, are being practiced differently in these countries. Apart from these four broad processes, the constituents of the process, such as the number and types of reports, authority delegation, approving authority, the role of experts, time limit for each stage, and the use of automation, also have a significant bearing on the timely completion of the clearance process. Therefore, this study will cover the time taken for the EIA process and the scope, thresholds, and procedural differences among these countries. By highlighting these differences, the study seeks to pinpoint specific areas where Nepal lags or excels compared to its neighbors.

Based on the comparisons between the eighteen EIA approval constituents, this research found that Nepal needs reforms in several processes and managerial aspects. A nodal agency should be ascertained, and capacity enhancement should be done to make the agency a knowledge reservoir for environmental study. The agency should coordinate all the environmental study processes. There is no better place than the Department of Environment for that role. The three reports, BES, IEE, and EIA, should be reconfigured into BES and EIA. Most of the thresholds necessitating BES so far should be lifted, making the current IEE thresholds as new BES thresholds.

Similarly, the current provision of a separate scoping document before Terms of Reference (TOR) should be scrapped as the TOR satisfies the document requirements in the scoping stage. Separate integrated and other sector-wise guidelines and their regular update can guide both the proponents and authorities to expedite the process. The most important aspect is the need for more application of automated IT systems in Nepal. The web-based system is used in both Bangladesh and India. A detailed discussion about these issues is presented in the discussion section.

2. Literature Review and Knowledge Gap

2.1 EIA Approval Time

The delay in the approval time of the environmental study report is an important contributor to environmental study delay, hence, project execution delay (Harvey, 1994). Realizing the sluggish pace of environmental clearance and, therefore, the need for speedy project completion, many countries have amended their EIA-related statutes to include the mandatory time period within which the relevant authority must review environmental study reports. Approval time is defined

vaguely by some countries without explicitly mentioning the duration, as in the case of South Africa. In contrast, some other countries' statutes mention the approval time explicitly in terms of the number of days, as in the case of Nepal, India, and Bangladesh (EPR, 1997; MoEF, 2006; EPR, 2019).

In Nepal, the Environment Protection Rules, 1999 originally stipulated 30 days to approve IEE by the concerned ministry and 90 days to approve EIA by the Ministry of Forests and Environment from the date of the receipt of the report. The first amendment to the Rule reduced the IEE and EIA approval time from 30 and 90 days to, respectively, 21 and 60 days, with a caveat that the extra 30 days are allowed to the Ministry of Forests and Environment in case it cannot approve EIA within 60 days because of special reasons. The Environment Protection Rules, 2020, framed under the new Environment Protection Act, 2019 reduced the approval time significantly to 15 days for BES and IEE and 35 days for EIA. However, the caveat this time is more obscure and indeterminate than in the previous Rules. With the new Rule, the statutory approval time will begin only after the approving authority receives documents or clarifications, without imposing time limits on collecting those documents and clarifications.

In India, the EIA notification of 1994 stipulated 90 days for EIA approval by the Ministry of Forests and Environment. However, such time would be counted only from the date of receipt of the requisite documents and data from the promoter and after the completion of public hearings. An additional 30 days was allowed to inform the decision. In total, the Indian statute provisioned 120 days for EIA approval in the beginning. Later on, in EIA notification 2006, this period was reduced to 60 days for appraisal and recommendation by the Expert Appraisal Committee, and 45 additional days were given to the regulatory authority for making the final decision on the expert committee's recommendation.

In Bangladesh, the relevant regulatory authorities take 15 working days for Green category projects, 30 working days for Orange-A and Orange-B category projects, and 60 working days for Red category projects to issue Environment Clearance Certificate (ECC), once all requisite documents are received (EPR, 1997).

Environmental legislation in South Africa does not prescribe time limits for environmental study reports by the relevant authority. However, EIA regulations require the appropriate authority to decide on proposals within a reasonable time. The applicant has the right to receive information about any delay immediately and a written explanation of potential future delay. Studying land and infrastructural development in South Africa, Kotze & Walt (2003) found that, despite such

provisions, there were unreasonable delays in approvals by the relevant environmental authority. These delays imposed the time and money constraints on developers, jeopardizing aspirations for fast-tracked development.

Reducing approval time and the overall time taken for EIAs has been a top priority for governments worldwide. Exempting and minimizing some of the processes or whole EIA has been increasing particularly in the US (Bond, 2014). EIA notification 2006 and concomitant amendments have kept strategic and defense projects outside the ambit of environmental study in India. A series of reforms have been implemented to reduce the EIA approval time in Nepal (Shrestha, 2016; EPR, 2020).

2.2 EIA Cost

Environmental study is a crucial tool to sustainable development. However, the cost associated with it could have negative consequences on business competitiveness. EIA has direct and indirect costs. Studies show that while average direct costs are within the limit of 1.5 percent (European Commission 1996; Norwegian Ministry of Environment, 2003; Wood, 2003; Tyldesley, 2005; Retief & Chabalala, 2009), the indirect cost could go up to 10 percent of total project cost (Gilpin, 1996).

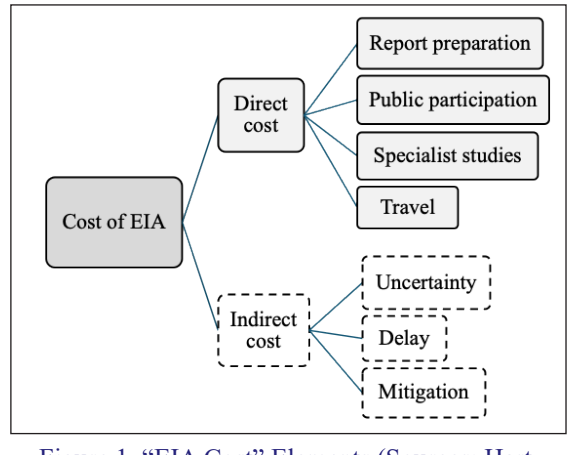

Figure 1. "EIA Cost" Elements (Sources: Hart, 1984; Gilpin 1996)

Unlike direct costs, indirect EIA costs are not straightforward to measure. The indirect cost of EIA delays could range from additional consultant fees to lost opportunities in resources tied up and deferred revenue streams. In the study based on the proponent's views on cost-effectiveness, Macintosh (2010) found that estimated delay costs of federal EIA processes range between AUD 301,195 and 756,995 on average. Delay costs are more serious in Nepal, especially for developmental projects initiated by the government, as there are instances of projects entering into the implementation phase without proper preparatory works (MOF, 2024). Awarding tenders without receiving approval for the use of forest areas are common. As environmental study is the prerequisite for using forest land and site clearance, infrastructure projects are often stalled indefinitely, even after their formal commencement, as they await environmental clearance.

2.3 Knowledge Gap

Most of the studies so far focus on EIA's indispensability and quality aspects. These studies discuss the techniques, methods, and processes to make EIA more effective and impactful (Caldwell, 1988; Bartlett, 1986a, 1986b). Reviewing EIAs of 110 developing countries based on 14 benchmark evaluation criteria, Wood (2003) found that only a few of these benchmarks were met by the EIAs of the countries studied. Ahmed (2008) studied EIA practices in Sudan, comparing and contrasting the US, the World Bank, and the European Union practices in 17 major areas. The study found that the Sudanese practices failed to confirm to the best practices. The study also analyzed the EIA status of nine projects and found lapses in numerous quantitative and qualitative aspects. The absence of alternative analysis, no cost-benefit analysis, poor integration of EIA with planning, poor public participation, limited tools, and few monitoring were identified as some of the challenges faced by the EIA process in Sudan. Many other studies, such as Zhao (2009), discovered that narrow EIA mandatory areas, weak public participation, low-quality reports, and laxity in implementation follow-ups are the problems affecting the qualitative aspects of EIA. Bhatt and Khanal (2010) opined that the EIA system in Nepal primarily focuses on screening, scoping, TOR, and impact monitoring but lacks policies for Environmental Impact Statements (EIS) and post-evaluation mechanisms, limiting its effectiveness compared to international standards.

