

ENVIRONMENTAL IMPACT ASSESSMENT SYSTEM IN NEPAL - AN OVERVIEW OF POLICY, LEGAL INSTRUMENTS AND PROCESS

Ramesh Prasad Bhatt*, Sanjay Nath Khanal

Department of Environmental Science and Engineering
School of Science, Kathmandu University
P.O. BOX NO. 6250, Kathmandu, NEPAL.

*Corresponding author: rameshbhatta@yahoo.com

Received 18 January, 2009; Revised 10 September, 2009

ABSTRACT

Environmental Impact Assessment (EIA) is one of the major instruments integrated with a goal of making economic development project, environmentally sound and sustainable. The use of EIA began in 1970 in USA and spread rapidly throughout the world particularly after the UN Earth Summit held in 1992. To enable such issues to be taken into account in decision making it was necessary to introduce a systematic procedure of EIA. Therefore, to date many of the countries of world have a legal and institutionalized system of EIA. In the planning history of Nepal, the Sixth Plan (1980-'85), for the first time recognized the need for EIA integration for major infrastructure projects. The government of Nepal enunciated environment conservation related policies in the Seventh Plan (1985-90). In order to enforce this policy, a series of guidelines were developed incorporating the elements of environmental factors right from the project formulation stage of development plans. Environmental Assessment Guideline 1993 was the first "lesson learnt" document in Nepal which has played facilitation role in the EIA process. Until then, international obligations, conventions, guideline, treaties applied for the environmental and biodiversity conservation measures at the policy level.

Inspired by the international conventions, treaties and planned EIA process internationally; Nepal government has established EIA system for developmental projects with the formulation of Environmental Protection Rules 1997 as well as sectoral policy, laws and guidelines. Based on the formulated Act, regulations, and guidelines, criteria for IEE/EIA has established that the development projects certainly require environmental assessment study as per the nature of the projects unless they cross the given threshold for the disruption of the environmentally sensitive areas and their natural environment. Leafing the policies and legal instruments of the country, now the ongoing EIA system has big challenge towards environmental management and biodiversity conservation for sustainable development.

Keywords: EIA- Environmental Impact Assessment, EPA- Environmental Protection Act, EPR- Environmental Protection Regulation

INTRODUCTION

Depletion of natural resources induced by human activities and subsequent environmental degradation has attracted steadily growing interests in the last few decades. Such concerns make it evident the necessity for the planning authorities to count on sound information about the possible environmental consequences of development actions. One of the tools available to satisfy this need is represented by the procedure of Environmental Impact Assessment (EIA). This procedure involves the systematic identification and evaluation of the impacts on the environment caused by a proposed project. EIA is now applied worldwide in various forms. Its potential role in attaining the objective

of sustainable development was explicitly recognized during the Earth Summit 1992 held in Rio de Janeiro (United Nations 1992).

The EIA procedure generates a report and discusses the acceptability of the predicted environmental impacts. Such a report is submitted to the authorities to support the decision-making related to the approval of the development under consideration. The EIA is made up of a number of multidisciplinary issues on biophysical, socioeconomic and cultural environment, each one addressing specifically different category of impacts of each environmental component.

Environmental Impact Assessment (EIA) emerged as a response to the concern expressed by the environmental movements of 1960s; USA formulated National Environment Protection Act in 1969 with the requirement of Environmental Impact Statements (EIA) for major federal actions significantly affecting the quality of human environment. Since the 1960s, growing environmental awareness has focused attention on the interactions between development actions and their environmental consequences. EIA has been a great interest in virtually of all of the industrialized nations of the world, where it has now become major tool for environmentally sound management practices and for the attainment of sustainable management goals.

Present is the key to the past, James Hutton (1785), Human activities decrease and increase the magnitude and frequency of natural process. Examples are flooding, landslide, changes in hydrological regime, environmental pollution, habitat fragmentation and species extension. Maintaining the ecosystem is the sustainability of life and EIA tool is for decision making sound environmental management practices (NEPA 1969).

