TA 7984-NEP: MAINSTREAMING CLIMATE CHANGE RISK MANAGEMENT IN DEVELOPMENT

*1 Main Consultancy Package (44768-012)*



**Ministry of Science, Technology and Environment (MoSTE)**

*Institutional Analysis*



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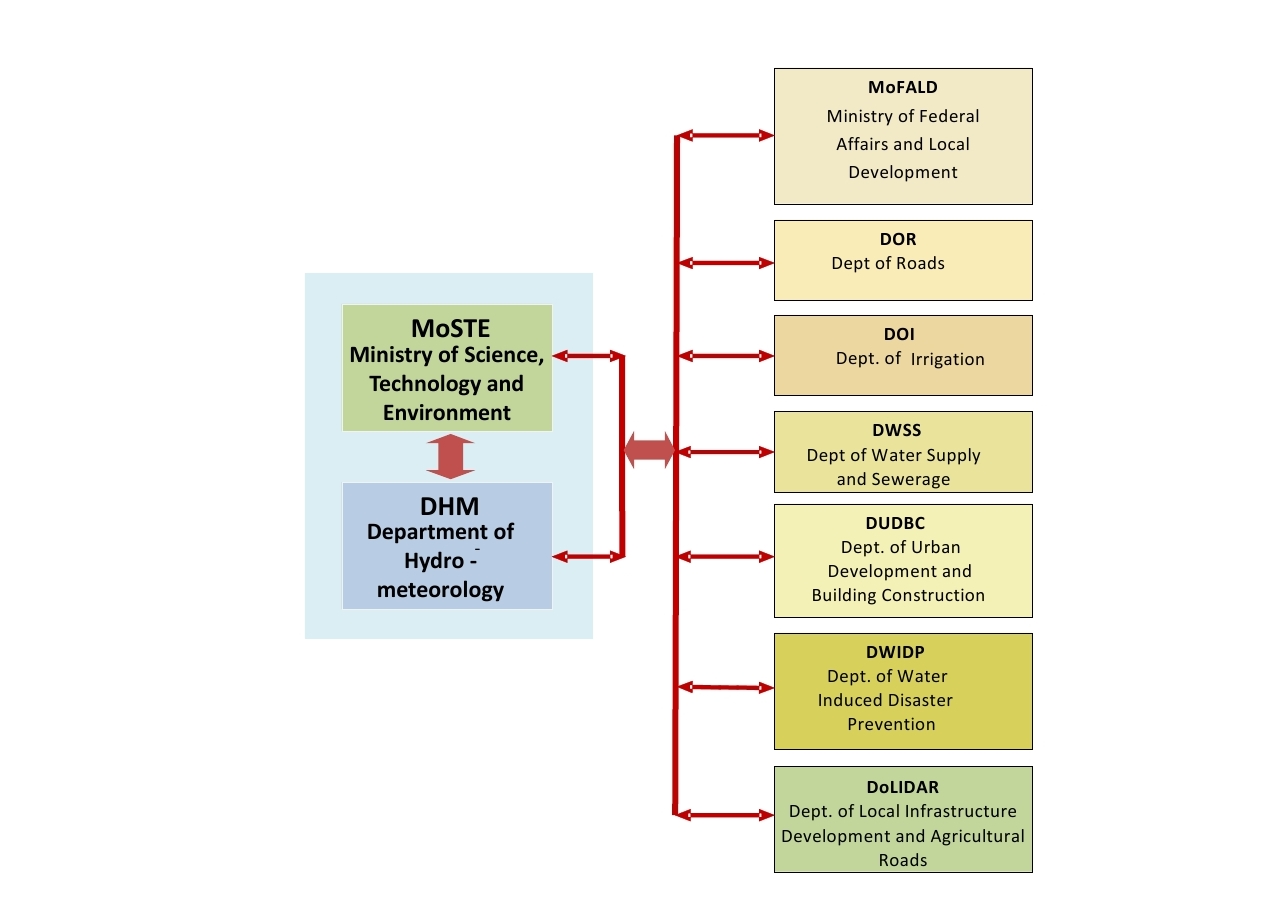
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introduction

This report was developed as part of the TA – 7984 NEP: *Mainstreaming Climate Change Risk Management in Development Project* supported by ADB with funding from the Climate Investment Fund (CIF), and implemented by the Ministry of Science, Technology and Environment (MOSTE) in partnership with ICEM – International Centre for Environmental Management.

The project involves line departments working together with MOSTE in eight districts to develop and test a vulnerability assessment and adaptation planning approach tailored for their needs. The aim is to distil the lessons of the district experience into reforms at national level for planning and managing more resilient infrastructure. The national agencies are those concerned with infrastructure development throughout Nepal such as irrigation, roads and bridges, water induced disasters, urban planning and water supply and sanitation systems (Figure 1).

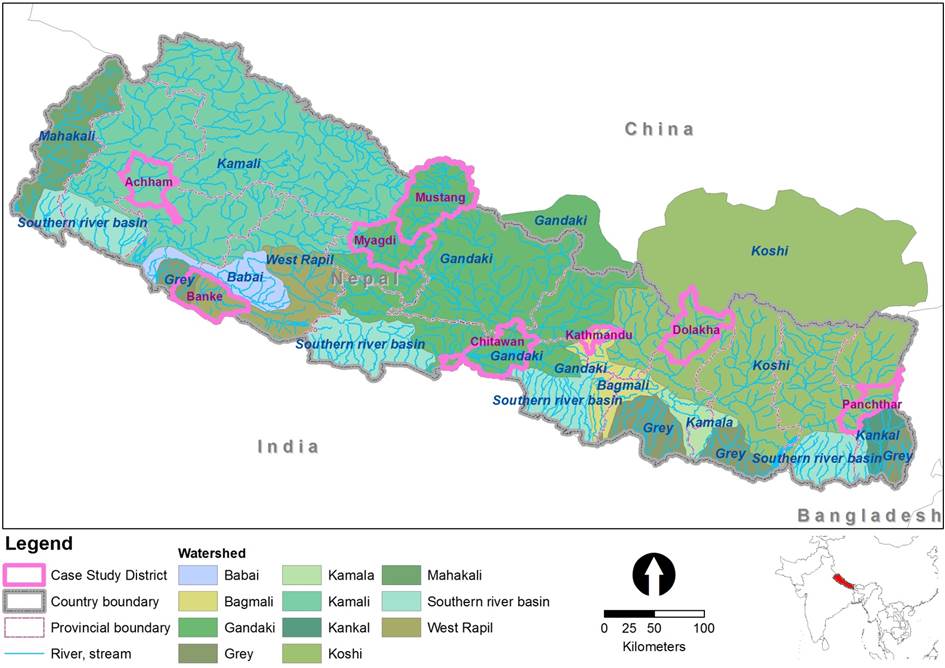
**Figure 1: TA – 7984 NEP infrastructure sector department partners**



A core group of technical staff from each of the departments participated in working sessions and missions to the eight districts of Kathmandu, Dolakha, Achham, Banke, Myagdi, Chitwan, Panchthar and Mustang (Figure 2) where vulnerability assessments and adaptation planning exercises were conducted for existing strategic infrastructure assets. The target districts were identified by core group members to reflect the diverse ecological zones of the country and varying environmental and social conditions in which infrastructure is built. The district experience and sector analysis is documented in district reports, sector synthesis reports and linked guides for use on a systematic basis in each department.

