

# Legal Framework of Environmental Management with An Investment Project Life Cycle Approach in Vietnam

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**Abstract:** In order to achieve sustainable development, Vietnam has been adopting new development policies using a combination of the environment protection legal system, environmental economic instruments, sanctions, environmental standards, strategic environmental assessment (SEA), environmental impact assessment (EIA), and environmental protection planning (EPP). This paper deals with an analysis of the shortcomings of current legal framework for EIA and post-EIA. The result shows that the legal system of EIA was formed, developed, amended and supplemented continuously to fit with the recent changed situations in Vietnam. To cope with the dynamical economic development of the country, the legal framework is required to be more versatile and adaptive, to create maximum openness for the investment environment while still ensuring good environmental protection. The study findings provide a scientific basis for proposing an enhanced legal framework of environmental management to meet current demands of sustainable development in Vietnam.

**Key words:** legal framework, environmental management, environmental impact assessment (EIA), investment project life cycle (IPLC), Vietnam

## 1. Introduction

Industrialization and modernization in Vietnam challenge the Vietnam Government in ensuring both socio-economic development without damaged human living environment and the balance between economic development and protection of the natural environment [1]. Vietnam Government establishes harmonized development policies using a combination of environmental instruments such as the legal system, environmental economic instruments, administrative and criminal sanctions, environmental standards, strategic environmental assessment (SEA), environmental impact assessment (EIA), and environmental protection planning (EPP). For EIA particularly, the legal framework was formed in 1995, and since then has been continuously developed, amended and supplemented to suit the changes in both

environment and economy of Vietnam. The context of promoting the “open-door” policy encourages development investments to meet the goals of industrialization and modernization of Vietnam. The tasks of EIAs are creating the maximum openness for the investment environment while ensuring environmental quality. Over the past 20 years, the legal text has been continually amended, supplemented, and replaced. EIA appraisal procedures in more detail and more transparent [2]. However, the legal system of EIA reveals some limitations, especially in applying environmental management instruments to operational production facilities [1].

Internationally, specific objectives of EIA in other countries and international organizations focus on following issues: (i) ensuring that environmental and social considerations are addressed and linked to the investment decision-making process; (ii) identifying and clearly describing resources and environmental values in the project-affected areas; (iii) clearly

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identifying and forecasting the magnitude and scale of the project's impacts/potential impacts on the natural and social environment in the affected area; (iv) proposing and clearly analyzing alternatives to minimize adverse impacts, if the project needs to be implemented; (v) ensuring effective and feasible management and technology measures to minimize the negative impacts of the project to protect ecosystems and mitigate negative social impacts; (vi) the environmental management program or program (EMP) must ensure safe and practicable environmental management throughout the project [3-7]. Overall, it is believed by most countries and international organizations that the long-term goal of EIA is to: "Strengthen sustainable development by ensuring that development proposals (projects) do not threaten resources, components of ecosystems and human health while benefiting society" [7].

Along with economic and technological analysis, EIA contributes to making development decisions about projects more accurate. EIA is considered as a process of synthesizing scientific studies to predict, properly evaluate the future impacts of the project, and exhaustively analyze environmental and economic alternatives. Most EIA technical documents specify conduct of an "EIA study process" rather than merely "preparation of an EIA report" as set out in the terms of the Decrees and Circulars of Vietnam. Each country has its own regulations on EIA: from the concept, process, and content to the method of implementation and appraisal (for example: each ASEAN country has their own regulations on EIA distinct from EIA in other SEA countries). However, most developed and developing countries adhere to requiring EIA content to cover the most important environmental and social issues as set out in the Johannesburg Declaration on Sustainable Development (2002) [8], and therefore have relatively similarities in their EIA process.

With the above determination of environmental components, the EIA regulations of international organizations, such as ADB, IFC, JICA, Sida, UNEP,

and WB) [6, 7] and the European Union (EU)[16] and many countries require EIAs to forecast, evaluate, minimize and monitor impacts on all environmental components related to project impacts, not just for the physical environment (soil, water, air) but also for the biological environment. Further, many international organizations (WB, IFC, ADB, among others) and some countries (such as United States and Russia) not only create guidelines for assessing the impact of pollution but also detailed guidelines on ecological impacts, ecological risks, biodiversity, and climate change in the EIA process [5].