EIA is a tool for environmental analysis in developing countries (Ahmad and Sammy 1985, 1985; Biswas and Qu Geping.1987; UNEP, 1988).Any project entails a set of activities over period of time, project activities occur either during the construction period or during the operations or in both periods. Such activities generate some stresses, which may have impacts on the impacts. A) Resource impacts b) human welfare impacts c) environmental impact and d) global impacts. The pathway of impacts can be traced from three distinct sources: resource depletion or degradation, pollution and human activities.

However, progress in adopting EIA as an environmental tool has been extremely slow in the developing countries. Although these countries have always had general environment related laws and regulations which can be exploited for EIA purposes, these have had very limited impacts as environmental protection measures because of serious technical, administrative and political constraints (Gamman, J.K.Mc Creary, S.T.1988, Fola S. Ebisemiju 1993), In fact, only a few developing countries have used them to demand EIA.

At the beginning of the 1980s there was apprehensive pressure to introduce systematic assessment of the environmental consequences of forestry and other development projects in the developing countries. The sense of urgency comes from the fragility of the forest resources themselves and from the establishment of regularity agencies in the developing countries, from the procedural requirements of international funding and technical assistance agencies and individual donor countries, and from the activism of the international conservation and scientific community (FAO Conservation Guide, 1992).

BACKGROUND

The EA system of Nepal has introduced successfully after the enforcement of Environment Protection Rules (EPR) 1997, which made IEE/EIA mandatory for the governmental as well as the private sector. Prior to this, IEE/EIA was mandatory only for the governmental sector, ever since the enforcement of the National Guidelines (1993). However, the historical establishment of EIA process

began since late 1980s. The following sections give an outline of the major achievements to establish policy and legal instrument for the proper implementation of the EA system in Nepal.

EIA Policies in Nepal

First Five Year Plan (1956-1961), was the first planned process of development in Nepal while Sixth Five Year Plan (1980-1985) had first mentioned the need for EIA for major infrastructure projects. Government had established a project entitled "Environmental Impact Study Project" (EISP) under the Ministry of Forest and Soil Conservation in 1982. During 1982 to 1988, EISP prepared draft documents on environmental policy, environmental act and guidelines and conducted EIA on several ongoing infrastructure projects. However, the efforts at project level became ineffective, due to lack of interest of the decision-makers and the politicians (Bhattarai, 1999).

Seventh Five Year Plan (1985-1990), first time a national level policy on environment management was incorporated. The policy emphasized to carry out EIA for all major development projects such as tourism, water resources, infrastructure, forestry and industry. However, implementation of EIA policy was not realized to the extent previewed. EIA was carried out in hydro-power development, irrigation and drinking water and road construction without mandatory requirement of the Government, though, but rather as a requirement stipulated by loan and donor agencies. The Nepal Government/National Planning Commission (NPC) and IUCN developed and endorsed the National Conservation Strategy (NCS) in this period for sustainable management of natural resources and the protection of the environment. The NCS for Nepal was prepared jointly as an inter-sectoral umbrella policy at the national level for addressing environmental issues during the development process.

Eighth Five Year Plan (1991-1995) and the Nepal Environmental Policy and Action Plan (1993) re-emphasized the need for an EIA system to integrate environmental concerns into the development process. The Eight Five Year Plan anticipated the establishment of a national system for EIA and stipulated that EIA be conducted at the stage of feasibility study. Considering the NCS mandatory and constraint on policy and plan for the preparation of EIAs in Seventh Five Year Plan., first National EIA Guideline was endorsed in September 1992 and gazetted in July 1993.

Tenth Periodic Plan (2002-2007) the plan seeks to reduce poverty from 38% to 30% by 2007 through emphasis on four key areas, high, sustainable, and broad based economic growth, social sector and rural infrastructure development; targeted program for the ultra-poor, vulnerable and deprived groups; and good governance. This plan includes genetic resources and biodiversity conservation programs in sustainable manner.

Tenth Five Year Plan, 2003 Conservation of biodiversity through management of buffer zone involving local user groups, promote & encourage Eco-tourism in the protected areas. Conservation of biological diversity will be achieved through the utilization of landscape approach, community participation, and soil conservation in sustainable way forming basis for development.