The core group comprised of some 30 members from 9 government agencies with each agency having a wider range of staff involved in the process of setting and implementing reform priorities with support from the project team (Figure 3).

**Figure 2: Target districts for developing an approach to infrastructure vulnerability assessment and adaptation planning**



Sector focal points on the core group have a key role in promoting the climate change mainstreaming in their departments so that the design and management of existing and planned infrastructure progressively adjusts to become more resilient to the most significant projected changes and their associated potential impacts.

**Figure 3: Infrastructure sector department climate change core group**



**INTRODUCTION TO THIS REPORT**

At an early stage in the project an institutional analyses was conducted for each of the partner agencies. Those analyses were part of the baseline assessment in understanding the vulnerabilities of the infrastructure agencies. They were intended to answer the following questions for each sector:

1. What is the organizations mandate and functions
2. What are the main gaps and challenges facing the sector in addressing climate change?
3. To what extent has climate change already been mainstreamed?
4. Does the sector have the data and tools to mainstream climate change
5. How can climate change mainstreaming be improved?

Each analysis involved documenting the legislation and policies, and strategies and plans governing the agency. The organizational structure and staffing were reviewed for gaps and opportunities in the capacities for addressing climate change. The operational tools and procedures, such as EIA and spatial planning, were also assessed for their potential to facilitate adaptation in the sector. More detailed review of the sectors infrastructure covered the main categories and priorities, overall inventory, design standards and guidelines and geographic spread. An important focus of the institutional analyses was the agency’s experience with past extreme climatic conditions and events such as floods and landslides – with the aim of gathering information on infrastructure categories that have been most affected and on the hot spot localities. Finally, how has the sector responded to those extremes? Documenting past adaptation provides a foundation for future action building on the best practices and arrangements already in place.

This Institutional Analysis Report on the Ministry of Science, Technology and Environment (MOSTE) is unusual because the Ministry does not plan and construct infrastructure. Instead its function is as a catalyst for action to build resilience in infrastructure sectors through good environment management and climate change adaptation practices. The orientation of the analysis is on the policies and tools for achieving that objective. The Report provides a profile of the Ministry, its strengths and weaknesses in responding to that mandate. This Report was prepared on the basis of information collected by the TA team through a series of interviews and consultations with the relevant officials of the Ministry and through relevant documents received during that period. This report is in its present shape after going through several reviews and adjustments by concerned MOSTE officials.

# Background

Mainstreaming climate change risk management in development is one of the components (component 3) of Nepal’s Strategic Program for Climate Resilience (SPCR). *This is a technical assistance project administered by ADB.* This project focuses on institutional strengthening and capacity building, creating and disseminating knowledge and information about climate change and its impact on Nepal, and generating and applying tools for climate change risk management. The expected **outcome** of the TA is that the GoN's infrastructure development programs, policies and projects incorporate safeguards to address the effects of climate change. The expected specific outcomes of the project are:

1. Risk screening tools or methods are applied for projects in irrigation, flood protection, roads, water, supply and sanitation and urban development.
2. Climate change risk and vulnerability assessments incorporating climate information performed for 50% of approved projects determined at risk in those sectors.
3. There are trained focal points in charge of climate change risk management in the Government infrastructure agencies

To achieve these outcomes the TA has three **Outputs**, each comprised of a number of **Activities.**

**Output 1:** Climate change risks are integrated into Nepal's implementation of development projects.

**Output 2:** Knowledge management tools are developed and applied.

**Output 3:** Outputs from the SPCR and other adaptation programs are managed for results and lessons learned are incorporated into Nepal's climate change program

There are a set of eight activities proposed under Output 1. Those are

1. Supporting the implementation of Nepal’s climate change policy analysis;
2. Developing and document sector-specific knowledge and case analysis;
3. Incorporating climate change risk management into sector guidelines, manuals, and standards;
4. Training and sharing knowledge on climate change risk management;
5. Reviewing sector policies;
6. Developing data support infrastructure for the implementation of climate change risk management;
7. Preparing detailed concept notes for climate change-related projects; and
8. Establishing an overall climate change risk management system.

The project has identified 6 different sectors associated with the development of infrastructures. Those are irrigation, roads and bridges, water supply and sewerage, water resource engineering, urban planning, sand mining and GLOF. One of the objectives of the project is to develop effective Environmental Impact Assessment System considering climate change impacts on the development projects in the country so that the adverse environmental impacts of climate change on development project could be reduced and at the same time the adverse environmental impacts from the development project could be reduced and beneficial impacts could be enhanced through implementing different mitigation and adaptation measures.

This report makes a contribution to the project by setting out an institutional analysis of the focal Ministry of Science, Technology and Environment in relation to its activities for mainstreaming climate change and the Environmental Assessment process. It also provides an analysis of the implementation of the EA process by the main sector agencies associated with the development of infrastructure.

# The Ministry of Science, Technology and Environment

The Ministry of Population and Environment (MoPE) was established as an executive body for the first time in 1995 with the purpose of environmental conservation, pollution prevention and control and conservation of national heritage as well as the effective implementation of commitments expressed in regional and international levels. Dismantling the then Ministry for Population and Environment in 2005, Division of Environment was included to the Ministry of Science and Technology and renamed as the Ministry for Environment, Science and Technology. The Ministry of Environment (MoEnv) was formed in 2009. It was again restructured in 2012 as the Ministry of Environment, Science and Technology (MoEST). The name has been changed recently as the Ministry of Science, Technology and Environment (MoSTE).

**The Mission** of the ministry is to i) promote the sustainable development of the country through environmental protection; ii) conserve the natural environment and cultural heritage; iii) create the clean and healthy environment through conserving the life support environmental elements such air, water and soil and iv) promotion of science and technology.

**The main objectives** of the MoSTE are as follows:

* Promote environmentally sustainable economic development of the country
* Formulate and implement policies, plans and programs related to science, technology and environment including climate change adaptation and mitigation;
* Prepare Acts, Regulations, Environmental Standards and Guidelines in the field of environment including climate change;
* Carryout research activities in the field of science, technology and environment and contribute to achieving the national objectives regarding poverty alleviation
* Develop and promote traditional indigenous technologies
* Promote environmental education, disseminate and raise awareness on environment and climate change issues through mass media;
* Strengthen environmental governance, control pollution, enforce environmental standards and monitoring
* Assess and approve environmental impact assessment;
* Develop human resources, and act as a national and international focal point in the field of science, technology and environment.
* Encourage the intellectual groups working in the field of science, technology and environment by creating appropriate opportunities.