Regarding social impact at different levels, international organizations (including ADB, JICA, WB, UNEP, SIDA), developed countries (including countries of the European Union, the United States, Canada and South Korea) and many developing countries in Asia, Latin America, and Africa all require consideration, forecast and proposed mitigation of social impacts in EIA studies. Some countries and international organizations also require research and preparation of environmental and social impact reports (ESIA); some countries, such as Canada and Thailand, even require separate reports on the health effects (Health Impact Assessment: HIA). If the environment is understood in the broad sense as analyzed above, ESIA or HIA is also considered a type of Environmental Impact Assessment (EIA) [3, 5].

Projects with resettlement components face the complexity of multiple socio-economic issues on a large scale, while EIA usually cannot consider all these socio-economic impacts, being confined to only forecasting, assessing and mitigating adverse impacts on communities directly affected by project activities (e.g., social impacts due to site clearance and resettlement as impacts on production and business, social income, impacts on indigenous peoples, impacts on buildings/physical heritage; impacts due to noise and vibration pollution on health and daily life; pollution impacts on health and primary resources production). Therefore, many international

organizations such as WB, ADB and many countries have requested the project owner of large-scale resettlement-related projects to carry out resettlement research and prepare reports on assessment of social impacts (Social Impact Assessment - SIA) separately, to be submitted to them alongside the EIA report.

The Hanoi Core Statement on Aid Effectiveness, signed by Vietnam with international and donor organizations on June 3, 2005 clarifies the contents and objectives of “harmonization” of environmental protection and economic development, including, in Indicator 8, that EIA be “implemented to international standards” [4]. However, currently, apart from some similarities, there is still a big gap between the requirements of EIA content (in a broad sense including environmental impact assessment and social impact assessment) in Vietnam and those of international organizations. This article deals with an analysis of the existing legal system, environmental impact assessment and management of investment projects in the different phases of projects. Two points support this. First, the findings from assessing the current status of the environmental impact assessment system and the reality of Vietnam’s environmental management, control and monitoring, noting problems and possible solutions. Second, the findings from proposing an improved legal framework, technical procedures for environmental impact assessment works and control, and environmental monitoring of investment projects.

## 2. Material and Methods

The logical steps of this study are as follows:

- Systematic reviews: reviewing Vietnam’s system of legal documents relating to environmental impact assessment (EIA). The conditions and resources of the system in the context of Vietnam is assessed. Problems and challenges, and lessons learned from EIA management practices in Vietnam are identified [12].
- -Data collection and processing: Available data in the country and internationally as well as methodologies related to EIA from all available sources and from research of several Vietnamese scientists in recent years. Official documents are collected from selected Provincial Departments of Natural Resources and Environment, enterprises, and research institutions. Primary data are collected using questionnaire surveys [12]. Opinions of experts are gathered in workshops and focus group discussions (FGDs).
- Comparative study: a comparative study of legislation on EIA systems, the environmental management tools in post-EIA stages of other countries as well as of organizations such as UNEP, World Bank, ADB, to identify the similarities and differences, determining the general and specific development trends, from which suitable solutions were selected and proposed to be suitable for institutional conditions, legal policies, socio-economic conditions in Vietnam [2].
- Research on regulatory impact assessment (RIA): implementation impact assessment of draft proposed regulations will provide predicted outcomes, enabling evaluation of positive and negative effects of different proposals. Such evaluation of results enable clear comparison of options. During the assessment process, many options for a number of provisions in the draft text of the revised Law on Environment Protection 2014 will be considered. Information on the positive and negative impacts of the selected options will be discussed. Such information is especially useful when there are many different opinions on the content of the draft Law [2].

### **3. Results and Discussion**

#### *3.1 The Limitations in the Legal Framework on Environmental Impact Assessment and Environmental Management in Vietnam*

##### **3.1.1 Limitations on the Effectiveness of the Application of Existing Regulations in Environmental Protection Management**

EIA is listed as a projected environmental instrument applied at the considered and approved stages of an investment project. Vietnamese authorities applies EIA as a universal tool to protect the environment throughout the project's life cycle. This makes EIA more complex and wide-ranging, extending coverage beyond the scope of normal EIAs to everyday operations, distorting its meaningful role as impact assessment. Fundamentally, in EIA, the design of the project determines the source of the impact on the environment, while the state management agency only contributes opinions on the project's basic design, prior to any approval from the authorities. Basic design and detailed design for the next stages of the project are approved by the investors, so in some cases (for investors with a low awareness of environmental protection), the level of trust on investors' designs pose certain limitations. In addition, there are components which will be changed in the later design compared to those in the approved EIA report. This is one of the challenges for EIA appraisal agencies and post-EIA management [2-4].