POLICIES RELATED TO DIFFERENT SECTOR

Besides these national level policies, sectoral development policies have also emphasized, the need of environmental management, including the adoption of EIA process. For instance, the Hydropower Development Policy (1992) has stated for a need to "render assistance in the conservation of environment by supplying clean energy through the development of hydro-electric power". The Irrigation Policy, 1993 (revision 1997) commitments are directed towards the design and implementation of irrigation projects based on the recommendations of the EIA and IEE reports, prepared as per the National EIA Guidelines, 1993. Similarly the sectoral policies of forests, industry, tourism, and solid waste management have accorded high priority to integrate environmental aspects in the respective development projects and programmes. The policy initiatives

clearly indicate government's commitment that opens a number of avenues to internalize and institutionalize EIA system in decision-making process.

LAWS RELATED TO EIA

In the process of internalizing the Environmental Assessment System in development proposals, the government of Nepal enacted the Environment Protection Act (EPA) 1997 and the Environment Protection Rules (EPR), 1997, which makes the integration of IEE and EIA legally binding to the prescribed projects. Proposals requiring IEE and EIA study are included in Schedules 1 and 2 of the EPR, 1997 (amendment 1999) respectively.

The EPA, 1997 obliges the proponent to prepare IEE or EIA report on the prescribed proposals. Implementation of such proposals is carried out after the approval of EIA by concerned agency (sectoral ministry) and MoEST. The Act outlines the process for the submission of the proposal by the proponent and approval of reports through the concerning authority. The EPR, 1997 elaborates provisions to prepare and submit the scoping report, Terms of Reference (TOR), and IEE/EIA report for approval and includes public consultation processes. As per the EPR 1997, the EA report, in general, should include detail information on impacts and environmental protection measures, including implementation plan, monitoring and evaluation and environmental auditing. Public consultation has been a pre-requisite in all the prescribed projects.

PROVISIONS OF EIA IN SECTORAL LAWS

Some of the sectoral laws also provide opportunity to conduct environmental assessment studies. For example, the *Forest Act, 1993* calls for carrying out EIA of the development proposals if they are to be implemented in the forest areas and/or passes through the forest area. Section (68) of the Act empowers government to give consent to use any part or the any category of forest areas, in case of absence of alternative, for the implementation of the national priority proposal with the assurance that it does not pose any significant adverse effect in the environment. The *National Parks and Wildlife Conservation Act, 1973* contains a number of environment-friendly provisions and prohibit activities that will have adverse impacts on the environment. The Forest Rules, National Parks Rules, and Conservation Area Management Rules also contain a number of regulatory measures to minimize environmental impacts within the forests, national parks, wildlife reserves and conservation areas.

Aquatic Animal Protection Act, 1961 and First Amendment, 1998 (AAPA) promulgated for protecting aquatic animals in natural water bodies like rivers, reservoirs and lakes has remained virtually defunct due to lack of related bylaws/regulations. Its first amendment in 1998 section 5a states for use of safe pesticides use for catching aquatic life. Section 4a, 4b and 5 empower the government to prohibit catching, killing and harming certain kind of aquatic animals in different scenario.

The *Water Resources Act 1993* contains provisions to minimize environmental impacts, including soil erosion, floods and landslides. This provision calls for carrying out EIA study prior to project implementation (Section 20). The Act also empowers government to frame standards while utilizing water resources (Section 18) and to frame rules on environment related matters and controlling pollution (Section 24). The *Water Resources Rules, 1993* oblige the proponent to analyze environmental impacts of a proposal and state that such study should contain environmental control and safety measures and other necessary arrangements to resettle people during hydro-electricity development. Also, in a process for resolving any conflict, the Water Resources Utilization Investigation Committee should consider environmental impacts likely to occur from a proposal [Rule 28 (3)]. The Irrigation Rules, 1989, prohibits activities, which pollute the canal or irrigation water (Rule 4.1).