# Other institutions within MOSTE

The Department of Hydrology and Meteorology (DHM), Alternative Energy Promotion Centre (AEPC), National Information Technology Centre (NITC), Office of Controller of Certification Authority, National Forensic Science Laboratory, Nepal Academy of Science and Technology (NAST), B.P. Koirala Memorial Planetarium Observatory and Science Museum, Department of Information Technology and recently approved Department of Environment are other institutions within the Ministry of Science, Technology and Environment.

**The Department of Hydrology and Meteorology** has the mandate to generate data/information on river hydrology, climate, agro-meteorology, sediment, air quality, water quality, limnology, snow hydrology, glaciology, wind and solar energy. It also forecasts weather for general and aviation purpose regularly. It has four divisions namely Hydrology (includes Snow and Glacier Hydrology among others), Meteorology, Coordination, and Weather Forecasting Division. Currently the department has been maintaining 286 meteorological observation stations in the country and 170gauging stations including 20 sediment monitoring stations.

Some of the major challenges faced by this Department include poor distribution of observation network, limited financial resources, inadequate trained manpower, inadequate flood and weather forecasts quality, inadequate ability to detect extreme events/ climate change trends. Currently, the reliability of weather forecasting is very poor. For timely and increased reliability of forecasts, it is necessary to improve the manual stations into real time and also increase the network in terms of its density and number of parameters to be monitored. Lack of sufficient skilled human resources, training and incentives for staffs, appropriate software and hardware are major constraints in developing timely and reliable forecast for short, medium and long term.No work has yet been initiated to develop early warning products and assess the effectiveness of such products except 24 hr weather forecast for general public and communication of real time water level data through Website and SMS in few river basins. It is necessary to develop early warning products for all major climate related disasters frequently experienced in the country. For this, the DHM’s capacity should be strengthened with provision of sufficient qualified human resources, equipment and financial resources.

DHM has been trying to upgrade its activities by implementing different projects. With the support of World Bank, preparation of the project on Building Resilience to Climate Related Hazards has begun a Pilot Project with objectives of institutional strengthening; modernization of hydro-meteorological and environmental observation networks; enhancement of the service delivery system and creation of an agriculture management information system.

**The Department of Information Technology** has been recently established with the objectives of performing a leading and coordinating role in implementing E-governance; reducing digital divide; updating e-database of the government and maintaining its security; creating job opportunities through the use and promotion of information technology for the government; helping for developing appropriate human resource in the field of information technology.

The mission of **AEPC** is to make renewable energy mainstream resource through increased access, knowledge and adaptability contributing for the improved living conditions of people in the country. A total of 18,979 families in 68 districts have been benefited from Biogas technology. Similarly, 31, 948 families are benefiting from Micro-hydro, 35,627 families from household solar electrification, 24,275 families from improved water mills, 18,461 families from improved cooking stoves.

**Nepal Information Technology Centre** has mandate to make information technology accessible to the general public, build a knowledge-based society, implement of E-governance, assist in all kinds of computer related service of the government of Nepal, serve as data depository by collecting all types of data at the national level, and act as data bank of information and assist in computerization of records in government offices and a regulator for the healthy development of information technology.

The **NAST** undertakes studies on science and technology, advising the government on the formulation of technology transfer policy and its implementation. It regularly publishes research reports and newsletters to disseminate information. It confers awards to those involved in promoting science and technology. It also provides grants for research activities. The **Nepal Climate Change Knowledge Management Center**(NCCKMC) has been recently established within NAST in partnership with the Ministry of Science, Technology and Environment under the NAPA Project. The Centre serves as a dedicated institution that would help deliver the required knowledge and information for climate change action.

# Legislation and policies

## Periodic Development Plans

Nepal has implemented 11 periodic development plans between 1956 and 2010.

* Cross-sectoral policies such as environment and land use were introduced in the Fifth Plan (1975-80) with emphasis on the rational and efficient utilization of land resources focusing on afforestation and erosion control in the marginal areas.
* The Sixth Plan (1980-85) aimed at maintaining a proper balance between nature, population and environment through the control of soil erosion, conservation and development of forest resources and maximum utilization of water resources for irrigation, power and drinking water.
* One of the objectives of the Seventh Plan (1985-90) was to control environmental degradation through a system of sound environmental management. Several Master Plans – forestry, irrigation, horticulture, dairy and livestock development and a National Conservation Strategy were prepared in 1980s which provided the basis for sustainable development in these sectors.
* The Eighth Plan (1992-97) aimed at achieving sustainable utilization of land resources by strengthening institutional capabilities of government agencies and mobilization of local people in environmental management. Nepal Environmental Policy and Action Plan (1993), Environmental Protection Act (1996), and Regulation (1997 were also prepared during the Eighth Plan period. The Environment Protection Act (1996) and Environment Protection Regulation (1997) have made EIA and IEE mandatory for different development activities and empowered the government to declare Environmental Protection Areas. Similarly, Local Self Governance Act (1999) and Regulations (1999) have defined the roles and responsibilities of local bodies – VDC/Municipality and DDC in the conservation and management of natural resources and environment.
* The Ninth Plan (1997-02) also emphasized on sustainable utilization and conservation of natural resources by ensuring people’s participation, institutionalization of EIA and land use planning. The government of Nepal endorsed United Nations Millennium Declaration in 2000. Being committed to achieve the MDGs, the government incorporated the MDGs into the strategic framework of the country’s Tenth Plan/Poverty Reduction Strategy Paper. Ensuring environmental sustainability is one of the goals of the MDGs.
* The Tenth Plan (2002-2007) aimed at creating a clean and healthy environment and attaining sustainable development through wise/judicious utilization of natural resources. It emphasized the promotion of new technologies and involvement of local bodies in the protection of environment. Sustainable Development Agenda for Nepal was prepared in 2003 in order to guide and influence national level planning and policies up to 2017. Series of sectoral policies and strategies relevant in environment conservation and natural resource management were formulated during the Tenth Plan period. Those were Water Resource Strategy (2002) and National Water Plan (2005), National Biodiversity Strategy (2002) and Implementation Plan (2006), National Wetland Policy (2003), Irrigation Policy (2003) and Irrigation Vision (2006), Medicinal Plants and Non-Timber Forest Products Development Policy (2004), National Agricultural Policy (2004), Terai Arc Landscape Strategic Plan (2004-14), Water Induced Disaster Management Policy (2005), Science and Technology Policy (2005), Biotechnology Policy (2007), Rural Energy Policy (2006), Nuclear Policy (2007) and Agro-biodiversity Policy (2007).
* A Three-Year Plan Approach Paper for 2010/11-2012/13) has been prepared. National Strategy for Disaster Management was prepared (2008), Information Technology Policy (2010), Range Land Policy (2010) and recently Climate Change Policy (2011) and National Land Use Policy (2011) have been prepared and approved by the government. National Adaptation Program of Action Plan (NAPA) 2010 and a framework of Local Adaptation Plans for Actions (LAPA) have also been prepared. National Planning Commission with support from ADB and UNDP has recently prepared a framework and screening tools to make the three-year periodic plans (2010-2013) resilient to climate risk in sectors like natural resources, water, disaster risk reduction, transportation and infrastructure. It emphasizes for the promotion of renewable energy and environmentally sustainable transport and REDD strategy for mitigation and development of climate responsive agriculture, water management, disaster risk management and climate responsive infrastructure for adaptation. Recommended implementation strategies are multi-stakeholder partnership, financing, devolution of authority, inclusive decision making and mainstreaming policy planning. A pilot program for climate resilience (PPCR) has been initiated. A draft version of strategic program for climate resilience (SPCR) under PPCR has been prepared.