The legal system is still inconsistent, revealing gaps and shortcomings of many guiding documents. Specifically, technical regulations are still inadequate. There is a lack of environmental mechanisms and criteria for effective screening of production types and production technologies. The EIA evaluation and approval process for project investment still cannot screen out production types and technologies which have potential for heavy environmental pollution, projects with obsolete technology or, investment projects in environmentally sensitive zones.

Environmental economic instruments such as taxes, fees, and others related to the environment merely perform the function of generating state budget revenues, without promoting a macro-economic control role directed at ensuring socio-economic activities are harmonious with nature, environmentally-friendly and supporting sustainable development [11].

Currently, the implementation of management, inspection and supervision of compliance with the Law of Environmental Protection facilitates the operating phase results in an overlap between other environmental instruments. State management agencies still mainly conduct inspections based on EIA reports but as a science-based assessment, the EIA report is only a forecasting tool to provide a foundation for investment approval of a project. During the operation phase, the environmental issues of the facility may completely differ from those forecasted in the EIA report, so the implementation of environmental management and monitoring activities, the inspection, sanctions and enforcement of sanctions based on this report may well be off-target.

Socio-economic consequences of some environmental risks in Vietnam recently, for example, from the Formosa Ha Tinh Steel Complex in 2017, and from bauxite mining in the Central Highlands in 2016, point out the limitations of the "end of pipe" pollution control approach, which relies only on EIA and effluent standards. The lack of measures and tools to control the production process and waste management of facilities leads to low efficiency of pollution control, while potential risks are difficult to detect and handle, or resolved in a timely manner, which then can easily lead to serious consequences. On the contrary, due to the lack of management and monitoring by the investors in the facility, once environmental incidents occur, the management agencies face many difficulties in identifying the causes and come up with the solutions [5, 11].

### 3.1.2 Regarding the Legal System Related to EIA and Environmental Protection

A number of provisions in various laws of Vietnam, such as the Investment Law, the Construction Law, the Law on Environmental Protection, the Law on Public Investment, and the Planning Law are still mutually incompatible. Some regulations in the system of legal documents on environmental protection are not consistent with the Vietnam context and lack a scientific basis. There are no specific regulations on management tools for the inspection and supervision of environmental protection of the project for all its stages from preparation, construction, commissioning, and commercial operation through to project closure. In the Law on Environmental Protection 2014, social factors including requirements for social impact assessment are overshadowed and limited in the EIA regulations in particular and in all regulations related to environmental and social assessment in all stages of the overall project life cycle. Regarding the concept of Environment and Environmental Impact Assessment as specified in the current Law, it is difficult to require the project owner to carry out any social impact assessment of a project, particularly during the project preparation phase, although this is considered as a crucial basis for assessing the project's impact on environment, local communities and wider society in order to approve the policy and/or make a decision on project investment. Therefore, the concept of the Environmental Impact Assessment must be more clearly defined to include other social and cultural issues [20].

Regarding public consultation during EIA implementation: Law on Environmental Protection 2014 contains provisions on consultation purposes, responsibility of project owners to organize consultations and projects which are subjected to a public consultation process. However, this law does not specify the time to be taken to conduct consultations and only requires consultation with the people directly affected by the project [2].

### *3.2 Available Post-EIA Environmental Management Instruments for Effective Environmental Protection Management*

#### 3.2.1 Environmental Management Plan (Environmental Management Plan - EMP)

The environmental management plan is a planning tool for implementation of the mitigation measures considered for the entire project life cycle with the flexibility to be amended as needed, for example, it can be revised every 3 years [3]. An environmental management plan usually covers the following [14]:

- Mitigation measures: mitigation measures deal with all actions to eliminate, offset, or reduce potential impacts significantly to an acceptable level. Each mitigation measure is briefly described with reference to the impact it is related to and the conditions for implementation. Where necessary, design drawings must be included that clearly state the works, equipment and operating procedures. Targets and parameters are set in a quantitative and specific manner. Project owners may consider previous proposals in EIA reports, including;
- Measures to ensure the achievement of the set objectives;
- Responsibilities of the stake-holders;
- Environmental monitoring program with environmental indicators for impacts; and
- Schedule and criteria for reviews.

#### 3.2.2 Environmental Audit

An environmental audit is an assessment to determine compliance with environmental protection commitments and identify gaps in the environmental management system. Basically, an environmental audit is an environmental management tool to measure the impact of certain environmental activities against specified criteria or standards. There are usually two different types of environmental audits: compliance audits and management system audits. Compliance audits are commonly applied in the US. The

compliance audit aims to review the project owner's legal compliance status when operating a project (US EPA, 2019 & WB, 2019).