The *Electricity Act, 1993* also contains provisions to minimize soil erosion, floods, air pollution and damage to the environment while producing and transmitting electricity (Section 24). The Electricity Rules, 1993 stresses environmental analysis, which should include environmental mitigation measures to minimize adverse impacts likely to occur while developing hydro-electricity (Rule 12 and 13).

The *Tourism Act, 1978* also contains provisions to minimize waste and environmental pollution in the trekking areas. Scattered regulatory measures are also available in other sectoral laws but they do not clearly spell out the need for EIA studies.

The *Mines and Minerals Rules, 2000* obliges the proponent to adopt environmental protection measures and ensure environmental conservation (Rule 19). Furthermore, the rules 32 and 33 elaborate provisions to minimize significant environmental impacts. This Rule provides an opportunity to identify potential environmental impacts and implement mitigation measures, which is a part of the EIA process.

Similarly, Explosive Material Act, 2018, Public Road Act, 2031, Road Board Act 2002, Land Acquisition Act 2034 and Land Acquisition Regulations 2026, Local Self-Governance Act (1999) and Rules (2000), Buffer Zone Management Regulation 1996, Himalayan National Park Regulations, 1979 have also emphasized EIA provision in particular article of the Laws.

GUIDELINES IN ENVIRONMENTAL IMPACT ASSESSMENT

In the process of implementing National Conservation Strategy (NCS) in 1990, the government of Nepal in collaboration with The World Conservation Union - IUCN developed a national system for Environmental Impact Assessment. This was a significant contribution towards the preparation of locally suitable environmental assessment guidelines. The National EIA Guidelines for Nepal was drafted, tested and finalized through a participatory approach and within two years of continued efforts the government endorsed the guidelines on 27 September 1992 through an administrative decision (Cabinet decision) and gazetted it on 19 July 1993. Although National EIA guidelines are procedural guidelines, it substantially encouraged the proponent to prepare an EIA report of the prescribed development projects and programmes. It serves as the primary source of integrating environmental aspects in major development projects.

The National EIA Guidelines contains objectives, methods of screening projects requiring the level of environmental assessment (IEE or EIA), scoping, impact identification and prediction, report review, monitoring and evaluation and impact auditing. The guidelines also contain methods for ensuring public participation during the preparation of the EIA report, including the need of impact mitigation measures in the EIA report. It calls for identifying physical-chemical, biological, socio-economic and cultural impacts and proposing mitigation measures to avoid, eliminate and/or minimize or mitigate each adverse impact and to augment of beneficial impacts resulting from the project. The guidelines also stresses on the inclusion of monitoring and evaluation and a framework for environmental auditing in the EIA report.

Within the broad framework of the National EIA guidelines, two separate EIA guidelines of Forestry and Industry Sector were prepared and the government endorsed them in 1995. These two guidelines primarily differ on regulatory Schedules, which include projects and programmes requiring levels of environmental assessment. In a process for facilitating the environmental consideration in development project, government of Nepal as a part of the NCS Implementation Programme has also drafted sectoral EIA guidelines.

OBLIGATIONS IN ENVIRONMENTAL IMPACT ASSESSMENT

Nepal has been a Party of 16-Environment related international legal instruments, the treaties, conventions and agreements. Furthermore, Nepal has signed other four conventions and treaties, which Nepal should implement based on moral obligation but not on legal ground. It is important to note that conventions are more effective than the Nepalese legislation based on the Nepal's Treaty Act of 1990. In view of the EIA requirements on international legal instruments, the Convention on Biological Diversity (CBD) is more important. This Convention obliges the Party countries to introduce appropriate procedures for EIA, introduce appropriate arrangements to conduct EIA, promote and exchange information with other States, notify immediately the potential affected States in danger of biodiversity, promote national arrangement for emergency response on conservation, and examine restoration and compensation for damage to biodiversity. Since 1975, Nepal has been working as a party to the CITES. This has facilitated international cooperation to stop or control international trade in endangered wild fauna and flora. The aim of CITES is to reduce or eliminate trade in species whose numbers or conditions suggest that further removal would cause extinction of that species.

