

Initial Environmental Examination (IEE) Guideline for Health Sectors in Nepal

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ABSTRACT

Sustainable environmental management is of great concern due to rapidly growing number of health care institutions in Nepal. It is mandatory to regulate and develop a practice for impact assessment due to establishment and operation of health care facilities of Nepal through user's friendly procedure. This study was carried out to review Initial Environmental Examination (IEE) process and to recommend appropriate IEE study guideline for establishment and operation of health care facilities in Nepal. Primary data were collected through consultation and interaction with domain experts and concerned stakeholders. Secondary sources of information include review of available literature, browsing information from internet, review of IEE studies of developmental projects of different sectors. Review of IEE documents showed that potential effects of the health care projects on environment are inadequately mentioned and whenever mentioned not applied in operational stages. A clear and user's friendly IEE guideline for establishment and operation health care facilities has been proposed to conduct IEE study in Nepal.

Keywords: Initial Environmental Examination; IEE process; Health Sector.

INTRODUCTION

Environmental Assessment (EA) is an examination and analysis of planned activities with a view to ensuring environmentally sound sustainable development. It is the anticipation of potential impacts of a project on the environment and the local community.¹ EA is a decision-aiding tool, which provides necessary information to decision-makers in taking appropriate decisions prior to project implementation. Various international and national policies outlined the need for developing and using EA tool for the integration of environmental components into development projects in Nepal.²

The first global meeting, United Nations Conference on the Human Environment (1972) was held at Stockholm where economic development and environmental degradation was put on the international agenda. The concept of "Sustainable Development" came in 1987 as a Brundtland Report which highlighted three fundamental components to sustainable development: environmental protection, economic growth and social equity. The

developed countries had been adopting EA tool as a regulatory mechanism since early 1970s.² Environmental Assessment was started in early 1980s, particularly for donor-funded projects in Nepal. The Sixth Plan (1980-1985) for the first time in the planning history of Nepal introduced the need of EIA for development projects.³ The Environment was regarded as an integral part of development in the Seventh Five-Year plan (1985-90). The Eight Plan focused on the institutional arrangement for EIA system. The Ninth Plan encouraged the participatory EIA system.⁴ The Tenth Plan further recognized the role of Strategic Environmental Assessment in integrating environmental aspects in development planning. The Interim three year Plans have focused on EA implementation. The National EIA Guideline, 1993 has been endorsed and implemented by the Government of Nepal which contributed stakeholders, developers and regulatory agencies to use EA tool.⁵ After four year of implementation of EIA guideline, the Environment Protection Act (EPA) 1997 and Environment Protection Rules (EPR) 1997 came into force and Initial

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Environmental Examination & Environmental Impact Assessment were made legally mandatory for prescribed proposals.⁶ The EPA, 1997 defined EIA as a report on detailed study or evaluation to be prepared to ascertain as to whether, in implementing a proposal, the proposal does have significant adverse impact on the environment or not, whether such impacts could be avoided or mitigated by any means or not. The Act defines IEE as a report on analytical study or evaluation to be prepared to ascertain as to whether, in implementing a proposal, the proposal does have significant adverse impact on the environment or not, whether such impacts could be avoided or mitigated by any means or not.⁶ The EPA provides provisions that none of the prescribed proposals is implemented without necessary approval. This legal provision restricts the commencement of construction and operation of the project unless the project gets clearance from the environmental view.⁶

The management of health care waste is of great problem/concern in urban areas of Nepal due to rapidly growing number of health facilities without any plan of waste management.⁷ This can be controlled to some extent through Environmental Assessment and regulating the haphazard establishment and/or functioning of health care institutions. However, there is no separate guideline available to check what should be included in IEE report of the health sector. The development of IEE guideline for health sector will guide both the proponent to prepare report as well as Ministry of Health and Population for approving the IEE report or further recommendation for EIA. Furthermore, in order to maintain the quality of report and uniformity in Initial Environmental Examination process, this guideline will assist the preparation and review process of IEE TOR and reports. The guideline will help to prepare the Terms of Reference (ToR) (as mentioned work-schedule in the EPA, 1997) and IEE report as per the principles, and practices of the environmental assessments. Without appropriate guideline, both the proponent and approving agencies are facing difficulties to prepare a technical report and consider aspects before the approval. It is expected that this guideline would contribute to make environmental assessment process effective, useful and purposive.