Dangi et al. (2015) examines the qualitative shortcomings of the EIA in landfill development projects in Kathmandu Valley, highlighting issues such as poorly prepared reports by unaccredited contractors, limited public participation, and government failure to follow proper procedures. While the study focuses on the procedural and participatory flaws in EIAs, it does not address quantitative aspects such as the time taken for the EIA process.

Much of the existing research focuses on the qualitative aspects of EIA. There needs to be more research investigating the efficiency and approval time aspects of the EIA process. In the case of Nepal, studies on approval time are almost nonexistent.

Against this backdrop, this study reviews the environmental study regime in Nepal, focusing on the organizational procedures and the time taken to complete the EIA process. By analyzing these aspects, the study aims to provide a detailed understanding of the efficiency and effectiveness of the current procedures. This involves a statistical analysis of the time required to complete the EIA process across various ministries in Nepal, identifying any variations and underlying reasons for delays.

In addition to examining the Nepali context, the study aims to conduct a comparative analysis of the EIA process between Nepal, India, and Bangladesh. This comparison will cover the time taken for the EIA process and the scope, thresholds, and procedural differences among these countries. With these comparisons, the study seeks to pinpoint specific areas where Nepal lags or excels compared to its neighbors. Recommendations are presented to address gaps in policy, law, and administrative processes so that the entire environmental study can be conducted efficiently and in a timely manner in Nepal.

3. Research Methodology

3.1 Data Collection

Recording of incoming and outgoing letters is the basic administrative procedure. These records include the date, sender's name, subject, and any remarks or additional information associated with the letters. In addition to these details, environmental study approving ministries have recorded the project's name, size, name of the proposer, the type of the project, and the approval date. These records were extracted from the register book of the respective ministries. The principal variable of this study is the time taken in terms of the number of days between the applications registered and the letter dispatched to the proposer informing the approval of the environmental study. This variable is calculated by taking the difference between the registered and approval date.

The project-wise number of days for EIA approval in India is not publicly available. However, the MOEFF&CC publishes annual reports with the average number of days for each year for all the projects approved during the year. This data is compared with the average number of days MOFE took in Nepal for EIA approval.

In the case of Bangladesh, the time taken for EIA approval can't be collected. Upon the examination of various literature, including journal articles, newspaper articles, and international agencies' publications about the project implementation in Bangladesh, it is found that the delay in the environmental procedures does not feature in the list of affecting the smooth and timely completion of projects in the nation. However, Bangladesh's legal and administrative procedures for EIA are taken as a yardstick for comparative analysis.

3.2 Data Analysis

Descriptive statistical analysis, t-test, line plots, and comparative tabular format were used to analyze the approval time. Summary statistics such as mean, median,

and standard deviation were calculated and compared. Sector-wise summary statistics are compared to analyze the sector-wise differences in approval time. The approval time also varies according to the type of proposer such as government versus private sector. A t-test was used to examine the difference in the group mean of projects in these two sectors. Line plots show the variation in time over the study period. Administrative, legal provisions, and thresholds for environmental study in three countries were analyzed using tabular format.

3.3 Methodology

This research employs two approaches to comparative analysis. The first approach involves an across-ministry comparison, where the time taken by different federal ministries in Nepal to approve environmental study reports is analyzed. The second approach is an across-country comparison, where the time taken by the Ministry of Forests in Nepal for approval was compared with the corresponding processes in India and Bangladesh.

In the first approach, three federal ministries were selected for analysis: the Ministry of Physical Infrastructure, the Ministry of Energy, and the Ministry of Forests and Environment. These ministries were chosen because they oversee most environmental study reports under federal authority. The Ministry of Forests and Environment is the sole authority that approves all EIA reports. The relevant ministries approve BES and IEE reports and forward the EIA reports to the Ministry of Forests and Environment for approval. The Ministry of Energy handles approvals for the hydropower sector, while the Ministry of Physical Infrastructure manages approvals for road and bridge projects. These sectors are significant regarding the number of projects requiring environmental studies.

The second approach examined the environmental study approval process by the Ministry of Forests in Nepal and compared it with the processes in India and Bangladesh. Both approaches focused primarily on the time taken to approve reports and review the policies, laws, and administrative procedures that impact this timeframe.

The analysis began with reviewing the policies and laws governing environmental studies in Nepal, focusing on the provisions related to approval time. Key features of these policies and laws were examined and presented to illustrate how they influence the duration of the report approval process.

Next, the number of days taken to approve environmental study reports by different ministries was presented. Descriptive statistical analyses were conducted. Trend

lines were drawn and analyzed. The trend line of approval time in India from 2014 onwards was presented and analyzed. After the statistical analysis, the three countries' environmental study processes and thresholds were compared and analyzed. Based on these within and between comparisons, conclusions were drawn for the delay in the environmental study in Nepal. Policy recommendations to tackle these reasons were presented. Actions needed to actually carry out these recommendations, pinpointing the responsibilities of each government agency, were prescribed as suggested courses of action.

4. Results

4.1 Review of Existing Policies

The major relevant policies and laws of the Nepal Government are listed in Table 1

Table 1: Review of relevant policies and laws

SN	Relevant Policies and Laws	Main Features
1.	Environment Protection Act, 2019	• Principal legislation preparing the legal ground for environmental study • Power, authorities and responsibilities of administering and approving environmental study reports are divided among three tiers of government. The primary basis of division of responsibilities is the type of environmental study report the proposed project triggers. • Process and prerequisite reports before preparing the final report are described. • The Ministry of Forests and Environment is given the responsibility of approving and administering the EIA proposals with federal jurisdiction. • The broad process of environmental study is preparing terms of reference, public consultation, and approval of the study report • The reports should be prepared in the standard, quality and structure prescribed by the Government of Nepal. • The Relevant authority may form a committee involving the employees of that authority, representatives of the relevant bodies concerned with the proposal and experts to examine and provide opinions and suggestions on the report. • The relevant authority approves the report if, upon examination, it is found that the proposal shall not have serious adverse effect on the environment.