Nepal is a party to about 23 environment related international conventions. National Capacity Needs Self-Assessment for the implementation of three international conventions - UNCCD, UNFCCC and CBD have been carried out.

Major provisions of policies, strategies, plans, acts and regulations related to environment including climate change and disaster management have been summarized in Table 1 and a brief description of each is given below.

## Policies for Environment and Climate change

**Nepal Environmental Policy and Action Plan, 1993**

Nepal Environmental Policy and Action Plan (NEPAP) has been prepared in 1993 as part of the government’s continuing efforts to incorporate environmental concerns into the country’s development process. It aims to develop a coherent strategy to deal with Nepal’s environmental problems. The NEPAP analyses environmental issues in a multi-sectoral framework and sets forth a strategy for maintaining the country’s natural environment, the health and safety of its population and its cultural heritage as economic development occurs. The main policy aims of NEPAP were to:

* Manage natural and physical resources efficiently;
* Balance and coordinate development efforts and environmental conservation for sustainable fulfillment of the basic needs of the people;
* Manage, develop and conserve natural, physical and heritage resources;
* Identify and mitigate adverse environmental impacts of development projects and human actions;
* Utilize, manage, develop, conserve and recycle natural and physical resources in a manner that is not detrimental to their ability to yield long-term benefits;
* Formulate and implement special protection and conservation policies and plans to safeguard important national heritage resources such as rare wildlife species, plants, biodiversity, genetic pools, environmentally sensitive areas and manmade heritage sites of aesthetic and cultural significance;
* Formulate acts and laws pertaining to various environmental issues as the need arises and carry out timely reform of existing legislation;
* Develop institutions for the effective implementation of environmental laws and policies.

NEPAP has prepared a list of 72 policies and 135 recommended actions under different thematic areas. Many of them are short term action plans.

The main policies for land management include improvement in soil fertility management by increasing supplies of farmyard manure and by reducing the stock density of livestock on arable land, promotion of policies that directly increase soil fertility, development of extension system capable of responding to farmer's needs and provision of technical information relevant to the needs of farmers.

Table 1: Policies, Strategies and Plans relevant to Environment, Climate Change and Disaster Risk Reduction

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **SN** | **Name** | **Year** | **Major provisions** | **Remarks** |
| 1 | Nepal Environmental Policy and Action Plan | 1993 | Efficient management of natural resources, mitigation of adverse environmental impacts of development projects, formulation and timely reform of acts and laws pertaining to environmental issues; development of institutions for the effective implementation of environmental laws and policies | Focuses only on environmental impacts of development projects but not to address CC risk |
| 2 | Millennium Development Goals (MDG) | 2002 | Ensuring environmental sustainability | CC risk not discussed and addressed |
| 3 | Sustainable Development Agenda of Nepal (SDAN) | 2003-2017 | Climate change processes and impacts discussed, emphasize to invest in clean energy, weather prediction system, monitoring of glacial lakes and disaster preparedness planning, set up a system of early warning in every village and building decentralized response capacity | Though CC risk is discussed, but screening for infrastructure development not emphasized |
| 4 | National Strategy for Disaster Management | 2008 | Aims to develop and enact national integrated disaster response system with 5 priority actions: ensuring disaster risk reduction with a strong institutional basis for implementation; identifying, assessing and monitoring disaster risk and enhancing early warning; better knowledge management for building a culture of safety; reducing the underlying factors and enhanced preparedness for effective response | Though highlighted for the development and implementation of hazard specific standards and guidelines, assessment of risk and vulnerabilities and integration of disaster risk reduction consideration into infrastructure development planning and implementation and protection of physical infrastructure, the processes and activities for mainstreaming climate change risk not specified |
| 5 | Three Year Plan Approach Paper | 2010-2013 | Adapt and minimize the negative impacts posed by climate change in development activities; promotion of environment; protection of infrastructure; development of environment friendly and climate change adapted infrastructure; establishment of early warning system and establishment of an international research centre for climate change in Nepal | Strategies and guidelines for development of environment friendly and climate change adapted infrastructure and protection of infrastructure are not adequately discussed |
| 6 | National Adaptation Program of Action Plan (NAPA) | 2010 | Integrated watershed management in water stressed areas – flood and drought; disaster management – water retaining structures, rehabilitation and conservation of water supply structure and water sources; GLOF monitoring | CC risk management of other infrastructure – bridges, road, buildings, settlements not discussed and addressed |
| 7 | Climate Change Policy | 2011 | Emphasis on climate-resilient development, forecasting of water-induced disasters and risk, development of early warning system, rain-water harvesting and environmental sanitation, basin approach for water management | CC risk management cycle not well covered. Preparedness through spatial planning and designing not emphasized |
| 8 | National Framework on Local Adaptation Plans for Actions (LAPA) | 2011 | Recognized the role of local bodies in integrating climate adaptation and resilience into local and national development planning processes. | Focuses on vulnerability and adaptation assessment of communities and development of adaptation options but needs and tools of vulnerability assessment of infrastructure and adaptation options are not discussed adequately |

Similarly, forest and rangeland management policies formulated in NEPAP included improvement in forest management by implementing the findings of FSMP, encouragement to community participation in forest management, improvement in range-land management, encouragement for greater private sector involvement in managing national forests, reorientation of forestry research, raising awareness about the importance of forest conservation, improvement on the basis on which land use is decided, minimization of adverse environmental impacts of forest related projects and promotion of research and development of alternative energy sources to reduce dependence on biomass sources.

Water resource management policies included encouragement to protection measures for watershed in order to reduce soil erosion and downstream sedimentation and ensure major protected watersheds adequately.