This Convention on Biodiversity was signed by Nepal on 12 June 1992 during the Earth Summit at Rio. Nepal ratified this Convention and deposited its instrument of ratification on 23 November 1993 and became a Party since 21 February 1994. Other Conventions to which Nepal is a Party do not specifically mention about EIA requirements, however, there are opportunities to conduct EIA studies so as to identify likely environmental impacts of the development projects, programmes and minimize potential environmental impacts.

Besides, a regional Convention on EIA exists in the EU region. This was adopted at Espoo (Finland) on 25 February 1991 as a regional Convention of EU. This Convention attempts to: link economic activities and environmental consequences; ensure ESSD; and make EIA as means of national procedure for evaluating the likely impact of a proposed activity on the environment. This Convention contains 20 articles and focuses on preparation and consultation of EIA documentation, post-project analysis, research programmes, bilateral and multilateral cooperation on strengthening EIA system and so on. These framework guides the advancement of EIA system and lesson learnt documents in Nepal's EIA the perspectives.

Besides the international legally binding instruments, there are other instruments such as Stockholm declaration, Rio declaration and also Agenda 21 - a blue print of action - for the 21st century, which obliges the UN member states to adopt necessary measures on EIA application so as to minimize potential environmental impacts and augment beneficial environmental impacts. The Stockholm and Rio Declarations also encourage the UN member States to integrate EIA process in the overall decision-making, planning and implementation of the development projects and programmes. In this context, there are ample opportunities to internalize and institutionalize EA system in avoiding and mitigating adverse environmental impacts and make the development initiatives environment-friendly, economically beneficial and sustainable.

OPPORTUNITIES

A narrow definition of EIA describes it as a systematic process of identifying, predicting, analyzing, evaluating and mitigating the direct and indirect environmental effects of a proposed activity before permission is given for it to commence. A broader definition stresses the need to identify and assess the potential impacts, not only of projects, but also of legislative proposals, policies, programmes and operational procedures, on the environment, human health and well-being, and to communicate information about those impacts to the general public. Within the context of this broader definition, several studies on sustainable development (World Bank, 1991; UNEP, 1993; Glasson et al., 1996) recommend that in addition to assessing impacts on the physical and biological environment, EIA should address socio-economic impacts, including those on ethnic minorities, women, and community governance.

The immediate concerns of the sectoral EIA studies in Nepal will be dealt most effectively, if we adopt the narrow definition of EIA: namely the assessment of environmental impacts caused by economic activities such as infrastructural development projects, industry, hydropower, and road expansion. EIA in this context only encompasses socio-economic impacts that relate to environmental resource management in affected communities.

Early EIAs focused only or primarily on impacts on the natural or biophysical environment (such as effects on air and water quality, flora and fauna, noise levels, climate and hydrological systems). However, over time, increased consideration has been given to social, health and economic impacts. This trend has been driven partly by public involvement in the EIA process. It is reflected by the evolving definition of the term 'environment' in EIA legislation, guidance and practice. In many EIA systems, a broad definition of 'environment' is adopted. This can include effects on:

- Human health and safety;
- Flora, fauna, ecosystems and biological diversity;
- Soil, water, air, climate and landscape;
- Use of land, natural resources and raw materials;
- Protected areas and designated sites of scientific, historical and cultural significance;
- Heritage, recreation and amenity assets; and
- Livelihood, lifestyle and well being of those affected by a proposal.

Depending on the EIA system, some or all of these impacts may require analysis and evaluation. However, health, social and other non biophysical impacts are either not considered or are inadequately addressed. An alternative approach is undertaken separately, but parallel assessments of social, health and other impacts when they are considered to be particularly important for decision-making and not adequately addressed by EIA or other similar processes (such as risk assessment). The preferable approach is to undertake an integrated analysis.