There is a clear distinction between environmental audit and EIA. As mentioned, EIA is a forecasting tool, taking place before an action is taken; it therefore tries to anticipate the environmental impacts of a future action and to inform decision makers about whether the project should be implemented. Environmental audits are carried out when the project has been implemented at a specific location and are used to examine and assess the environmental impacts of ongoing activities. The International Standards Organization (ISO) has issued a series of standards in the field of environmental auditing. These standards are basically intended to guide organizations and auditors on general principles for conducting environmental audits [9].

### 3.2.3 Environmental License

Two approaches can be applied for environmental licensing. The first one is integrated environmental licensing, which is applied in EU and OECD countries). The second one is using single environmental licenses for different environmental operations, which is applied in the United States, Australia, and China. The application of an integrated or single license system depends on the legal system and the actual situation of each country, however, they ensure the principle of not overlapping as a specific object cannot be subjected to both approaches of licensing. Following the current trend, some countries, such as South Korea, are transitioning from a single license system to an integrated license system, especially for large-scale projects that have a large impact on the environment. In some EU countries, e.g., Germany, environmental permits not only stipulate and allow for environmental issues, but also extend regulations on construction requirements and conditions [10].

### 3.2.4 Monitoring and Compliance

In the Law on Environmental Protection 2014, environmental monitoring is defined as “a systematic monitoring process of environmental composition,

factors affecting the environment to provide information to assess the current situation and changes in environmental quality and negative impacts on the environment”. Environmental monitoring is a routine process of measurement and monitoring the physical and chemical properties of environmental components in order to provide information on environmental impacts and changes at different time intervals. Environmental monitoring is the monitoring of environmental quality in regularly basis to provide information for environmental protection activities and sustainable development, including the following specific objectives: (i) provide assessment of developing of environmental quality on the national scale for developing annually national environmental reports (ii) Providing assessments on the environmental quality changes in each of the key areas to be monitored to provide information to the state management immediately (iii) Timely alert of unusual events or risks of environmental pollution (iii) Develop a database on environmental quality for provision and exchange of information within the country and on international level [2, 20].

Two monitoring programs are applied in Vietnam and over the world: periodic monitoring by direct sampling by analysts, collecting data on environmental components in the project area and automatic environmental monitoring system, which continuously monitors and transmits data to the authorities. In particular, the advantage of automatic environmental monitoring is that it is possible to remotely control the system by connecting to the internet or promptly detecting negative changes from the environment without taking much time and human resource to analyze the environmental components.

Environmental monitoring program is mandatory content in an EIA report of investment project. The project owner is required to develop an overall environmental monitoring program and implement environmental monitoring in the project phases including: site preparation, construction, operation and

project closure (with removal of structures). A highly effective environmental monitoring program requires coordination between relevant stakeholders, including: the investor, the local and central environmental state management agencies, sampling technicians with appropriate funding to maintain and operate.

The environmental monitoring results serve as a fundamental data for state agencies to inspect and examine the enterprises' compliance with the law on environmental protection, as well as provide information on the current state of the environment baseline in the area to formulate management plans and planning to ensure environmental protection and sustainable development.

## 4. Discussion

### 4.1 Differences in Vietnam and International EIA Requirements

In Vietnam, both Ministry of Natural Resources and Environment (MONRE), Departments of Natural Resources and Environment, EIA consulting agencies and EIA appraisal boards pay attention to waste sources and pollution. However, the considerations on ecological impacts and social impacts are limited. Although the provisions of related Circular have placed more emphasis on the requirements of assessing socio-economic impacts as well as impacts on the biological environment and biodiversity, they are not as detailed as the requirements in “Main Safeguard Policies” of WB, IFC, and ADB and many other countries.

Classification/categorization of project types: There are differences, but not significant differences, between Vietnam's system and that used elsewhere: the provisions of Decree 40/2019/ND-CP are much more detailed than the classifications used by WB, ADB and JICA. According to WB and JICA, projects are classified into categories (Category) A, B, C, F, allowing immediate identification as to whether projects require detailed EIA (Class A projects) or preliminary EIA (Class B projects), or do not need EIA (Class C projects).

According to ADB's classification, Initial Environmental Examination (IEE) is required to determine a Category A or B project requiring detailed EIA [6].

The process of steps in EIA: The current regulations of the MONRE do not include the following steps: preparation of EIA (preparation of Terms of Reference - TOR); determination of the scope of EIA (Scoping); and analysis of alternatives.