Improvement in the coverage and delivery of urban water supplies, improvement in the coverage and delivery of rural water supplies, revision of institutional arrangements to shift the focus of government agencies from direct service provision to facilitating service delivery, raise demand for sanitation, increase in sanitation coverage by providing services that people want and are willing to pay for, improvement in the quality of drinking water and improvement in food safety and pesticide control are the policies associated with health and sanitation.

Policies on population included improvement in delivery of FP/MCH services to lower fertility rates, raise awareness with regard to range and availability of FP products and the importance of population control, improvement in the institutional arrangements for developing population policies, and improvement in the socio-economic status of women.

Poverty alleviation policies are focused on reduction in population growth rate, increase in agricultural productivity, expansion in off-farm employment opportunities and development of measures to provide direct relief to the poor.

Policies for biodiversity conservation are associated with the strengthening the capacity of DNPWC to act as the main institution responsible for protected areas, ensuring adequate representation of Nepal’s major ecosystems in the protected area system, involvement of local people directly in the management of parks, preservation of endemic and endangered species and their habitats and promotion of private and public institutions for biological resource inventory and conservation.

The major policies for the conservation of cultural heritage include review of the institutional arrangements governing the protection of cultural heritage sites, improvement in the level of knowledge concerning the status of cultural resources, and investigation of mechanisms for raising additional revenue to fund preservation work.

For tourism promotion, its policies include: improvement in institutional arrangements in the tourism sector; raise awareness concerning the importance of environmental preservation and finalization of tourism policy.

The policy focus for infrastructure development is on ensuring adequate surface drainage on irrigation projects, development of groundwater resources in the Terai as a source of water irrigation, improvement in the management of irrigation schemes to maximize productivity gains, encouragement in the conservation of scarce irrigation resources, ensuring the use of EIA for irrigation projects with significant environmental impacts, promotion of the use of environmentally friendly road construction methods, improvement in the capacity of DOR to undertake environmental assessments of road projects and minimization of environmental impact of hydroelectric projects.

Regarding the policies on environmental education, it recommends to incorporate environmental concerns in all formal education program and informal education and training programs. The policy on public resource management focuses on reviewing of current levels of government expenditure to ensure resources were directed to priority areas and sufficient resource allocation ensured for environmental protection.

**Sustainable Development Agenda for Nepal (SDAN), 2002**

Nepal has prepared Sustainable Development Agenda (SDAN) in 2003 to guide and influence national level planning and policies up to 2017. The agenda draws upon and is in conformity with the longer term goals envisaged in the Ninth and Tenth Plans, Poverty Reduction Strategy Paper, the Millennium Development Goals, and commitments made by the country in various international forums. It emphasizes the growth and reorientation of agriculture through investment in fertilizer, irrigation, research and extension, high value-low volume crops, expedite land reform, land use management and security of contractual farming; environmental redress by creating economic incentives to use clean energy sources; extension services through social mobilization with assistance of NGO/Groups and local bodies; management of natural forest and protected areas by promoting people’s participation; conservation of ecosystem and genetic resources by implementing National Biodiversity Strategy; conservation of biodiversity at landscape level; protection of land against degradation by conducting activities to minimize losses from soil erosion, flood, landslides, desertification and other effects of ecological imbalance through the enforcement of locally prepared land use plans and more effective interaction between forestry and farming practices; promotion of sustainable harvest and management of non-timber forest products; ensuring agricultural biodiversity; conservation of range land by developing comprehensive range conservation strategies; good governance through effective decentralization, civil service reform and legislative provisions; set up a system of early warning in every village and weather prediction system; and building decentralized response capacity.

SDAN is the national document that has a separate heading on climate change and provides its status and sets future agenda for action. The climate change impacts identified in SDAN are i) the temperatures are likely to increase more in high mountain areas than elsewhere, ii) glaciers and snowfields will recede and may even disappear, reducing Nepal’s dry season water flow, iii) irrigation and drinking water supply as well as the reliability of hydroelectricity will be greatly impacted, iv) glaciers will recede often leaving behind growing glacier lakes that can break through terminal moraines causing catastrophic floods, v) likely shift in monsoon precipitation patterns in ways that will threaten Nepal’s current agricultural practices as well as infrastructure, vi) changing temperature and moisture patterns will also threaten biodiversity, especially in mountain areas where migration of species is physically restricted. It emphasizes investment in clean energy, weather prediction system, monitoring of glacial lakes and disaster preparedness planning.

**The National Strategy for Disaster Management, 2008**

The National Strategy for Disaster Management has been prepared with a vision of a Disaster-resilient Nepal and objectives of enhancing the safety of life and property from the natural disasters by making the disaster management system efficient, capable, strong and effective by means of sustainable, environment-friendly and feasible development construction. It has identified 5 priority actions. Those are i) ensuring disaster risk reduction with strong institutional basis for implementation, ii) identifying , assessing and monitoring disaster risk and enhancing early warning system, iii) better knowledge management for building a culture of safety, iv) reducing the underlying risk factor, and v) enhancing preparedness for effective response. It emphasizes mainstreaming Disaster Risk Reduction (DRR) into national development, integration of DRR and preparedness in plans and programs of local bodies, development and implementation of specific standards and guidelines, assessment of hazard specific risk and vulnerabilities, development of GIS based disaster management system and early warning system, incorporation of disaster education and implementation of awareness raising activities, integration of disaster risk reduction considerations into infrastructure development planning and implementation, and protection of physical infrastructure.

**The Three Year Plan Approach Paper (2010/11-2012/13)**

It has two main objectives in environment and climate change sector. Those are i) to adapt and minimize the negative impacts posed by climate change by making human activity and development activities environment friendly through encouraging the concept of green development and ii) to control urban pollution and protect the natural beauty of rural areas. The strategies adopted are empowerment and development of the institutional capacity of the mechanism of environment related policies and laws; development of environmental management as integral part of development programs by internalizing it in development programs; formulation and implementation of the environmental programs effectively prioritizing the national and international commitments; creation of environmental awareness; minimization of river pollution in big cities and control of water, land, sound and air pollution; acclimatization to climate change and management and preservation of natural resources along with the continuation of disaster risk reduction; poverty reduction and poverty environment initiative; development of reliable weather forecasting system and research and development regarding climate change; and promotion of environment. It has also emphasized on the implementation of NAPA; application of bio-engineering to control landslide and protect infrastructure; development of environment friendly and climate change adapted infrastructure; promotion of carbon trade through clean Development Mechanism(CDM); operationalization of environment related agreements of international conventions; conservation of national heritage; adoption of the polluter's pay principle and pollution prevention pays principle; effective implementation of Disaster Risk Reduction Strategy 2009; establishment of early warning system in the glacier, glacier lakes and flood prone rivers locations; and establishment of an international research centre for climate change in Nepal.