CHALLENGES

In the past, the implementation of EIA in the project planning used to be a closed door approach. However with the enforcement of EPA 1997, the opportunity for the involvement of stakeholders has increased. Nepal has not introduced the concept of accrediting the experts and consulting firms to prepare the EIA report. Experiences from review of EIA reports shows that any person can prepare such report and hence, the quality of EIA report is still in doubt. Influence of non-professionals in developing and enforcing the legal regime on EIAs and in preparing the EA report prevail in many sectors. Because of this, the benefits of EA tool have largely been boiled down to legal complication and the effectiveness of this tool has been diluted in project planning and implementation. Furthermore, many of the developers (which have resulted in) consider that once the EIA report is approved, environment is adequately managed. The entire omission or negligence of the EIA, findings and recommendations in the process of project implementation cannot be fully reflected for sound environmental management. Furthermore, the agencies responsible for environmental monitoring are not adequately addressed with the importance of EIA study, so monitoring aspect is totally neglected.

Effective implementation of EA tool has been limited due to lack of trained human resources and practice of not mobilizing the available human resources in environmental monitoring, lack of information dissemination and database systems, ad hoc procedure and criteria for reviewing the EA reports and lack of integrating EA recommendations into design and contract documents. Furthermore, monitoring and evaluation are grossly inadequate. Thus, assessments of EIA studies strategically should be appropriate and emerged for policy and decision making process as well as trend developed in developed countries.

CONCLUSIONS

The existing policy and legal instruments since beginning of the late 1980s has a big deal for the development of EIA system in Nepal.

EIAs have been integrated in major development projects since the early 1980s. In the planning history of Nepal, the Sixth Plan (1980-'85), for the first time, recognized the need for EIA integration for major infrastructure projects. In 1982, an Environmental Impact Study Project was established under the Department of Soil Conservation to develop necessary instruments for the integration of EIA in infrastructure development projects. The government of Nepal enunciated environment conservation related policies in the Seventh Plan (1985-90). In order to enforce this policy, and to make necessary arrangements, a series of guidelines were developed incorporating the elements of environmental factors right from the project formulation stage of development plans and projects and to avoid or minimize adverse effects on the ecological system. In addition, it has also emphasized to conduct EIAs of industry, tourism, water resources, transportation, urbanization, agriculture, forest and other developmental projects.

Government of Nepal has endorsed the National Conservation Strategy (NCS) and the Master Plan for Forestry Sector (MPFS) for implementation. An EIA study was also carried out in 1987 to identify the likely environmental impacts of the activities proposed in the forestry Master Plan before its adoption. The NCS also emphasized the need to internalize the EIA system in resource management and development planning in Nepal.

Government of Nepal continued its efforts to internalize EA system during the interim period (1990-1991). One of the basic policies of the Interim Government was to carry out EIA prior to the implementation of any major development project and programmes. The Interim Government issued directives to implement EIA in any project, which would have adverse affects on the natural balance.

The Eighth Plan period (1992-1997) has made a contribution remarkable and notable in institutionalizing EIA system in Nepal's development planning and administration. During this period, Government of Nepal adopted and implemented the National EIA Guidelines, 1993, and two separate EIA Guidelines for Forestry and Industry Sector in 1995 through administrative decisions, and also continued the preparation of the sectoral EIA guidelines. During the Plan period, the Environment Protection Act, 1996 and the Environment Protection Rules, 1997 were enacted and enforced.

Although, EIA is one of the powerful tools to assess the project on environmental grounds, the present practice of EIA report preparation generally overlooks the impacts of macro-level policy, plan and programs, and assessment of cumulative impacts. Because of delay in decision process, many stakeholders think that EIA process is time-consuming and is not necessary.

In the past, the implementation of EIA in the project planning used to be a closed door approach. However with the enforcement of EPR, the opportunity for the involvement of stakeholders has increased. Nepal has not introduced the concept of accrediting the experts and consulting firms to prepare the EIA report. Any person can prepare such report and hence, the quality of EIA report is still doubt. Influence of non-professionals in developing and enforcing the legal regime on EIAs and in preparing the EA report prevail in many sectors. Because of this, the benefits of EA tool have largely been boiled down to legal complication and the effectiveness of this tool has been diluted in project planning and implementation. Furthermore, many of the developers (which have resulted in) consider that once the EIA report is approved, environment is adequately managed. Furthermore, the agencies responsible for environmental monitoring are not adequately addressed with the importance of EIA study, so monitoring aspect is totally neglected.