Approach and method of forecasting, assessing impacts and minimizing adverse impacts on the biological environment, biodiversity and social factors: MONRE has issued a number of EIA technical guidelines for a number of types of projects but there are no appropriate requirements and guidelines for assessing particular impacts, such as ecological impacts, integrated impacts, health impacts, environmental risk/incident analysis, impacts of climate change, impact on non-physical assets, impact on indigenous communities; impacts due to site clearance and impacts of resettlement. In contrast, many international organizations have instructed and requested consideration of these impacts.

Requirements for forecasting and assessing the levels and importance of impacts: Current legislations have not yet stated these requirements, so that a large number of EIA reports list many types of impacts, especially waste impacts, but do not focus on identifying the impacts which are important (that is, of great significance due to the long-term and significant impacts on the environment and society).

The concept of the role, methods of preparation and usage of the “Environmental Management Program/Plan” has not taken into account the “Environmental Management Program/Plan” both in terms of content and practical use, as this is only one chapter of the EIA report.

Roles and ways of community consultation, stakeholders; Participation and disclosure: This is a major point of difference because of differences in perceptions of stakeholder roles: while international

and many national regulations require a lot of meaningful public consultations during the EIA research and appraisal phase (according to WB, ADB, JICA: at least 2 consultations) with stakeholders and interested people, under many forms (private meeting, public meeting, and through the media). Meanwhile, existing Circular only requires one consultation and only consultation with a number of people who may be directly affected [1].

Requirements on the subjects that need to be monitored, the content and implementation of monitoring after EIA approval: This is another significant point of difference, since international organizations require (i) monitoring and evaluation of the investor's compliance with management and environmental protection requirements in the EMP, and (ii) monitoring of the environmental impact of the project (monitoring changes in environmental quality/pollution, ecological and social impacts in affected areas).

The most significant difference from usage in other countries and in international organizations is that Vietnam is applying the original EIA report as a universal tool to control the environment protection throughout the project life cycle, making the EIA more complicated, shifting from its primary purpose and distorting the role and meaning of EIA. According to international experience, it is necessary to apply the system of environmental management tools according to each phase in the project life cycle and EIA is a long-term process, not a one-time task as currently practiced in Vietnam.

The quality of EIA depends on the investor, the consultant firms, the type of project, the implementation resources, the appraisal council, and the appraisal unit. It is undeniable that the role and contributions of EIA have been significant in the country's development in recent years; however, the EIA and the management of the whole EIA system have not been very effective due to many objective and subjective reasons [1].

#### *4.2 Proposing Amendments to EIA Vietnam System and Post-EIA Environmental Management Instrument*

##### *4.2.1 Proposed Regulations Have to Share Commonalities With Related International Regulations*

- Impact assessment must be implemented at the stage of project proposal to the stage of project grant or approval;
- The environmental impact assessment must analyze alternatives for the proposed activities of the investment project.
- The impact evaluation of an investment project must be based on information provided by the project owner and information obtained from relevant organizations and individuals;
- The public has the right to access information about investment projects and participate in public consultation activities in the process of environmental impact assessment, excepting projects listed as state secrets.
- The process of environmental impact assessment must be comprehensive and transparent and complying with legal principles, development planning, scientific methods and sustainable development.
- The environmental impact assessment must be applied to all activities within the scope of the investment project, which may have a significantly negative impact on the environment and public health, and consider impacts of vulnerable groups (indigenous ethnic minorities and local communities, whose livelihoods depend on natural resources).
- In an area where there is more than one investment project, the environmental impact assessment of a new investment project must cumulatively evaluate the impacts of all existing projects.
- During the process of environmental impact assessment, the project owner must facilitate community consultation activities in accordance with the law.

- Environmental impact assessment should be done by multidisciplinary or interdisciplinary expertise, using the best practical scientific methods.

#### 4.2.2 General Regulatory Orientation

- Classifying of projects which are subjected to EIA and level of EIA into project groups: the project classification is based on the criteria of project type (identification of potential pollutants), scale of the project, the sensitivity of the environment where the project is implemented. This classification serves as the basis for environmental management of the project according to its impact on the environment. Investment projects can be categorized into following groups: Group I- with a high risk of causing environmental pollution; Group II- has the potential to cause environmental pollution; Group III- has the potential to cause minor environmental pollution; Group IV- has no environmental impact or insignificant impacts.
- Clearly defining EIA process for each project group: Projects of Group I and Group II need to follow the full EIA process; Group III projects will follow a simple procedure (screening — results); projects in Group IV — no EIA needed [18, 19].
- Clearly specifying the contents of preliminary EIA, defining the scope of an EIA report, contents of an EIA report, requirement of public consultation, appraisal, roles and responsibilities of related stakeholders.