**National Adaptation Program of Action (NAPA), 2010**

NAPA has proposed 8 priority activities for adaptation to climate change. These are:

1. Integrated management of agriculture, forest and biodiversity sector (integrated watershed management in Churia, on-farm soil and water conservation, water management in river basin areas, flood management, multi-use system, non-conventional irrigation systems in water stressed area)
2. Improved system and access to service related to agricultural development (improving access to agricultural services, improved production and marketing systems, strengthening highland-lowland linkages, underground water management for irrigation, improved animal breeds)
3. Disaster management (community led risk reduction, water retaining structures, rehabilitation and conservation of small scale water supply schemes and traditional water sources)
4. GLOF monitoring (monitoring, development of early warning system, enhancement of institutional capacity, hazard and risk mapping and contingency plans, research and improvement in hydrological network management)
5. Forest and ecosystem management (agro-forestry, plantation, scaling up of biomass energy technology, community based forest fire management)
6. Public health (research and piloting, awareness creation, investigation on disease outbreak and emergency response, scaling of programs on vector borne, water and food borne diseases, strengthening forecast/early warning and surveillance system)
7. Ecosystem management (improvement in pasture and range land management technique, rehabilitation of degraded mountain ecological zones, conservation and promotion of medicinal plants and NTFPs, integrated wetland management in Terai, biological corridors in the Terai and mountains)
8. Management of water resources and clean energy supply (conservation of lakes supplying water, rain water harvesting, conservation of water sources, ground water monitoring and regulatory measures, micro-hydro power projects, water mills for multi-use).

It suggests a watershed and landscape level approach in dealing with issues related to food security, biodiversity loss, water scarcity, energy use, settlements, disease outbreak and governance.

**Climate Change Policy, 2011**

* Climate Change Policy, 2011 has highlighted the needs for the reduction of GHG emission through additional development and utilization of clean, renewable and alternative energy technologies; reduction of emission of air pollutants at source; promotion of carbon trade and clean development mechanism; expansion of the scope of carbon sequestration through scientific management of the forests, formulating and implementing land use plans and controlling deforestation; adoption of a low carbon emission and climate-resilient development path; development of a mechanism for optimal utilization of international, regional and local funding sources, including reducing emissions from deforestation and forest degradation (REDD); and development and expansion of low methane emitting agricultural technologies.
* It has also emphasized on the needs of forecasting water-induced disasters and risk; development of early warning system; development of modern water conserving technologies; identification, development and utilization of agricultural varieties/species that can tolerate drought (too little water) and floods (too much water); development and implementation of a scientific land use system; proper utilization, promotion and conservation of forest resources as a means of alternative livelihoods; conservation of soil and water through measures such as source protection, rain water harvesting, and environmental sanitation; promotion of plantation with multi-purpose tree species in private fallow land, areas affected by soil erosion, landslides and sloping land; and introduction of agriculture and disaster insurance. It has adopted “polluter pays principle” for generation of financial resources and basin approach for water management through regular monitoring of water resource availability.

**National Framework on Local Adaptation Plan of Action (LAPA), 2011**

Government of Nepal has prepared the National Framework on Local Adaptation Plans for Action (GoN, 2011) with objective of implementing National Adaptation Program of Action (NAPA) at local level keeping in view the location and context specific climate change impacts. The guiding principles of National Framework on LAPA are bottom-up, inclusive, responsive and flexible. It will ensure proper consideration of the needs and resources of the climate vulnerable people; identification and integration of the needs of households and communities most risk to climate change; participation of economically poor, deprived of public services and socially disadvantaged people; immediate, efficient and effective delivery of adaptation services and immediate delivery of administrative, financial and institutional services.

The VDC and municipality have been considered the most appropriate unit for integrating climate adaptation and resilience into local and national development planning processes. The citizen ward forum and information centre formed by the local bodies should be involved in local adaptation planning processes. The VDC and municipality are expected as administrative and geographic unit to prioritize local or community-specific adaptation activities. They are also considered as operational units through its development council for planning, coordination, monitoring and evaluation and service delivery by integrating LAPA into sectoral, and village and development planning processes as well.

The framework has proposed seven steps for its (LAPA) formulation and implementation. Those are i) climate change sensitization, ii) climate vulnerability and adaptation assessment, iii) prioritization of adaptation options, iv) LAPA formulation, v) LAPA integration into planning processes, vi)LAPA implementation and vii)LAPA progress assessment. The framework has also elaborated the methods and tools to be followed in each step of LAPA cycle.

## Environmental legislation

Legislative provisions related to environment, environmental impact assessment, climate change and disaster risk reduction have been summarized in Table 2 and a brief description of those is given below.

**Environment Protection Act (EPA), 1996**

Environment Protection Act was enforced on January 30, 1997 with objective of maintaining clean and healthy environment by minimizing adverse impacts likely to be caused from environmental degradation taking into consideration that sustainable development could be achieved from the inseparable interrelationship between the economic development and environmental protection. It has made IEE and EIA mandatory for any development project. It has guided IEE/EIA processes, made provision for the prevention and control of pollution, provision of environment inspector, protection of national heritage, environment protection area, establishment of a laboratory, establishment and operation of environment protection fund, power to constitute Environment Protection Council, concession and facilities to encourage positive impacts on environment protection, compensation mechanism, punishment and power to frame guidelines and rules.

Though the act has made provision for environment inspectors and establishment of a laboratory, but it has not been effectively implemented yet. Although environment protection fund is established, operational guidelines have not yet been developed and implemented.

**Environment Protection Rule (EPR), 1997**

Environment Projection Rules have been developed and came into force on June 26, 1997. It explains the process of IEE and EIA; methodology for determining the scope of environment impact assessment; approval processes; qualification of environmental inspectors and their functions, duties and powers; conservation of national heritages and environment conservation zone, provisions related to laboratories, compensation and other provisions such as power to grant, rewards and commendation and screening criteria, working processes and reporting. According to EPA, 1997, all development projects should first be screened using criteria that are based on project type, size, location and cost stipulated in the Regulation to determine the level of environmental assessment required (Whether IEE or EIA or none) ( See Table 3 for detail screening criteria).