This guideline will ensure to develop and implement appropriate environmental management procedures in order to guide proponent in preparing report as well as Ministry of Health and Population for approving the IEE report or further recommendation for EIA for establishment and operation of health care facilities in Nepal.

IEE Process in Nepal

According to Section 3 of Environmental Protection Act (EPA), 1997, a proponent shall have to carry out Initial

Environmental Examination (IEE) and/or Environmental Impact Assessment (EIA) of the proposals as prescribed in Schedule 1 and Schedule 2 (pertaining to Rule 3 of Environment Protection Regulation, 1997). Upon the commencement of EPA, no one shall implement or cause to be implemented a proposal without getting it approved from concerned agency (Ministry related to the proposal).⁶ In case of IEE, the proponent should prepare terms of reference (ToR) in the format of Schedule 3 of the EPA, 1997 and submit for approval to the Ministry of Health and Population (MoHP). The IEE report should be prepared as per the approved ToR and Schedule 5 of EPA, 1997. The final IEE report should be submitted to MoHP for the approval. After approval of the IEE report the project could be implemented.

In health sectors, the schedule 1 of EPA, 1997 includes a list of projects in the different sectors which require IEE level of assessment. According to this, operation of hospitals or nursing homes or medical profession (study and teaching also) with 25 to 100 beds require IEE and if exceeds 100 beds, it requires to conduct EIA (EPA/EPA, 1997 with amendment).⁶ Besides this, if total investment cost of project is in between NRS. 50 to 250 million, it requires to carry out IEE and if exceeds NRS. 250 million, it requires Environmental Impact Assessment.⁸

IEE report requirements

After approval of Terms of Reference (ToR), the Schedule 5 of EPA 1997 provides a format and outline for issues to be included in the Initial Environmental Examination report.⁷ The IEE report should be prepared incorporating following components.⁹⁻¹¹

Summary of the IEE Study: A brief summary of the report with environmental impacts and corresponding environmental protection measures related to project implementation should be presented.

Project Background: The basic background information relevant to project should be mentioned with emphasizing the need of the project. The relevancy and need of the project as per time, location and service should also be included.

Project Description: A detail description of the project with location map and area should be mentioned. The salient features of the project with health and demographic characteristics should also be included. The general objective of the proposed project should be stated. The proposed contribution of the project should be mentioned in specific way as specific objectives.

Rationale of IEE Study: The report should why IEE study is essential for the project. It should further answer how to achieve the goal of making the project environment-

friendly and least affecting the environmental quality within and outside the project premises.

Detailed Methodology: Methods used to collect and obtain the detailed site-specific data and information of physical, chemical, biological, socio-economic and cultural environment should be presented separately as:

Physical/Chemical Data: Project site specific land use pattern, solid and hazardous waste, air, noise, geology, soil and water quality data etc.

Biological Data: Vegetation, aquatic ecology and wildlife of project area

Socio-economic and Cultural Data: Demography, ethnicity, income, social activities, occupational health, cultural and archeological information.

Prevailing Acts, Regulation, Policies and Guidelines

To find out the linkage and acquainted with environmental health policies and legislations related environmental policies, laws, and manuals should be reviewed. The objective of this review is to assess whether the project could be operated in an environment friendly way according to these laws and policies. It is proposed to include only relevant provisions. The legal requirement and provisions related to the proposed project in existing acts and regulations should be mentioned clearly. Some of legal provisions, acts and regulations related to health sector proposals but not limited are:

- Environmental Protection Act 1997 (2053)
- Environmental Protection Rules 1997 (2054) (with amendment)
- Town Development Act, 1988 (2045)
- Industrial Enterprises Act, 1992 (2048)
- Labor Act, 1992 (2048)
- The Building Act, 1998 (2055)
- Local Self Governance Act, 1999 (2055)
- Solid Waste Management Act, 2011 (2068)
- National Ethical Guidelines for Health Research in Nepal and Standard Operating procedures for Health Research in Nepal, 2011(2067)
- Ethical Guidelines for the Care and Use of Animals in Health Research in Nepal, 2005 (2062)
- National Guidelines on Clinical Trial with the Use of Pharmaceutical Products, 2005(2062)