RECOMMENDATIONS

All possible impacts of the project activities caused environmental stress which could be properly managed or mitigated as per the nature, magnitude and duration of the impacts by adopting policy and legal instruments in EIA practices. The major point to be highlighted in the policy and legal instruments towards effective implementation of EIA system are:

- Resource impact regarding change in forest, river and freshwater ecosystem as well as from changes in plant and animal habitats due to pollution generated from project activities can be measured through changes in the level of water and air pollution resulting from project activities.
- For effective EIA implementation, international standards and requirements of EIA is necessarily required.
- Human interest impacts can be measured through change in the economic activity due to deteriorating environmental condition and through changes in the institution of a society. Any scoring system can be incorporated all these aspects of environment.
- Furthermore, a broader consultation is required among the professionals, government agencies and concerned stakeholders towards the effective implementation EIA approach and review of existing policy and legal instruments.

ACKNOWLEDGEMENT

Authors would like to acknowledge the financial support received from Nepal Academy of Science and Technology, Kathmandu Nepal.

REFERENCES

1. Ahmad and Sammy 1985. Biswas and Qu Geping.1987,UNEP, 1988, Guidelines of Environmental Impact Assessment in developing countries. London. Hodder and Stoughton
2. All country legislation: <http://www.hmso.gov.uk/legis.htm>.
3. Barry Sadler June 1997, A tool Kit for Effective EIA Practice Review of Methods and Perspectives on their Application; Chief Executive, Institute of Environmental Assessment Lincoln, UK
4. Bhatta R.P. March 2005, February 2006, Initial Environmental Examination of twelve sub projects of seven districts, Rural Access Improvement and Decentralization Project/ Department of Local Infrastructure Development and Agricultural Roads, Lailitpur, Nepal.
5. Bhatta Ramesh Prasad January 2009, the Need and Use of Geographic Information System for Environmental Impact Assessment in Nepal; Journal of Water Energy and Environment, Issue No (4) PP (29-31).

6. Bhattarai, S., 1999, Evolution and the status of Environmental Assessment (EA) in Nepal Draft. IUCN, Kathmandu, Nepal.
7. Biswas, A.K. and Geping Q. (eds) 1987. Ahmad y. and G.K.Sammy 1985, Environmental Impact Assessment for developing countries. London. Typcooly international.
8. Byron, H (2000), Biodiversity Impact – Biodiversity and environmental impact assessment: a good practice guide for road schemes. The RSPB, WWF-UK, English Nature and the Wildlife Trusts, Sandy.
9. DNPWC-MFSC 1999, Buffer Zone Management Regulation 1996, and Buffer Zone Management Guidelines, Department of National Parks and Wildlife Conservation, Kathmandu, Nepal.
10. Environmental impact assessment, guide to procedures <http://www.odpm.gov.uk/index.asp>.
11. FAO Conservation Guide 1992, Environmental Impact of Forestry; Guidelines for its assessment in developing countries FAO.
12. Fola S. Ebisemiju 1993, Environmental Impact Assessment: Making Work in developing Countries; Journal of Environmental Management vol. 38 (4). pp 247-273.
13. Gamman, J.K. Mc Creary, S.T. 1988. Fola S. Ebisemiju 1993, Suggestions for integrating EIA and Economic development in the Caribbean region. Environmental Impact Assessment Review 8, 43-60.
14. GoN 1993, Nepal Environmental Policy and Action Plan, Government of Nepal and IUCN Kathmandu, Nepal.
15. GoN, 1993. National Environmental Assessment Guidelines. Nepal Gazette (Rajpatra), Volume 43, Number 5, Kathmandu.
16. GoN Forest Act, 1993, Ministry of Law and Justice, Kathmandu, Nepal.
17. GoN/MoLJPA 1997, Environmental Protection Act 1997 and Environmental Protection Regulation 1997, GoN/N (Ministry of Law, Justice, and Parliamentary Affairs), Law Books Management Board, Kathmandu, Nepal.