#### 4.2.3 Specific Regulations

##### a) Preliminary EIA

Preliminary EIA is carried out by the project owner during the pre-feasibility study phase for projects of groups I, II or III. The preliminary EIA covers the following contents: the project's suitability with the environmental protection planning and other relevant

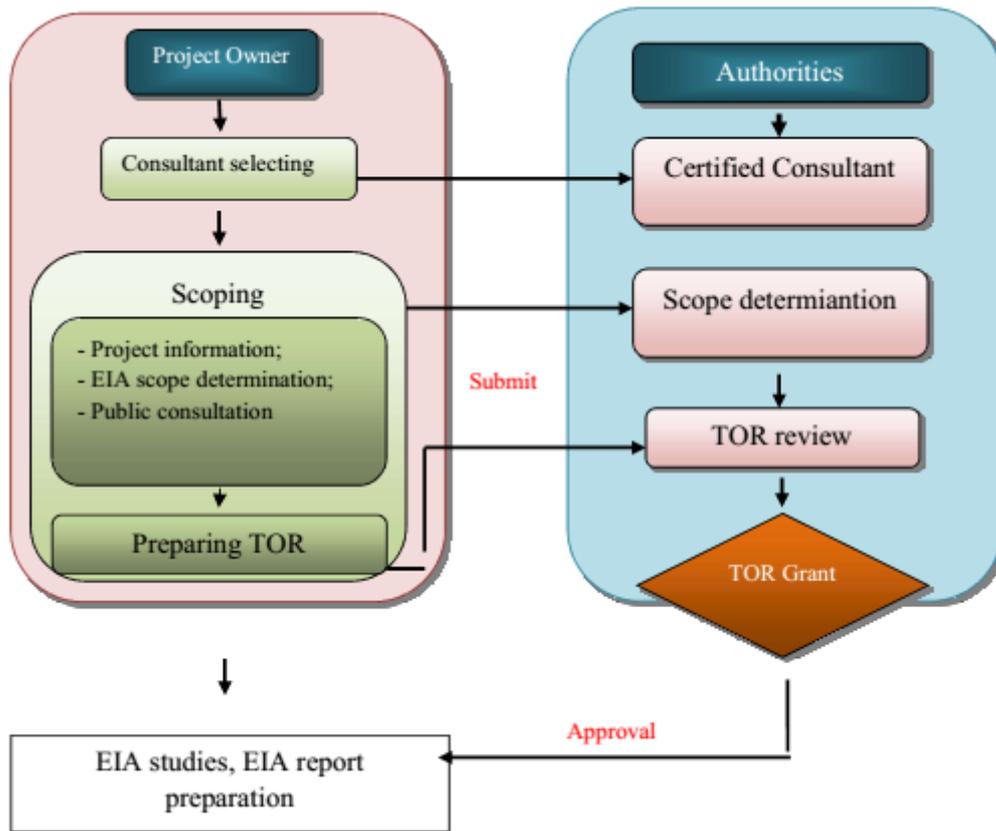
development plans; significant features, the sensitivity of the natural and social environment in the project implementation area; options for project location; assessing the environmental sensitivity of the project area according to the choices of location; forecast the main impacts of the project on the environment and society; types and scale of waste generation; measures to minimize negative impacts on the environment; waste treatment plan; measures for prevention and response to environmental incidents; consultation with related stakeholders; significant considerations during EIA study. In order to synchronize with the provisions of law on investment and construction, preliminary EIA must be clearly stated as a basis for approving the investment policy of the project and carrying out feasibility study of the project [18, 19].

EIA scoping: supplementing the provision of “EIA scoping” as an incentive step while carrying out EIA for group I or group II projects. The results of determining the scope of EIA are expressed in the form of “Term of Reference” (TOR) (Fig. 1) with the following main contents:

- The current legal background for complying with the EIA process;
- The level of detail of coverage of spatial and temporal information required in EIA studies relating to the scope of the project;
- Data needs, clear data sources, necessary documents and data needing to be additionally collected with proposed collecting methods;
- The major potential impacts of the project need to be evaluated in detail;
- The recommended methodologies used to forecast and assess the significance and severity of the environmental impact;
- Criteria, standards and regulations as a basis for assessing the significance and severity of impacts;
- The authorities and stakeholders involved in the EIA process, both as required by law and those not required by law; The necessary

consultations carrying out in environmental studies; Plan and schedule of consultation activities during EIA process.