SN	Relevant Policies and Laws	Main Features
2.	Environment Protection Rules, 2020	• All the processes of environmental study including the approval process are described in detail. • Public consultation is required at three stages. At the scoping stage, stakeholders provide suggestions in writing. At the study report preparing stage, a public hearing should be conducted for collecting opinions and suggestions in the affected areas. At the EIA approval stage, the relevant authority publishes the notice for collecting opinions and suggestions on national daily newspaper and EIA report on its website. • Approval and report forwarding time duration for each type of reports are specified. Forwarding time is 15 days if repot submitting and approving agencies are different. Approval time for scoping document, terms of reference, BES and IEE is 15 days whereas that for EIA is 35 days. However, the time counting starts only after the receipts of clarification or documents sought by the approving authority. • Thresholds for each type of reports i.e. BES, IEE and EIA are specified in the annexes. Environmental studies are not required for the project below the BES threshold.
3.	Forest act, 2019 and Forest Rules, 2020	Forest area use sought by national pride projects, national priority projects and the plans whose investment is approved by the Investment Board can be sanctioned by the Government of Nepal. Coordination with Division Forest Office is must before project formulation, feasibility study and environmental study. Approved Environmental study report is required for applying for use of forest land by any project.
4.	Standard Operation Procedures for constructing infrastructure in the protected area, 2023	Approved Environmental study report is required for applying for constructing infrastructure in the protected area.
5.	59th Office of Auditor's General Report,	There has been a situation of slow implementation and cost increment of projects due to time and price adjustment of project developer and consultant on account of delay in the approval of environmental study reports. Therefore, the Ministry of Forests and Environment should coordinate among stakeholders to approve the EIA within the time-period specified by the law.

SN	Relevant Policies and Laws	Main Features
6.	60th Office of Auditor's General Report	OAG has listed the sample projects that crossed the legally time bound period for approval. The time taken is divided into the time taken for collecting evidences, for forwarding EIAs to the minister by the secretary and for approving by the minster. OAG has also suggested the ministry to coordinate among stakeholders so that EIA can be approved within the time prescribed by the law.
7.	61st Annual Policy and Programs of the Government of Nepal	OAG has listed the sample projects that crossed the legally time bound period for approval. The time taken is divided into four stages; time taken for collecting evidences, time take for return of file after amendment, time taken for forwarding EIAs to the minister by the secretary and the time taken for approval by the minster. OAG has pointed out the reasons such as EIAs forwarded to the minister without complete documents, delay in return of files sent for amendments, non-inclusion of suggestions and opinions gathered in public hearings, no mention of the number of trees to be cut for project implementation. Attributing the delay in EIA as one of the reasons for project delay in Nepal, OAG has also suggested the ministry to coordinate among stakeholders so that EIA can be approved within the time prescribed by the law.
8.	Budget Speech 2023	The budget speech commits to amend the necessary laws for making provisions for approving the EIA within 30 days after the duly submission of environmental study report.
9.	Mid-term Budget evaluation report 2024	One of the common obstacles for the timely implementation of the national pride and game changer projects is long time taken by the EIA approval. The report has suggested streamlining the EIA approval process.

These policies, reports, and recommendations have shaped the guiding and operational framework for environmental study in Nepal. Auditor general reports, budget speeches, and evaluation reports have pointed out the reform areas as well.

Water (Prevention and Control of Pollution) Act, 1974; Environment (Protection) Act, 1986; Environment (Protection) Rules, 1986; National Environment Policy, 2006, and the EIA Notification 2006 serve as the primary policies that guide the environmental study in India. Similarly, Bangladesh has National Environmental Policy, 1992; National Environmental Management Plan, 1995; Environment Protection Act, 1995, and Environment Rules, 1997, which define the environmental study legal regime.

4.2 Approval Time Analysis and Comparison

4.2.1 Time taken by the Ministry of Physical Infrastructure and the Ministry of Energy

Environment laws in Nepal provide three types of environmental studies based on the scale and category of the projects. The Ministry of Physical Infrastructure and the Ministry of Energy are relevant ministries for BES and IEE approval of the projects of their respective sectors. They forward the EIA to the Ministry of Forests and Environment. The Ministry of Physical Infrastructure is responsible for bridge and road sector projects, while the Ministry of Energy is responsible for electricity and transmission line projects. They are allowed 15 days to approve or forward the study reports, as the case may be. A comparative analysis of summary statistics and timelines was conducted between these two ministries (Table 2).

Summary statistics of time taken by the Ministry of Physical Infrastructure and the Ministry of Energy

Table 2: Time Taken by Two Ministries for Environment Study Reports Approval

Statistics	Ministry of Physical Infrastructure				Ministry of Energy			
	TOR (BES and IEE)	BES and IEE	EIA	Overall	TOR (BES and IEE)	BES and IEE	EIA	Overall
Minimum	0	0	0	0	1	2	6	1
Maximum	302	335	269	335	56	90	42	90
Median	10	46	20	18	13	14	12	14
Mean	31	78	43	51	16	19	15	17
Standard Deviation	67	81	55	71	10	13	10	11
Count	43	42	42	127	230	275	34	539

The Ministry of Physical Infrastructure takes 51 days on average, with a median of 18 days and a standard deviation of 71 days. The table also shows that the Ministry of Physical Infrastructure takes 43 days just to forward the EIA to the MOFE, whereas the Ministry of Energy sends the EIA to the MOFE exactly in 15 days on average. Compared to the Ministry of Physical Infrastructure, the Ministry of Energy seems more efficient. On average, it approves all reports in 17 days. The median is 14 days, and the standard deviation is smaller than the mean. Two ministries with similar power, authority, and responsibilities for processing environmental study reports differ remarkably in terms of time taken.

The line plot portrays more nuanced and zoom-in views of what was happening during the approval period. The dotted blue line, a fitted regression line, shows decreasing time for both ministries. The blue line of the ministry of physical infrastructure starts at around 50 and falls gradually to approximately 40. The blue line of the Ministry of Energy starts from around 20 and falls as down as to around 17 days. Red lines show that the approval time taken by the Ministry of Physical Infrastructure is higher, more unstable, and more oscillating than that of the Ministry of Energy (Figure 2).

Although they have equal jurisdictions, their institutional designs are fundamentally different. MOPIAT (Ministry of Physical Infrastructure) reserves all the rights, making the ministry the focal point of environmental study. It receives proposals and environmental study reports from the Department of Road, makes decisions in the case of BES and IEE, and forwards the reports in the case of EIA. MOEWRAI (Ministry of Energy, Water Resources, and Irrigation) has delegated authority to the Department of Electricity Development (DoED) to oversee all the procedures job, retaining only the right to give final decision. Moreover, MOEWRAI has issued environmental study guidelines and manuals, which MOPIAT has not done.

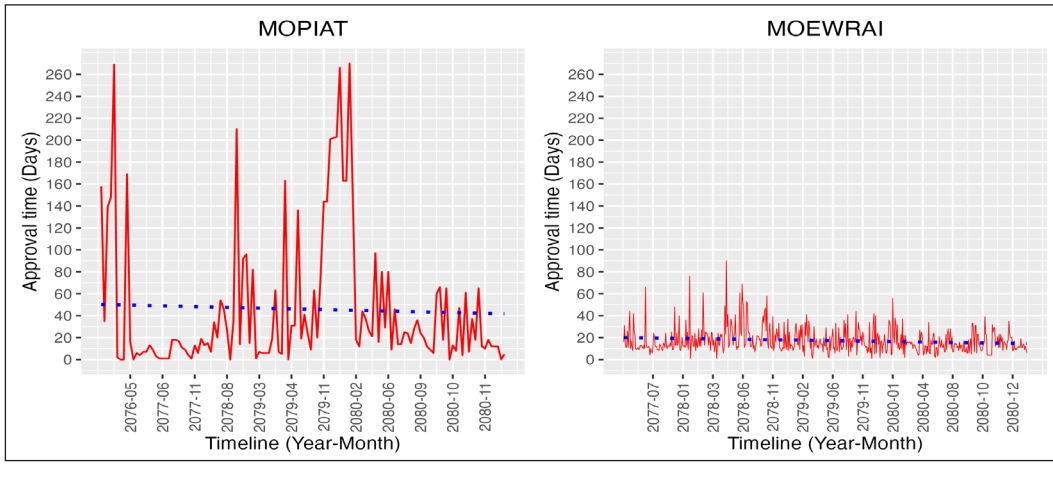

Figure 2: Time Taken for Environment Studeis Report Approval

Hydropower proponents use the environmental study guidelines for the hydro sector 2018 for preparing the reports. The guidelines clearly lay out the processes and methods of carrying out the study. Therefore, the guidelines issue is another MOEWRAI reform that the MOPIAT is lacking.