- Guidelines for Institutional review Committees for Health Research in Nepal, 2005(2062)

Plan and Policies: The proposals related to health sector are to be relevant with the prevailing health policy and plan of the government of Nepal for sustainable implementation of the proposals. For example;

- National Health Policy 1991 (2048)
- Second Long-term Health Plan 1997 -2017 (2054-2074)
- Nepal Environmental Policy and Action plan, 1993
- Nepal Health Sector Implementation Plan I (2004-2009) and Plan II (2010-2015)
- Environment and Health Policies in National periodic plans of Nepal

Guidelines and Standards: The environmental management and impact mitigation technique could be mentioned in the health sector related projects through review of appropriate guidelines and standards. For examples:

- National EIA Guidelines, 1993 (2050), NPC/IUCN/GoN
- National Health Care Waste Management Guidelines, 2002 (2059), WHO/NHRC
- Health Care Waste Management Guidelines, 2008 (2065), DoHS/MoHP
- Private and non-governmental health institution establishment, operation, standards and infrastructure guidelines, 2004 (2061), MoHP
- National Ethical Guidelines for Health Research in Nepal and Standard Operating Procedure, 2011 (2068), NHRC
- Ethical Guidelines for the Care and Use of Animals in Health Research in Nepal, 2005 (2062), NHRC
- National Guidelines on Clinical Trial with the Use of Pharmaceutical Products, 2005(2062), NHRC
- Guidelines for Institutional review Committees for Health Research in Nepal, 2005(2062), NHRC

Some of the standards such as Air Quality, Water Quality and Noise level issued by the GoN or WHO standard should be reviewed. These standards can be used to compare with the baseline data and predicted environmental qualities during construction and operational stages of the project.

CONVENTIONS

If the proposal is related to some aspect of international law and provisions stated in the international convention, detailed review is required. For example in Basal Convention 1992, transboundary movement of hazardous waste is prohibited and the proponent has to review all the provisions of hazardous waste management included in the convention. Similarly, other conventions such as Convention on Biological Diversity, 1992, World Heritage Convention 1972 etc. should be reviewed if the project affect the biological diversity and heritage sites of international importance. This review should be very specific.

Existing Environmental Condition

The site specific information of the project area should be mentioned in detailed in order to identify, predict and evaluate the specific environmental impacts. The data available in the different sources should be included for the impact analysis. The data should be quantitative as far as possible and should be collected and included in the IEE report in the following areas:

Physical Environment

The detailed site-specific data and information related to physico-chemical environment of the project area should be mentioned as per approved TOR from the Ministry of Health and Population. The data related to physical environment e.g., land use pattern, solid and hazardous waste, Air, Noise, Geology, soil and water quality and their situation and guideline (if available) should be mentioned.

Biological Environment

The available information related to biological environment should be mentioned in detail. The biodiversity and species composition may be obtained through vegetation analysis of the surrounding in project area. Aquatic ecology and biodiversity of project area should be collected and incorporated in the IEE report. In case of health facilities, planned for development, construction and operation in the private land might not have data and information as mentioned above. In such case, those inapplicable to the project can be clearly mentioned.

Socio-economic and Cultural Environment

The detailed socio-economic and cultural information should be included in the baseline data collection in order to make it practical in impact prediction. The data such as demography, ethnicity, income, social activities,

and occupational health, cultural and archeological should be collected and mentioned in appropriate way. Much focus should be given on nature of project, site of the project and potential areas or environmental domains that will be impacted adversely.

ALTERNATIVE ANALYSIS

The environmental assessment describes and find out the suitable and best alternative for for proposal implementation. Description of each alternative, summary of adverse impacts of each alternative, mitigation measures proposed for each adverse impact and selection of best alternative should be incorporated in the IEE report. The description of each alternative based on design, location, technology, methods, raw materials and management system of the project should be incorporated. The alternatives for end product management such as health care waste disposal should be mentioned. The positive and negative aspects of each alternative should be mentioned and best alternative should be chosen.