Table 2: Acts and Regulations related to Environmental Impact Assessment and Environment Management

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **SN** | **Name** | **Year** | **Key Provisions** | **Remarks** |
| 1 | Environment Protection Act | 1996 | Mandatory for screening of each development project whether it needs IEE and EIA | CC risk screening tools not incorporated |
| 2 | Environment Protection Rules | 1997 | Discussed the process of IEE and EIA with objective criteria for screening | CC risk screening tools not incorporated |
| 3 | Local Self Governance Act | 1999 | Empower local bodies for the conservation and management of natural resources, environment and development | CC risk not discussed and addressed |
| 4 | Local Self Governance Regulation | 1999 | Empower local bodies for the conservation and management of natural resources, environment and development | CC risk not discussed and addressed |
| 5 | The Interim Constitution of Nepal | 2007 | Conserve and manage natural resources by mobilizing local communities; avoid adverse effect on environment from physical development activities; protect environment and biodiversity; sustainable use and equitable distribution of the benefit; conserve traditional knowledge, skills and practices | Emphasizes on clean environment without reference to healthy environment to address climate change risk |

**Local Self-Governance Act, 1997**

The Local Self-Governance Act was enforced on April 30, 1999 with the aim of empowering local bodies to formulate and implement development plans. It consists of provisions related to the formation of local bodies, working procedures and functions. In accordance with the Act, local bodies have been formed at three levels –

* Village Development Committee (VDC) at village level,
* Municipality at town level,
* District Development Committee at district level.

The Act has empowered these local bodies to prepare and implement and maintenance of infrastructure development such as drinking water projects, rural roads, bridges, irrigation dams and canals, community buildings, rest houses and public toilets. They are also empowered to develop and implement programs on protection and conservation of environment, biodiversity and soil.

**1998 Local Self Governance Rule, 1999**

The Local Self Governance Rule came into force on December 30, 1999. It has made provisions for classification of local bodies, its working procedures, formation of different committees, approval of building construction works, preparation of resource map, formulation and implementation of periodic plans, and supervision and monitoring of different projects and programs formulated and implemented by those local bodies.

There has not been election since 2001 due to political turmoil. So, there have been practices for forming local bodies through consensus among the local political parties.

Table 3: Criteria for screening of projects requiring IEE or EIA as per EPR, 1997 (amendment till 2067/06/18)

| **SN** | **Sectoral Criteria** | **IEE** | **EIA** |
| --- | --- | --- | --- |
| **1** | **Overriding criteria** |  |  |
|  | Any development projects, physical activities, land use change activities involving cost (Rs) | 50,000,000 to 250,000,000 | > 250,000,000 |
|  | Any activities in areas (historical, cultural and archeological significance; national park, wildlife reserve, wetland and conservation area and sources of public drinking water supply). |  | Yes |
|  | Clear felling or rehabilitation of national forests (ha) | < 5 | > 5 |
| **2** | **Drinking water supply and sanitation)** |  |  |
|  | Rainwater harvesting area (ha) | < 200 | > 200 |
|  | Safe yield of 1 cusec of surface water resources with per cent of water supplied during dry period | < 50 per cent | 50-100 per cent |
|  | Water purification with capacity (liters per second) | > 25 |  |
|  | Underground water resource development with per cent of recharge of total aquifer | < 50 per cent | > 50 per cent |
|  | Drinking water supply project needing construction of tunnel | Yes |  |
|  | Drinking water supply project displacing people (no) | 25-100 | > 100 |
|  | Drinking water supply project needing resettlement of people upstream of water sources (no) | 500 | > 500 |
|  | Drinking water supply projects for people (no) | 5,000-50,000 | > 50,000 |
|  | Drinking water supply projects linking new source for people (no) | 10,000-100,000 | > 100,000 |
|  | River training and diversion related works (length in km) | > 1 |  |
|  | Drinking water supply project with treatment and drainage system | Yes |  |
|  | Over mining of underground water impacting from biological and chemical pollution (point and non-point sources) |  | Yes |
|  | Implementation of multipurpose project requiring water supply (liter per second) |  | > 25 |
|  | Construction of Sewerage project with cost (Rs.) | 5000,000 |  |
|  | Development of mechanism for waste control |  | Yes |
|  | Construction of waste collection, deposition and disposal site |  | Yes |
|  | Construction of waste recovery plant |  | Yes |
|  | Construction of waste storage site |  | Yes |
|  | Construction of waste treatment services |  | Yes |
| **3** | **Irrigation** |  |  |
|  | New irrigation system in Terai and Inner Terai regions with command area (ha) | 200-2000 | >2000 |
|  | New irrigation system in Hill, Valley and Tar areas with command area (ha) | 25-500 | >500 |
|  | New irrigation system on steep hillslope and mountain region with command area (ha) | 25-200 | >200 |
|  | Rehabilitation/improvement of existing irrigation system with changes headwork, main canal alignment | Yes |  |
|  | Any water resource development work displacing permanently settled people (no) | 25-100 | >100 |
|  | River control works with length (km) | >10 |  |
|  | Construction of multipurpose water reserve |  | Yes |
|  | Utilization of water through interbasin water transfer |  | Yes |
| **4** | **Roads** |  |  |
|  | Construction of new roads | District and urban | National highways and main feeder roads |
|  | Construction of ropeways (km) | 5-50 | >50 |
|  | Construction of Cable Car (km) | 1-5 | >5 |
|  | Construction of major bridges | Yes |  |
|  | Construction of tunnels for the use of road | Yes |  |
|  | Improvement of the standard, rehabilitation and reconstruction of National highways and feeder roads. | Yes |  |
| **5.** | **Housing Building and Urban Development** |  |  |
|  | Construction of residential, commercial, and their combination buildings (built up area or floor area in m2) | 5,000 -10,000 | >10,000 |
|  | Construction of Cinema Hall, Theater, Community Hall, Stadium, Concert, Spot Complex with flow of people at a time | 1,000-2,000 | > 2,000 |
|  | Development of housing for families (number) or area in (ha) | 50 or 1-4 | > 50 or > 4 |
|  | Implementation of land development project (area in ha) | 10-100 | > 100 |
|  | Development of Hard surface pavement – dry port, bus park, parking lot etc (area in ha) | > 10 |  |
|  | Site development through mining and dumping of soil (m3) | >20,000 |  |
|  | Construction of building (number of storey or height in m) | 10 -16 or 25 -50 | >16 or > 50 |
| **6** | **Solid Waste Management** |  |  |
|  | Waste management work servicing | 2,000-10,000 | >10,000 |
|  | Land filling of waste (tons per year) | 1,000-5,000 | > 5,000 |
|  | Dumping of solid wastes in urban areas for people |  | > 10,000 |
|  | Selection, segregation, management and reuse of waste using chemicals, equipments or biological methods covering area (ha) | 5-10 | > 10 |
|  | Compost plant covering area (ha) | 5-10 | >10 |
|  | Drainage/sewerage work with investment (NRs) | > 5,000,000 |  |
|  | Any kind of work for harmful waste management (building of waste disposal mechanism; construction of waste recovery plant; construction of land area filling, deposition and cover of waste; construction of waste storage place; construction of waste treatment facilities) |  | Yes |
| **7** | **Mining** |  |  |
|  | Mining in areas needing resettlement/transfer of permanently settled people (no) | 25-100 | >100 |
|  | Mining of all radioactive minerals |  | Yes |
|  | Underground mining of metallic minerals other than radioactive mineral (daily mining in ton) | <200 | >200 |
|  | Surface mining of metallic minerals other than radioactive minerals (daily mining in ton) | <400 | >400 |
|  | Underground mining of non-metallic minerals (daily mining in ton) | <200 | >200 |
|  | Surface mining of non-metallic minerals (daily mining in ton) | <1200 | >1,200 |
|  | Mining of decorative stones – marble, granite, amphibolites/polished stone | Yes |  |
|  | Mining of construction materials (general construction oriented stone, decorative stone, sand, gravel, industrial soil) (Daily mining in m3) | <300 | >300 |
|  | Underground mining of coal and mud coal (daily mining in ton) | <200 | >200 |
|  | Surface mining of coal and mud coal (daily mining in ton) | <400 | >400 |
|  | Mining of biogenic natural gas (daily m3) | <100,000 | >100,000 |
|  | Mining and processing of petroleum products |  | Yes |
|  | Extraction of sand, gravel and soil from river bed (daily m3) |  | >250 |
| **8** | **Water resources and energy** |  |  |
|  | Construction of electricity transmission line | Yes |  |
|  | Construction of 132 kv and more capacity transmission line | Yes |  |
|  | Construction of new outdoor substation | Yes |  |
|  | Implementation of hydroelectricity project with capacity (MW) | 1-10 | >10 |
|  | Implementation of power project using coal and atomic plant |  | >1 |
|  | Implementation of electricity development project from mineral oil and gas with capacity (MW) | 1-5 | >5 |
|  | Implementation of solar energy project with capacity (MW) | 1-10 | >10 |
|  | Implementation of wind energy project with capacity (MW) | 1-10 | >10 |
|  | Implementation of Bio-energy project with capacity (MW) | 0.5-2 | >2 |
| **9** | **Tourism** |  |  |
|  | Construction of hotel with bed capacity | 50-100 | >100 |
|  | Area expansion of existing airport | Yes |  |
|  | Construction of new airport |  | Yes |
|  | Rafting with engine boat in river and lakes with fish and other aquatic life | Yes |  |
|  | Opening of houseboat in lake | Yes |  |
| **10** | **Health** |  |  |
|  | Opening of hospital or nursing home or medical services with beds (no) | 25-100 | >100 |
| **11** | **Industry** |  |  |
|  | Establishment of distillery with daily capacity (liter) | <500000 | >500,000 |
|  | Establishment of chemical industry with daily capacity (MT) | <100 | >100 |
|  | Establishment of leather processing industry with daily capacity (sqft) | <10000 | >10,000 |
|  | Establishment of mining industry with fixed capital (Rs) |  | >500,000,000 |
|  | Establishment of petro chemical production and processing industry |  | Yes |
|  | Establishment of metal production industry (ferrous, non-ferous) with daily capacity (Ton) |  | Yes |
|  | Establishment of cooking, natural gas refilling, filling industry | Yes |  |
|  | Establishment of stone crushing industry | Yes |  |
|  | Establishment of rangrogan industry | Yes |  |
|  | Establishment of milk processing industry with daily capacity (liter) | 10000 |  |
|  | Establishment of lubricant production industry | Yes |  |
|  | Establishment of foam production industry | Yes |  |
|  | Establishment of battery (dry or wet) production industry | Yes |  |
|  | Establishment of sugar industry with daily production capacity (MT) | <3000 | >3000 |
|  | Establishment of carpet industry | Yes |  |
|  | Establishment of pulp or paper industry with daily production capacity (MT) | <100 | >100 |
|  | Establishment of brick and tile industry with annual production capacity (no) | <20000000 | >20,000,000 |
|  | Establishment of cement industry with per hour production capacity (MT) | <50 | >50 |
|  | Establishment of lime production industry with daily capacity (MT) | <500 | >500 |
|  | Establishment of nuclear/atomic processing industry |  | Yes |
|  | Establishment of asbestos production industry |  | Yes |
|  | Establishment of industry producing extremely hazardous materials – essonite, mercury compound etc |  | Yes |
|  | Establishment of industry with production of blasting materials |  | Yes |
|  | Establishment of industry of chemical processing of bons with daily capacity (MT) |  | >50 |
|  | Establishment of saw mill with annual capacity (cubic ft) |  | >50,000 |
|  | Establishment of drug industry with daily capacity (MT) | <50 | >50 |
|  | Establishment of plastic industry with daily production capacity (MT) | >5 |  |
|  | Establishment of water processing industry with per second production capacity (liter) | >10 |  |