4.2.2 Approval Time Taken by the Ministry of Forests and Environment

Proponents desiring to implement the proposals related to the activities or projects mentioned in Annex 3 of the Environment Protection Rules, 2020, prepare the EIA

report and submit the same to the Ministry of Forests and Environment through the concerned ministry. The EPR 2020 clearly states that MOFE, if upon examination, finds that the execution of the proposals will not have a significant impact on the environment, should approve environment study proposals within thirty-five days with the caveat that the time starts from the date of receipt of the documents or the clarification sought by the MOFE.

Table 3: Summary Statistics of the Number of Days Taken by rhe Ministry of Forests and Environment to Clear the Eia Report

Sector	Min	Max	Median	Mean	Standard Deviation	Count	Proportion of Count
Medical College	123	142	132	132	13	2	1
Waste management	121	418	182	240	157	3	2
Hotel	116	427	236	265	77	26	14
Building	83	713	277	327	181	12	7
Others	62	772	308	332	225	16	9
Hydropower	47	1285	254	340	278	54	30
Bridge	88	686	205	352	264	16	9
Hospital	32	1289	290	355	279	20	11
Road	35	997	323	404	255	29	16
Industry	236	719	424	451	216	4	2
Overall	32	1289	273	339	239	182	100

Table 3 presents sector-wise summary statistics of the time taken by the Ministry of Forests for EIA approval in days. During the three-and-a-half years of the study period, the Ministry of Forests approved 182 proposals, taking an average time of 339 days with a standard deviation of 239 days. As the mean is higher than the median, i.e., 273 days, the distribution is skewed to the right, suggesting some proposals take an unusually long time for approval. This is also shown by the Max column in Table 3, which shows the very high range across the sectors. Though only four proposals, the industry sector EIA waited for the longest with a mean of 451 days, followed by the road sector 404 days, and the hospital sector 355 days. The hotel sector with a significant number of proposals, i.e. 26, got environment permission in 265 days on average. While industry, road, hospital, and bridge sectors are performing worse, medical, waste management, hotel, and building are performing better than the overall average. The hydropower sector with the most proposals almost coincides with the overall average.

The summary statistics vividly show that the average time taken for EIA approval is far from 35 days, as specified in the Environment Protection Rules, 2020. This indicates that something else is causing delay apart from the complexities of the reports, as all sectors are falling way off the mark. This also indicates that there is a need for serious reform in the existing EIA approval process.

4.2.2.1 Time Trend Analysis

The summary statistics are analyzed assuming the three-and-a-half-year occurrences of data as happening in a single point of time, ignoring the dynamics being played out along the passage of time. The new environmental laws, enacted taking power sharing in the new federal setting into consideration, empower the subnational governments to approve the environmental study reports and hence significantly reduce the burden of federal ministries. This phenomenon has enabled the Ministry of Forests and Environment to clear the reports faster than it used to be earlier.

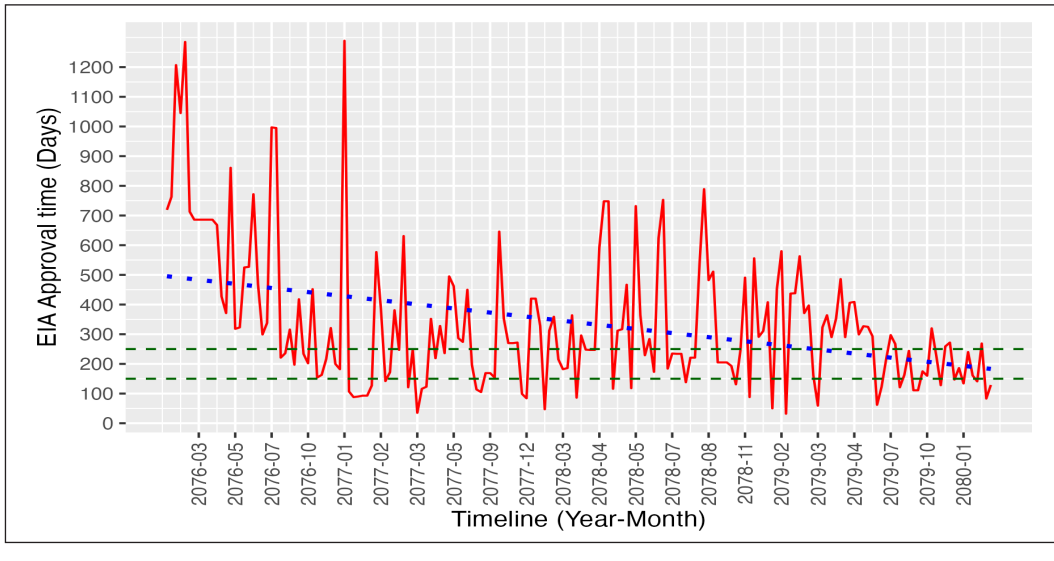

Figure 3: Time Taken for EIA Approval by the Ministry of Forests and Environment

Figure 3 aptly captures this reality. The fluctuation of time, especially the upward swing, is stabilizing after the issuance of new laws. The last period is marked by the period with little volatility as the time moves with the bands of 150 and 250 days, as shown by the green dashed lines. In a few instances, the EIA approval time has even come under 100 days. The blue dotted line shows that the time taken for EIA approval is continuously decreasing. Based on the past year's data, today, the EIA report takes around 200 days on average to get approval from the Ministry of Forests and Environment. Still, this figure is way higher than the legally mandated time of 35 days.

4.2.2.2 Proponent Wise Approval Time Analysis

In this section, we examined whether there is a difference in the average time according to the types of proponents. The EIA-requiring projects are proposed by the government and private sector (Table 4). The road, bridge, and medical college construction projects are mainly proposed by the government, whereas hotels and hospitals are mainly proposed by the private sector. Both types of proponents propose Hydropower and Building projects.

Table 4: Summary Statistics and Mean Equality Test Between the Private and Government Proponent

Type of Proponent	Min	Max	Median	Mean	Standard Deviation	Count	Percent
Government	32	997	293	348	221	91	50
Private	47	1289	248	327	256	90	50
Overall	32	1289	272	338	239	181	100
Two side mean t-test at 5% level of significance					Not Significant		

Although the mean number of days for projects where the private sector is the proponent is less than for the projects where the government sector is the proponent, the two-sided mean t-test shows the difference is not significant at the 5% level of significance. The general hypothesis is that the government proposals are cleared faster on account of influence, experience and familiarity. However, the data analysis fails to reject the null hypothesis that the two sectors are different in terms of the EIA approval time. This analysis indicates that the delays in environmental clearance do not come from the proponent side.