- Resources (including experts’ participation and funds) and EIA implementation time.
- The TOR is one of the bases for appraising the EIA report of a project.



**Fig. 1** Process of TOR determination and granting.

**b) Clearly Defining the EIA Study Contents**

Clearly defining the EIA study contents include a brief description of the project; assessment of technology selection; components and activities bearing potential risk of causing adverse impacts on the environment and society; assessment of the current state of the natural, socio-economic environments where the project is implemented and explaining the suitability of the selected location for the project; assessment and forecast sources of wastes and impacts on environment and society; analysis, evaluation and forecast the impacts of on important natural landscapes (if any); forecast and assessment the project’s environmental risks and significance of incidents to the environment and society when environmental incidents

occur; waste treatment measures; measures to achieve the goals of maintaining aesthetic, protecting integrity, long-term use of the important natural landscape; distributing reasonably benefits earned from landscape use (if applicable); measures to minimize environmental impacts and impacts on public health; results from public consultation; environmental management and monitoring program; cost estimates for construction of environmental protection works and implementation of measures to mitigate the negative impacts; plans to implement the environmental and social protection measures.

The impacts on society need to be studied more broadly than required in Vietnam’s current regulations as it must include the consequences of the loss of land

and jobs, which negatively affect livelihoods of communities. For households who have lost their residential land and are to be relocated to another place, the negative impact includes social isolation, with the loss of contact with a network of relatives, community and society constituting a fund of social capital built up over many years. Only after a thorough assessment of these impacts, can the appropriate mitigation measures be drawn out and taken, not simply monetary or land compensation, as often seen in current EIA reports.

Biodiversity factors should be comprehensively assessed, focusing on: ecosystem and ecosystem services; habitat includes: loss of habitat, isolation and fragmentation of habitat; quantity and quality of indigenous species, other endemic, rare or endangered species inscribed in the Red Book; behavior of species.

Climate change factor need to be mentioned include: natural gases such as water vapor ( $H_2O$ ), carbon dioxide ( $CO_2$ ) and gases from man-made activities such as methane ( $CH_4$ ), nitrogen oxides ( $N_2O$ ) and chlorofluorocarbon gases (CFCs), as so-called greenhouse gases (GHGs), have a great negative impacts on the atmospheric radiation; reduction in carbon dioxide intake due to vegetation coverage clearance [7].

#### c) EIA Consultant Certification System

The environmental laws of various other countries in the world as well as of Vietnam stipulate that the preparation of EIA reports is the responsibility of project owners or consultants. However, in practice it becomes clear that: (i) Finding and selecting EIA consultants is very time-consuming and difficult because most of the project owners do not have information about the consulting organizations present in Vietnam; (ii) Professionally unqualified consultants lead to an unsatisfactory quality of EIA reports.

Therefore, in addition to the requirements for an EIA consultancy organization, the issuance of an EIA consultant certificate should be specified in the Law on Environmental Protection. It helps to make EIA consultancy work in Vietnam a more legally-controlled

activity, the selection of EIA consultants more efficient and better-targeted, and improve the quality of EIA in general and the quality of EIA reports in particular.

Subjects to be granted with EIA consultancy practice certificates include organizations and individuals who conduct EIA consultation activities both domestically or intentionally. Organizations and individuals that are granted EIA consultancy certificates must ensure the criteria prescribed by competent state agencies, including appropriate professional qualifications, experience in EIA and adherence to professional ethics.

The authority to consider and issue EIA consultancy certificates is the state agency with environmental competence, which is MONRE. The validity of a certificate is an important factor in ensuring that the capacity of EIA consultants is always met; normally this would be for 5 years.

#### d) Appraisal of EIA Reports

State agencies review but do not approve EIA reports as present, instead, proposed regulations imply the competent state agencies only issue notice of EIA report review results as a basis for other appraisal agencies review feasibility study reports and basic designs of the projects, granting mineral exploitation permits, issuing environmental permits, etc... The project owner must be responsible for acquiring, modifying and finalizing the EIA report, feasibility study report or investment project report in accordance with the written notification of EIA report appraisal results. The appraisal process is carried out by the council, or appointed unit which have capability and recognized by state agencies. Following up the written notification of appraisal, the project owners have responsibilities to complete the feasible study, fully considering the environmental requirements as recommended by the appraisal agency. This change aims to enhance the project owner's responsibility in implementing EIA regulations and in accordance with international practice.