ENVIRONMENTAL IMPACTS

The construction and operation of the selected alternative on the environment i.e., environmental impact (physical, biological, socio-economic and cultural) should be mentioned according to identification, prediction and evaluation of impact. The negative and positive impact due to implementation of proposal should be included in the IEE report. According to National EIA Guideline 1993, the environmental impacts are evaluated on the basis of magnitude, extent & duration of the impact. If the impact last up to 3 years it is termed as short-term. If the impact continues for 3 to 20 years it is termed as medium-term and if it lasts beyond 20 years is considered as long-term.⁵ However, magnitude, extent and duration of impacts would depend upon the nature of the project, location, resources and their values. For the impact evaluation, the matrix method with numerical ranking is used for the quantitative ranking of the predicted impacts. Impacts identified and predicted should be evaluated to know their significance. The numerical scale mentioned in the National EIA Guidelines, 1993 has been adopted for the project.⁵ The numerical value is as:

Magnitude	Extent	Duration
High 60	Regional 60	Long terms 20
Moderate 20	Local 20	Medium term 10
Low 10	Site specific 10	Short term 05

The environmental impact should be included in both constructional and operational phase, preferably using a matrix.

Mitigation and Enhancement Measures

The main objective of the IEE study is to enhance the positive impacts and to mitigate the negative impacts of the proposed project. The mitigation measures to reduce the negative impacts are categorized into preventive, corrective and compensatory measures. The adverse impacts and mitigation measures should be incorporated for physical, biological, socio-economic and cultural environments as appropriate. The cost of the proposed enhancement and mitigation measures should be included. The positive impacts should be enhanced in order to ascertain the necessity of the project in the area. This can be documented in the matrix form as follows:

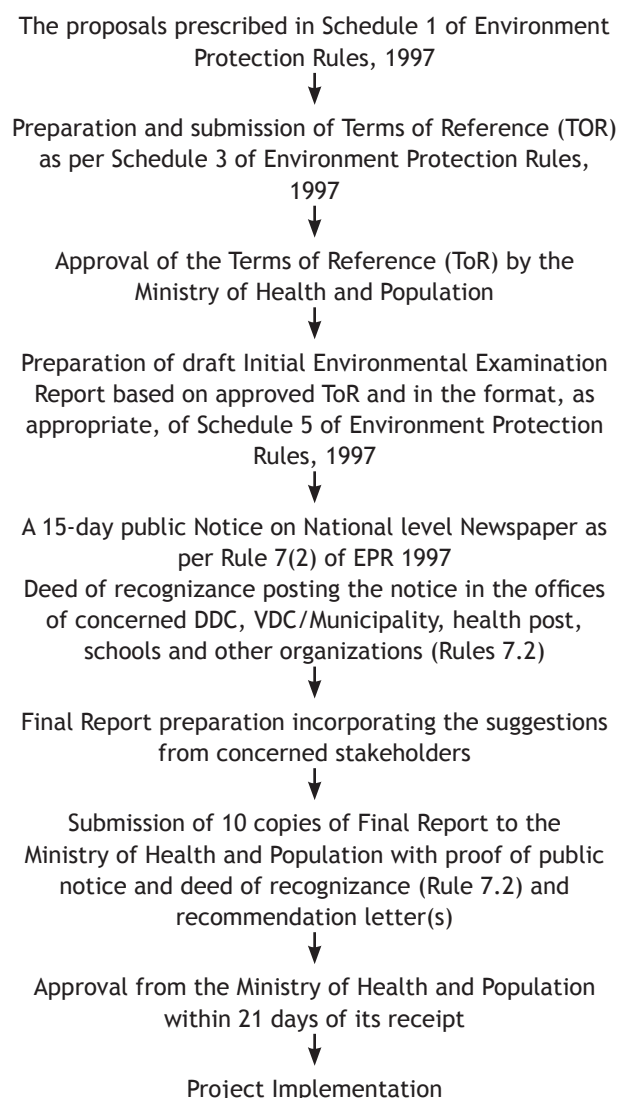
Environmental Monitoring

Environmental monitoring is an integral part of the IEE. The environmental monitoring will help to implement the environmental protection measures, know the level of compliance and effectiveness of the measures proposed and also help to improve the environmental condition of the area concerned. It will also help to know whether project is environmentally sound and socially acceptable. In order to implement the measures effectively, a monitoring unit might be proposed to be established in the proposed project to collect environmental information e.g., air, water, noise quality, waste disposal and possible contamination of water in the nearby drainage system and river. There are three types of monitoring system in Environmental Assessment. **Baseline monitoring** aims to collect and verify the additional environmental baseline data. Baseline monitoring is required to document the changes in the baseline environmental condition prior to implementing the project. **Compliance monitoring** is necessary to encourage and promote the proponent to comply with the requirement as listed in the enhancement and mitigation measures and any condition set-forth during project approval. Compliance monitoring is required to ensure project compliance with recommended environmental protection standards. It employs periodic sampling and continuous recording of necessary parameters. Such monitoring only focuses on whether they have been complied with or not. **Impact monitoring** is included to determine the actual level of impact in the field during the construction and operation of the proposed project. Impact monitoring is required for the changes which may occur as a result of project implementation. This is actual project impact which should be closely monitored during construction and operational stages of the project to know the level of implementation of the mitigation measures. The impact monitoring of the ecological, economic and public health parameters within the project area is required during the project construction and operation phase.

The impact monitoring will focus on key indicators to assess whether the impacts have been accurately predicted and the mitigation measures are sufficient during implementation of the proposal.

Technical aspects of monitoring consists of the effectiveness of mitigation measures including measurement methods, frequency of monitoring, location, data analysis, reporting schedules, emergency procedures, detailed budget & schedules should also be included in the IEE report. A table given below helps to understand about the monitoring parameters, methods of monitoring, time schedule for monitoring, cost and responsible organization. The IEE report could indicate the monitoring by the proponent and concerned agency. The Ministry of Health and Population for the health sector projects, is a responsible body to monitor legally.

GLIMPSE OF IEE PROCESS



WAY FORWARDS

IEE guideline for establishment and operation of health care facilities in Nepal has been proposed to overcome the weakness of health impact assessment in IEE studies. This guideline would guide the proponents, environmental scientists, policy makers, consultants, students and other stakeholders to develop review and implement IEE process in project level. The IEE study would reflect whether IEE study is sufficient and necessary for further study to address additional environmental impacts.

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REFERENCES

1. Munn RE. Environmental Impact Assessment: Principles and Procedures. John Wiley and Sons, UK; 1979.
2. Uprety BK. Environmental Impact Assessment: Process and Practice. Uttara Uprety, Kathmandu; 2003.
3. NPC. The Sixth Plan (1980-1985). HMG/National Planning Commission, Kathmandu; 1980.
4. NPC. The Ninth Plan (1997-2002). HMG/National Planning Commission, Kathmandu; 1997.
5. GoN. National Environmental Impact Assessment Guidelines, Government of Nepal; 1993.
6. MoPE. Environmental Protection Act 1997 & Regulation 1997, (then) Ministry of Population and Environment, Kathmandu; 1997.
7. DoHS. Health Care Waste Management Guideline. Department of Health Services, Ministry of Health and Population. Kathmandu; 2008.
8. MoEST. Environmental Protection Act 1996, Environmental Protection Regulation 1997 (amendment in 2007) Ministry of Environment, Science and Technology, Kathmandu.
9. MoAC. Initial Environmental Examination Guidelines for Agriculture Sector. Ministry of Agriculture and Co-operatives, Gender Equity and Environment Division, Kathmandu; 2008.
10. MoFSC. Terms of Reference and Initial Environmental Examination Guidelines for Forestry Sector. Ministry of Forest and Soil Conservation, Environment Division, Kathmandu; 2004.
11. MoI and IUCN. EIA Guidelines for Industry Sector 1995. Ministry of Industry and The World Conservation Union, Nepal, Kathmandu; 1998.