4.2.3 Approval Time in India and Bangladesh

Table 5: Year-Wise Delay in Grant of Environmental Clearance in India (EC)

Year of Grant of EC	Number of Projects	Number of Projects With Delays	Maximum Delay (Days)	Average Delay (Days)
2011	61	45	944	86
2012	56	54	588	184
2013	24	23	820	231
2014	25	25	761	316
2015 (up to July)	42	38	1,002	238
Total	208	185		

Source: Comptroller and Auditor General of India, 2016

Table 5 shows the sample of projects that were delayed in giving environmental clearance by the Union Ministry of Environment, Forests and Climate Change (MoEF&CC) in India from 2011 to July 2015. The Indian EIA notification 2006 provides 105 days to grant environmental clearance once the EIA report is registered in the ministry. According to the Comptroller and Auditor General of India's report and table 5, the average delay for granting permission increased from 86 days in 2011 to 238 days in 2015. Overall, 185 proposals out of 208, i.e., 89 percent, were not processed on time. The average time taken was more than 600 days. However, after the introduction of PARIVESH (Pro Active and Responsive Facilitation by Interactive and Virtuous Environmental Single Window Hub), a web-based integrated system for environmental, forest, wildlife, and coastal regulation zone clearance on 10th Aug 2018 (MOEF&CC, 2019), and together with other hosts of reforms including an additional incentive to the states reducing the environmental clearance time, the time for environmental clearance has been reduced significantly bringing down to 64 days in 2022 against the legally specified 105 days (MOEF&CC, 2023) for category A projects, as shown in Figure 4.

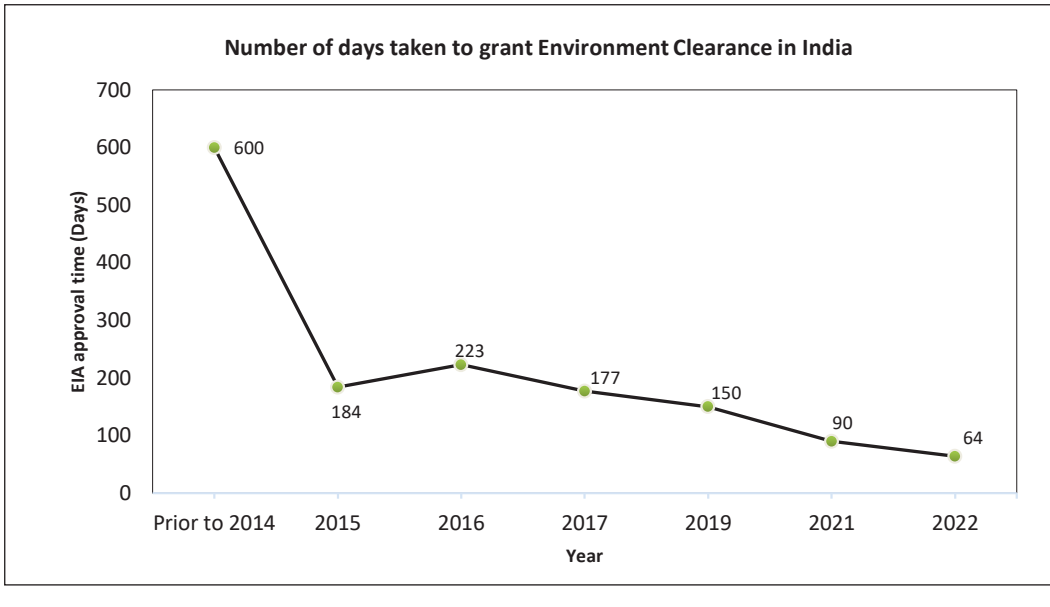

Figure 4: Time Taken for Environment Clearance in India (Source: MOEF&CC, 2014; 2015; 2016; 2017; 2019; 2021; 2022)

Although the legally mandated time for EIA approval once the final report is registered in the Department of Environment in Bangladesh is 30 days, the data for actual time spent cannot be collected. Therefore, an inference is made by

analyzing the research reports about the government project delay. Research on the factors affecting the timely completion of government projects does not report environmental concerns or EIA delays as causes of project delays in Bangladesh.

4.3 Process Comparison

The three countries have slight differences in the philosophy, principle, and process of addressing the environmental concerns of developmental activities. Bangladesh and India have the concept of environmental clearance, where the EIA reports are one of the documents along with many others in the list. In Nepal, approving environmental study reports, i.e., BES, IEE, or EIA itself, is the permission to go with the project. Proponents do not need to furnish supplementary documents regarding environmental disturbances or pollution in Nepal. In India, projects should obtain NOC from the SPCB (State Pollution Control Board) for air and water quality regulation. Bangladesh's environmental clearances are generally issued in two stages: first, a Location Clearance Certificate (LCC) and then an Environmental Clearance Certificate (ECC). Every project, even the projects under the green category, should apply for and obtain ECC from the Department of Environment.

Table 6 shows the comparison made on eighteen different areas of the environment clearance process. These eighteen aspects cover the key areas that have the potential to make differences in timelines of environment approval. All three countries have separate Acts and Rules. However, their scope and priorities are different. Environment Protection Act 2019 and the Rules 2020 in Nepal chiefly focus on preparing and approving environmental study reports, assigning the power to approve such reports to concerned federal ministries and the concerned subnational governments depending on the nature, scale, and size and projects or activities. Environment Protection Act, 1986, and the Rules, 1986, are the source legislation for environmental clearance in India. The EIA notification, 2006 provides all the details and processes for environmental impact assessment where the power to approve EIA rests on the Ministry of Environment, Forest and Climate Change for type A projects and SEIAA in case of category B projects. Bangladesh enacted The Bangladesh Environment Conservation Act, 1995, and the Environment Conservation Rules, 1997, with the powerful Department of Environment, which administers all the environment clearance matters.

Table 6: Comparison of the Process and System for Environmental Clearance in Nepal, India and Bangladesh

SN	Constituents of Process	Nepal	India	Bangladesh
1.	Legislation	Act and Rules	There are Act and Rules, but EIA is guided mainly by executive EIA notification 2006	Act and Rules
2.	Focus	Balance between development and environment	Conservation	Conservation
3.	Separate Guidelines	No	Yes	Yes
4.	Types of study	3 (BES, IEE and EIA)	1	1
5.	Approving authority and Jurisdiction	Federal MOFE, concerned federal ministries, Concerned Provincial ministries and Local governments. Jurisdiction is overlapping among federal agencies and across tiers of government.	MOEF&CC for category A projects, SEIAA for category B projects. Well-defined jurisdiction.	DoE. Well-defined jurisdiction.
6.	Nodal agency	Not specified	Specified	Specified
7.	Decentralization	Yes	Highly centralized	Highly centralized for EIA; but Environmental clearance can be obtained from district offices of DoE.
8.	Classification of Projects and Activities	3 (Activities requiring BES, IEE and EIA)	Mainly two; A and B; B is further classified into B1 and B2; A and B1 require to prepare EIA.	Four; Green, Orange A, Orange B and Red; Orange B and Red require to prepare EIA