#### e) Supplementing the Regulations on Environmental Management Plan (EMP)

The project owners can develop, update and approve the EMP by their own and have to be responsible also complying to related laws and regulations on the contents of EMP they approve. This serves as the basis for the project owner to adopt environmental protection measures and the environmental monitoring and supervision program. Furthermore, it is the basis for the competent agency to grant an environment license, inspect, examine and supervise the project's environmental protection work during project implementation stages.

f) Supplementing Environment Licensing System

The main goals of environmental licensing are: to improve the effectiveness and efficiency of administrative tools in state management of environmental protection; to reform administrative procedures, and to create a clear environment for production and business activities of enterprises but still ensure achievement of the goal of pollution control and environmental protection.

Regulations on environment permits have been studied with a view to developing integrated environmental permits for investment projects. The environment-related permits (certificate of completion of environmental protection works, water discharge permit emissions, emissions, noise, hazardous waste treatment, solid waste, other specific waste) of a project will be combined into a single integrated environmental license. This license will clearly state the purpose, requirements, type and subjects which require environmental permits. Suitable contents and procedures for granting environmental permits are to be developed for each type of business line and for groups of projects with different environmental risks and social-environment impacts [15].

The regulations will replace all existing regulations on permits, and environmental procedures for the project in the operational phase, which are stipulated in the Law on Environmental Protection and in other relevant laws and documents under the laws, ensuring

supportive investment margins for investors also maintaining environment protection goals.

Subjects of licensing: Projects subject to EIA implementation and projects generating wastes. (There is a list of subjects/projects subject to environmental permits in the Decree). Time of licensing: The environmental license is considered and granted by the management agency to the project owner before installing discharging facilities or impact-preventing facilities. In case of a project investment consisting of many distinct phases, separate environmental licenses may be issued for each phase of the project.

g) Proposing Regulations for Monitoring

The importance of the monitoring activities mentioned above shows that this activity needs to be carried out in a standardized manner, focusing on the following:

- The project owner is responsible for monitoring in accordance with the environmental monitoring management program of notice of EIA report review and environment license issued by state agencies.
- In principle, the monitoring program should include: full list of impacts to be monitored, monitoring indicators and thresholds or standards to be meet.
- Types of monitoring to be carried out include: (i) Impact monitoring: This type of monitoring should be conducted throughout the project life cycle. Furthermore, impact monitoring must ensure that environmental impacts are within predictable levels and meeting the environmental targets to be achieved. (ii) Compliance monitoring: to ensure that the proposed mitigation measures are implemented effectively. In addition, this monitoring is to ensure that the monitored environmental parameters comply with the standards and environmental protection goals prescribed by law.
- Implementing monitoring measures.

- Environment monitoring is to operate throughout the life of the project, including construction phase, operation phase and closure stage.

## 5. Conclusion

As shown above, there are still some shortcomings in Vietnam's EIA legislation system; many issues need to be further studied and discussed more widely to meet environmental protection requirements in the actual context of the economic development of the country. Especially, in relation to the environmental management tools applied for projects in operation, Vietnam is facing challenges in taking a valid approach underpinned by the principles that have been adopted by other advanced countries. Based on extensive study of the shortcomings and obstacles in the legal system of EIA and of the management of investment projects in post-EIA stages, as well as researching and learning about legal systems of other countries and policies of international organizations, this article has proposed adjustments to the existing legal framework to improve the effectiveness of environment management in Vietnam. Specific work has included:

- Assessing the status of the current environmental impact assessment system and the actual practical operation of Vietnam's environmental management, control and monitoring; pointing out the problems and solutions;
- Comparing strengths and weaknesses between Vietnam's and other countries' EIA and environmental protection regulations, in order to select the most appropriate approaches for Vietnam to improve environmental protection management.
- Proposing amendments to improve the legal framework, the technical process of environmental impact assessment, pollution control and monitoring processes for investment projects, specifically including:

proposing two types of EIA implementation (preliminary and detailed EIA); proposing measures to improve the quality of EIA reports (TOR, certification consultant); proposing an approach in review and appraisal of EIA reports, in order to facilitate businesses and simplify administrative procedures, including review methods as council meetings and consultation; proposing to strengthen the content of social impact assessment, health and community consultation; proposing the content of effective environmental monitoring; proposing the environmental license system.

In order to make these new recommendations for provisions in the legal system on EIA in particular and for environmental protection in general, forceful direction from competent authorities is needed, as well as vigorous efforts from related agencies, organizations and scientists, to gradually improve Vietnam's legal framework on environmental protection in order to achieve the objectives of environmental protection and protection of natural resources and sustainable development goals set by the Government of Vietnam.

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