18. GoN 2002. Nepal Biodiversity Strategy, Ministry of Forest and Soil Conservation, Kathmandu.
19. Hutun, N. 1988, The EIA process in Asia and the pacific region. In Environmental Impact Assessment: Theory and Practice (P.Wathern, ed), pp. 224-238. London; Unwin Hyaman.
20. Institute of Environmental Management and Assessment (2004) Guidelines for Environmental Impact Assessment. IEMA, Lincoln.
21. Khadka R, Bhatta R.B. Basnet Deepti 2000. EIA Proceeding for Environmental Professionals and Managers 2000; Ministry of Population and Environment/ International Resource Group (IRG)/ School of Environmental management and Sustainable Development (Schems), Kathmandu Nepal.
22. L.W. Canter and G.A. Canty 1993, Environmental Impact Assessment Review, 13(5), pp 275-279.
23. Oxford, M (2001) Developing Naturally, A handbook for incorporating the natural environment into planning and Development. Association of Local Government Ecologists.
24. Planning Advice Note, Pan 58 - Environmental Impact Assessment (Scotland) (1999).
25. The RSPB, WWF-UK, English Nature and the Wildlife Trusts (2000) Biodiversity Impact – biodiversity and Environmental impact assessment: a new approach summary leaflet
26. Uprety, B. K. 2003, Environmental Impact Assessment: Process and Practice. Mrs.Uttara Uprety, Koteshwor, Kathmandu, Nepal.
27. W.A. Ross 1987, Evaluating Environmental Impact Statements; Journal of Environmental Management. Vol. 25 pp. 137-147.
28. World Bank (1991), Environmental Assessment Sourcebook: Policies, Procedures and Cross-Sectoral Issues. The World Bank Technical Paper No. 139, Vol. I. Washington, D.C.: Environmental Department, the World Bank.

An environmental impact assessment (EIA) is a process to predict the environmental consequences of a project's development. By evaluating the project through the EIA, we can assess the environmental effects of each plan and select the plan that will suit our needs the most. Since nature's well being is a key aspect in maintaining the world balance, the EIA has gained prominence, especially in the petroleum industry [1], for helping limit the human footprint on the natural world. System in nepal - an overview of policy, legal instruments and pro. Article. CITATIONS READS.Â OVERVIEW OF POLICY, LEGAL INSTRUMENTS AND PROCESS Ramesh Prasad Bhatt*, Sanjay Nath Khanal. Department of Environmental Science and Engineering. School of Science, Kathmandu University P.O. BOX NO. 6250, Kathmandu, NEPAL. *Corresponding author: rameshbhatta@yahoo.com.Â ABSTRACT Environmental Impact Assessment (EIA) is one of the major instruments integrated with a goal of making economic development project, environmentally sound and sustainable. The use of EIA began in 1970 in USA and spread rapidly throughout the world particularly after the UN Earth Summit held in 1992. Bhatt, R. and Khanal, S. (2009) Environmental Impact Assessment System in Nepal: An Overview of Policy, Legal Instruments and Process. Kathmandu University Journal of Science, Engineering and Technology, 5, 160-170. has been cited by the following article: TITLE: Floristic Composition and Change in Species Diversity over Long Temporal Scales in Upper Bhotekoshi Hydropower Project Area in Nepal. AUTHORS: Ramesh Prasad Bhatt, Sarala Bhatt. KEYWORDS: Floristic Composition, Changes in Species Diversity, Vegetation Analysis.Â Research on the Science and Technology Policy Coordination of China's Yangtze River Delta. Binfeng Xu, Wei Song, Xiaopei Gao, Yu Zhang. DOI: 10.4236/ajibm.2019.94059 345 Downloads 574 Views Citations. Within physical planning, environmental impact assessment (EIA) plays important roles in the prediction and assessment of biodiversity-related impacts from planned developments [3].Â EIA can be defined as a process by which information about the environmental effects of a project is collected, both by the developer and from other sources, and taken into account by the relevant decision-making body before a decision is given on whether the development should go ahead.Â [4].Â For monitoring industrial pollution in the case of developing countries, the design of policy instruments is a demanding task. In principle, the regulator has a collection of physical, legal, financial, and other tools.