SN	Constituents of Process	Nepal	India	Bangladesh
9.	Separate Scoping document (SD)	EIA requires separate SD. Not required for BES and IEE	NO	NO
10.	Separate Terms of Reference (TOR)	Yes	Yes	Yes
11.	Public Hearing	Two times; by proponent	One time; by government agency	No
12.	Opinions collection	Two times	One time	No
13.	Expert committee recommendation	Committee can only give opinions and suggestions. No recommendation.	Experts committee's recommendation is the basis for the decision.	Experts committee's recommendation is the basis for the decision.
14.	Expert involvement for report preparation	Mandatory; Qualification, experiences and composition of team mentioned in the Environment Rules	Mandatory; Sector and category wise organizational accreditation from QCI-NABET; research and educations institutions can work as environment consultant	Mandatory; Organizational accreditation from Bangladesh Accreditation Board
15.	Use of ICT	No	Complete and Full	Partial
16.	Incentives for faster processing	No	Yes	
17.	Statutory time bound	Partial; time specified for only the last stage; for forwarding and approving and with many caveats	Yes; Each and every steps are time bound	Yes; Each and every steps are time bound
18.	Fees	No	Yes	Yes

India and Bangladesh have issued guidelines detailing the processes of EIA, whereas Nepal needs a comprehensive document. Nepali laws provisioned three types of reports. India and Bangladesh have only one. Nepal's provision is more decentralized. Provinces and local governments can approve reports. In India, the federal ministry approves the EIA reports in the case of Category A and the SEIAA, constituted by the MOEF&CC, approves Category B projects. Bangladesh's system seems highly centralized. However, all the powers are with the department, which has delegated

the Environment Clearance Certificate (ECC) issuing authority to the district/ divisional offices and local bodies.

The document requirements and processes to be followed while preparing the EIA differ in three countries. In Nepal, the concerned authorities must approve a separate Scoping Document (SD) along with the Terms of Reference (TOR). However, the proponent proposes only the TOR in India and Bangladesh.

Public consultation has been given high importance in Nepal. Public hearings and notices in public areas, including the newspaper, are a must and rigorous. All types of reports, whether BES, IEE, or EIA, need public hearings. Public hearings are the responsibility of the government agency in India, and they have to be completed within a specified time. In Bangladesh, the law does not mandate a public hearing. Time and again collecting opinions and ensuring their inclusion in the report is another legal burden in Nepal. In contrast, that process is simpler in India, and there is no such provision in Bangladesh.

India and Bangladesh's concerned authorities based their decisions on the recommendations of the expert group. In contrast, the role of an expert is confined to providing suggestions and opinions on the reports individually and separately in Nepal. The use of ICT, statutory time bound, incentive for faster processing, and fees are some other areas that make the differences in environmental process in the three countries.

4.4 Threshold Comparison

Another area is the threshold of activities or projects that necessitate the preparation of reports. Even the process of BES preparation in Nepal has to follow the process that Bangladesh and India follow to prepare for the EIA.

Table 7: Threshold of Nepal, India and Bangladesh in Major Sectors

SN	Sectors	Nepal	India	Bangladesh
1.	Hydropower	BES: Electricity from magnetic energy IEE: hp 1-50 MW, Solar from 1-10 MW EIA: >50MW, solar >10MW	Not required: <25MW, B1: < 75 MW ≥ 25 MW A: ≥ 75 MW	Hydro not mentioned Red: Power plant
2.	Transmission Line	BES: up to 66KV IEE: 132 KV or more	Not required	Red(EIA)

SN	Sectors	Nepal	India	Bangladesh
3.	Hospital	BES: 16-25 beds, IEE: 26-100 beds, EIA: > 100 beds	B1: ≥1, 50, 000 sq. mtrs. of built-up area and or covering an area ≥ 50 ha	Red(EIA)
4.	Hotel	BES: 25 to 50 beds, IEE: 51 to 100 beds, any house boats EIA: >100 beds	B1: ≥1, 50, 000 sq. m. of built-up area and or covering an area ≥ 50 ha	Orange-B
5.	Bridge	BES: up to 250 M IEE: more than 250 M	Not required	Orange B: <100m, Red: ≥ 100m
6.	Road	BES: Local Road IEE: Flyover, up gradation of widening of road with length 10 to 50 km, internal waterways EIA: new road >25km km, upgrade >50km	B1: State-Highway expansion projects in hilly terrain (Above 1,000 m AMSL) and or ecologically sensitive areas National: New highways, widening >100km	Orange B: local road, feeder road, Red: regional, national and international road
7.	Building	BES: 20-30 m tall, 3000-5000 built up area, IEE: >30-45 m tall, >5-10 thousands built up area, housing 1-5 ha EIA: >45m tall, >10 thousands built up area	B1: >50,000 sq. m. built-up area	Orange B: Hotel, multi-storied commercial & apartment building.
8.	Education (Teaching hospital)	BES: up to 50 beds IEE: >50 -100 bed EIA: >100 bed	B1: ≥1, 50, 000 sq. m. of built-up area and or covering an area ≥ 50 ha	Not mentioned

Table 7 shows eight major infrastructure development sectors for which approval on the environmental reports has been sought in the past three and half years. The comparative chart showing Bangladesh and India has been presented. This chart clearly shows that Nepal's threshold is narrower than India's and less liberal than Bangladesh's in many instances. For example, electricity generation from magnetic energy needs BES, 1 MW to 50 MW hydropower generation needs IEE, and EIA is needed for hydropower with a capacity above 50 MW in Nepal. Hydropower below 25 MW does not need an environmental study in India, whereas the hydropower

threshold is not mentioned in Bangladesh. However, the power plants are classified under red categories, which need EIA. Even the local road has to conduct BES in Nepal regarding road construction. India has a broader threshold in terms of road construction, where EIA starts from a state highway above 1000 m terrain or ecologically sensitive areas. Local roads don't need EIA or environmental study. In Bangladesh, local roads and feeder roads are classified under category B, which may not need EIA. However, regional, national, and international roads are classified under the red category and need EIA. In India, hospitals, teaching institutions, hotels, or any building is treated as a construction building. It falls under the B1 category for buildings equal to or above 50 thousand square meters. No environmental study is required for any kind of building below this threshold. In contrast, the trigger is based on the number of beds, the height of buildings, and built-up area, and they are too narrow compared to India, as presented in Table 7.

5. Discussion

The results derived from the policy review, approval time comparison, process comparison, and threshold comparison reveal interesting legal and administrative features of the environmental study in three countries.

The policies and regulatory frameworks in place clearly outline the objectives and direction of environmental studies in all three countries. At the highest level, the environmental protection Acts in each country mandate environmental studies. Rules, guidelines, and decisions are subsequently framed to implement these Acts. However, the approaches taken by these policies differ. In India and Bangladesh, the focus is primarily on environmental conservation and improvement. In contrast, Nepal's policies emphasize conservation and maintaining a balance between environmental preservation and development (EPA, 1986; EPA, 1995; EPA, 2020).

In comparison to India and Bangladesh, in Nepal, there needs to be a nodal agency and blurred lines of responsibilities regarding environmental study jurisdictions at the federal level and among the three tiers of government. This has led to confusion for proponents seeking environmental clearance. This uncertainty complicates the approval process, as stakeholders often need guidance on which agency or level of government to approach.

Research and practices underscore the importance of clearly defining nodal agencies to enhance organizational performance within governmental settings. A lack of clarity can result in interdepartmental ambiguity, which significantly hinders service delivery and governance and leads to inefficiencies, accountability issues, and

delays (Agranoff & McGuire, 2001; O'Toole & Meier, 2004; U.S. Government Accountability Office, 2005; Carey et al., 2017; Ilawagabon & Ajisebiyao, 2024).

The three countries vary in terms of decentralization and delegation structure for administrating the environmental study. Such variation also exists among the three ministries of Nepal under study. In India and Bangladesh, the federal agencies have ultimate power. They have either established branch offices or appointed expert bodies to assess and approve the reports. In contrast, all tiers of government have the power to approve the study reports of the activities under their respective jurisdiction in Nepal. Therefore, Nepal performs better in decentralization than India and Bangladesh. However, India and Bangladesh have practiced robust delegation of authority systems. The differences in the organizational design, such as delegation of authority, have significant bearings on the organization's performance (Fayol, 1949; Dunham and Pierce, 1989; Bell & Bodie, 2012). Therefore, the federal EIA approving authority of Nepal, the Ministry of Forests and Environment, can learn from the good practices of not only India and Bangladesh but also from counterpart ministries, especially from the Ministry of Energy, Water Resources, and Irrigation, which has a better delegation of authority system.

EIA approval data presented in Table 3 and Figure 3 for Nepal shows that though decreasing, the average approval time is way higher than the legally mandated time and time taken by the Union Ministry of Environment, Forests and Climate Change (MoEF&CC) in India. Even if we assume the approval time taken in Nepal to be just 150 days, as indicated by some recent data points in the trend line, it is still 4.28 times higher than the statutory approval time of 35 days. This figure is only 0.61 for India as the approval time has come down to 64 days, which is against the statutory duration of 105 days. The stark differences between Nepal and India are not because of the history and legacy; India's average approval time was more than 600 days before 2014. The series of reforms introduced, including the digital systems, drastically reduced approval time in India. The PARIVESH system's automation has made India's environmental clearance process faster, more transparent, and more accountable (Hindustan Times, 2023; ThePrint, 2024; National Informatics Centre, n.d.; MOEF&CC, 2019, 2021, 2022).

Nepal's reforms predominantly target reductions in stipulated approval timelines as outlined in legal frameworks (EPR,2020). In contrast, India's approach combines these legal reforms with decentralization, digitalization, performance-based incentives, and rigorous monitoring and feedback mechanisms. Continuous improvements across the parts and processes have been involved. Furthermore, India's stable governance and leadership commitment to enhancing the business

environment have been pivotal to expediting EIA processes (MOEF&CC, 2019; 2021; 2022).

Though not explicitly mention the approval time, Kabir & Momtaz (2013) found a shortage of staff, lack of adequate decentralization, and paucity of budget as some of the challenges faced by environmental clearance practices in Bangladesh.

The limited public involvement in India has often restricted the representation of community concerns in development projects, resulting in frequent litigation in India (Dilay et al., 2018; Thayyil, 2014; Parikh, 2020). Though public consultations in Nepal are comprehensive, the approval process is often delayed due to lengthy and repetitive consultation procedures. Streamlining these processes while safeguarding community interests could help accelerate approvals without compromising public input.

A threshold comparison shows that despite similar social, political, and geographical sensitiveness, Nepal's thresholds are lower than those of Bangladesh and India, especially for EIA. If thresholds are revisited in the broader context, Nepal's environmental study procedures will be more streamlined and smoother.

The comparison of Nepal's environmental study system with Bangladesh and India reveals exciting findings. Nepal should draw lessons to improve on the numerous fronts in the overall environmental study system, such as administrative procedures, number, and type of report requirements, public hearing, use of information and communication technology, the role of experts, and design of incentive structures. These measures will help reduce the approval time.

6. Conclusions

Based on the policy review, data analysis on the clearance time, the process and threshold comparison with India and Bangladesh, and discussion of these results, several conclusions can be drawn about environmental study practices in Nepal. The conclusions focus on the system's lacunae, which needs reform to streamline environmental studies and foster the business environment in Nepal.

1) **Fuzzy Jurisdiction**: Nepal's environmental study legislation indicates that the system is primarily designed for government-initiated projects. Therefore, there is not much ambiguity regarding the projects to be implemented by government agencies. However, when a proponent from the private sector plans a project, he or she needs to consult other laws, including the unbundling report, to determine which tier or ministry holds the authority, as responsibilities

often overlap. Therefore, firstly, identifying the relevant tier and secondly, identifying the relevant ministry or agencies is challenging, especially for the private sector proponent. For example, if a private proponent intends to build a stadium, determining jurisdiction is complex because sports are managed concurrently at all tiers of government. Even if the relevant level of government is identified, the ambiguity persists regarding which ministry, the Urban Development Ministry or the Youth and Sports Ministry, administers the approval process. This seriously impacts the quality and timely completion of environmental studies. This problem doesn't exist in India and Bangladesh.

2) **Absence of Nodal Agency**: The environmental study report administering authority has been spread across all federal ministries, provinces, and local governments. At times, the jurisdiction has not yet been clear in the new federal setting, entailing jurisdiction disputes among the different levels of government. In the absence of nodal agencies, proponents are in the midst of figuring out the first contact point to apply for environmental clearance. This confusion contributes to the delay in environmental clearance. The confusion is more severe in the case of private industry and privately constructed infrastructure.

   The problem compounds when a project needs forest land. Being a national priority project is a prerequisite for any project to apply for forest land use. Therefore, even small-scale projects constructed in the forest land must be national priority projects, and subsequently, their environmental study reports administering jurisdiction lies with the specified federal ministry (EPA, 2019). The law stipulates that the environmental study reports should be submitted to the concerned ministry. However, identifying the concerned ministry takes more work. Therefore, the absence of a nodal agency combined with jurisdiction perplexities impedes the approval process for environmental study reports in Nepal. India has a single window system, and the Department of Environment is the nodal agency in Bangladesh.

3) **Lack of Integrated Clear-Cut Guidelines**: Unlike in Nepal, India, and Bangladesh both have prepared guidelines that guide the stakeholders, including the proponent and decision maker, to navigate the EIA process smoothly. Nepal has had such guidelines for hydro-sectors in the past. It has been obsoleting with the enactment of new laws.

4) **Multiple Reports**: Nepal's environmental study system has the provision of multiple types of primary reports: BES, IEE, and EIA. If there are changes to the project, like adjustments to infrastructure, design, structure, forest area, or project capacity, an additional Supplementary EIA is needed. There is also a provision for strategic and revised reports, separate scoping documents, and

TOR. While both SD and TOR are mandatory before an EIA in Nepal, only TOR is required in India and Bangladesh. The jungle of reports and processes adds confusion and financial burden. Bangladesh and India have a simpler system: a filling-up-form system for small-scale projects and single environmental study reports, i.e., EIA for larger projects.

5) **High Centralization**: Though environmental study reports are approved by all levels of government, the reports approval process at the federal level is highly centralized. In the absence of application of appropriate organizational and management principles, even the decisions that could have been made at the departmental or divisional level reach the ministerial level. For example, scoping and TOR documents are approved by the minister. Ironically, the Department of Environment (DoE), assigned with the task of preserving the environment and supposed to have the reservoir of technical and theoretical knowledge about the environment, has no role in administering environmental clearance.

6) **Frequent Opinions and Suggestions Collection**: Existing provisions require public hearings for all types of reports, and opinions and suggestions must be collected multiple times. This impacts the report analysis and approval process, leading to delays.

7) **Narrow Thresholds**: The threshold comparison in Table 6 states that the thresholds for preparing EIA reports are narrower in Nepal in comparison to India and Bangladesh.

8) **Lack of Expertise**: Nepal lacks a dedicated committee and agency to review, recommend, and approve environmental study reports, resulting in limited division of labor and specialization. In contrast, India and Bangladesh have a single window system and specialized committees to handle this process, resulting in enhanced efficiency and expertise in reports evaluation and approval.

9) **Lack of E-governance**: The striking difference between Nepal and the other two countries, and Nepal has ample opportunity for reform, is the use of e-governance. Bangladesh has smoothed the administration process, while India has brought about a revolution using an e-government platform called PARIVESH.

10) **Lack of Incentives**: India has an institutional incentive system to encourage faster document processing, but Nepal and Bangladesh lack such incentives.

11) **Fees**: Unlike in Nepal, obtaining environmental clearances is not gratuitous in India and Bangladesh.

12) **Logistics**: The lack of adequate resources, including human, financial, and logistics, is hampering the quest to streamline the process in Nepal.

Apart from the issues mentioned above related mainly to laws and administration, this study also found issues on the part of proponents that are delaying environmental clearance in Nepal. These include submitting incomplete and low-quality reports, submitting the additional documents sought by the authorities, and high dependency on consultants.

7. Policy recommendations

1) **Clear-Cut Jurisdiction**: Service-providing agencies should be defined unambiguously so that a public service seeker can contact the service-providing agency with ease and speed. The relevant tiers of government and the agencies in respective tiers should be clearly mentioned in the law. Currently, many relevant ministries still lack the environment section. Quality, efficiency, and effectiveness could seriously be compromised if these ministries, as such, approve the environmental study reports.

   First, the unbundling report and then the respective sectoral law should be revised to delineate the jurisdiction regarding the project and activities clearly. The projects should be categorized into sectors, and the responsible ministry should be specified for each sectoral category, with the Ministry of Forests and Environment responsible for the projects not classified under any category. This brings jurisdiction clarity and expedites the EIA approving process, along with ensuring the quality of the reports.

2) **Ascertain Nodal Agency**: Defining a nodal agency can have multiple benefits. In addition to faster document processing, it facilitates better coordination, improves accountability, and enhances monitoring and evaluation. Specialization can enhance quality. At the federal level, the Department of Environment should be made the nodal agency. In the provinces, the respective environment-related ministry should be made the nodal agency.

3) **Issue Guidelines**: No guidelines are in place to meet the proponent's needs as per the new Environment Act and Rules. Integrated guidelines with separate guidelines or procedures for each sector should be developed and immediately issued.

4) **Limit the Number of Reports**: Earlier, there used to be only two types of environmental study, namely IEE and EIA. The new law added one additional type of environmental study, i.e., BES, for the projects that just cross the

initial threshold. Multiple kinds of environmental studies create confusion for the proponent and increase the transaction cost. Therefore, it is advisable to have only two types of reports: IEE and EIA. The current threshold of BES should be removed with no study requirement until the size, scope and nature of the projects touch IEE threshold. Similarly, SD and TOR are different documents serving the same purpose. The SD and TOR should be merged into one single document.

5) **Delegate the Approving Authority**: Most of the administrative power has been given to the ministry by the law. The power conferred to the ministry by the law is the power to the highest authority of the ministry, and often, the minister uses such power either by oneself or by delegating it to the secretary. The inefficiency arises when the minister desires to exercise all the ministerial powers, including the administrative and technical and does not intend to delegate the powers to the bureaucracy. To remove this managerial inefficiency, powers to approve SD and TOR should be given to the relevant division chief whereas the power to approve final reports should be given to the secretary.

6) **Simplify the Public Consultation**: Seeking suggestions in writings from the stakeholders and publishing notices in the newspapers are recurring at every stage of the study. This provision has increased the cost of doing business in Nepal. Similarly, public hearings for even BES and IEE may not be appropriate, even from the perspective of impacts. Therefore, for BES and IEE requiring projects, collecting opinions and views in written form and publishing notices should be done only once. Public hearings should be reserved for only EIA-requiring projects.

7) **Loosen the Thresholds**: As presented and discussed in Section 4.4, thresholds should be raised higher so that the projects that do not significantly impact the environment could be kept outside the purview of environmental study. Many BES-requiring projects and few IEE-requiring projects should be made eligible to apply threshold relaxation measures.

8) **Increase the Role of Experts**: Assessing environmental study reports demands a higher level of expertise. Like in India and Bangladesh, where the expert committee recommends approving or not approving the report, experts should be given more decisive roles in evaluating the reports in Nepal.

9) **Digitalize the Process**: Like in India and Bangladesh, an integrated online system should be introduced to automatize the whole process.

10) **Introduce the Incentive Structure**: This is required to motivate the employees to exert greater effort to ensure the timely completion of the

process. When all processes are digitalized, an individualized incentive system can be implemented.

11) **Introduce the Fee System**: This will enhance the government's revenue base and make the proponent more responsible. As in India and Bangladesh, a fee, albeit a small amount, is advised.

12) **Improve Logistics Management**: Provision of adequate human, financial, and other logistics is required in the ministries, departments, divisions, and sections responsible for administering the environmental study.

8. Suggested Course of Action

Most of the policy recommendations suggested above come into effect through law amendments and cabinet and relevant ministries' decisions. Some suggestions may require additional budget allocation. Based on the experience and discussion with relevant stakeholders, I suggest the following course of action.

Table 8: Suggested Course of Action for Implementing Policy Recommendations

SN	Recommendations	Responsible Agencies	Suggested Action
1.	Clear cut jurisdiction	OPMCM, MoFE, MoLJPA,	Collect views and opinions from stakeholders, propose amendments to laws, obtain approval from relevant ministries and submit to the cabinet
2.	Nodal Agency	GoN, MoFE	Determine the nodal agency, conduct Organization and Management Survey to strengthen the capacity of nodal agency, make provision for resources, train employees
3.	Guidelines	MoFE, Relevant Ministries	Form a committee of experts, give them TOR, prepare sectorial and integrated guidelines, get approved from the minister
4.	Number of reports	MoFE, MoLJPA	Analyze the activities in the Annexes 1,2 and 3 of Environment Protection Rules, regroup them into two, propose amendments to the Rules, get approval from relevant ministries and submit to the cabinet
5.	Delegation of authority	MoFE, Relevant Ministries	Delegate power to the divisions, sections and team formed for assessing the reports
6.	Public consultation	MoFE, Proponents	Prepare the amendment proposals, include video recording of public hearing

SN	Recommendations	Responsible Agencies	Suggested Action
7.	Thresholds	MoFE, MoLJPA	Collect views and opinions from stakeholders, revise the current thresholds, make amendments to the relevant annexes, get approval from relevant ministries and submit to the cabinet
8.	Role of experts	MoFE, Relevant Ministries	Define roles, redefine the qualifications, propose amendments to the Rules, submit to the cabinet
9.	Digitalization	MoFE, E-Governance Commission	Prepare plan for integrated system, make directive for operating online system, purchase/ develop the system, train the employees
10.	Incentive system	MoFE, MoF	Prepare indicators, allocate budget
11.	Fees	MoFE, MoF, MoLJPA, FCGO	Amend EPA,2019, determine the fees, make online payment system
12.	Logistic Management	MoF, MoFE, Relevant ministries	Allocate adequate budget, procure necessary logistics, conduct O & M survey for additional human resources

Conflict of Interest Statement

The author has no conflict of interests to declare.

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