**The Interim Constitution of Nepal, 2007**

The Interim Constitution of Nepal, 2007 for the first time recognized the right to live in a clean environment to every individual as fundamental right. It states that it is the responsibility of the State to conserve and manage natural resources, implement scientific land reform programs and effective implementation of multilateral agreements to which Nepal is a party. It adopts policies of beneficial utilization of natural resources by: mobilizing local communities, maintaining clean environment, avoiding adverse effect on environment from physical development activities, protecting the environment and rare wildlife, and protecting forest, vegetation and biological diversity and their sustainable use and for equitable distribution of the benefit arising from these resources. It aims to increase agricultural productivity by encouraging farmers and transform and commercialize agriculture. It also proposes a policy of conserving yet modernizing existing traditional knowledge, skills and practices in the country.

## Other relevant legislation

Other relevant Acts include: Ancient Monuments Protection Act (1956); Civil Aviation Act (1958); Aquatic Animal Protection Act (1960); Plant Protection Act (1964); Tourism Act (1978); King Mahendra Nature Conservation Trust Act (1982); Soil and Watershed Conservation Act (1982); Nepal Electricity Authority Act (1984); Mines and Mineral Act (1985); Pashupati Area Development Trust Act (1987); Solid Waste Management and Resource Mobilization Act (1987); National Parks and Wildlife Conservation Act (1987); Town Development Act (1988); Kathmandu Valley Development Authority Act (1988); Nepal Water Supply Corporation Act (1989); Pesticides Act (1991); Village Development Committee Act (1991); District Development Committee Act (1991), Municipality Act (1991); Water Resources Act (1992); Forest Act (1992); Electricity Act (1992); Motor Vehicle and Transportation Management Act (1992); Labor Act (1992); Industrial Enterprises Act (1992); and Nepal Tourism Board Act (1996). Electronic Transaction Rules (2005), Information Technology (Procedures) Rules (2005) and Electronic Transaction Ordinance (2005) have also been formulated and enforced.

Nepal is also a signatory to many international agreements and conventions related to environmental conservation. These include Plant Protection Agreement for Asia and the Pacific Region (1956); Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES, 1973), Convention Concerning the Protection of World Cultural and Natural Heritage (World Heritage Convention) (1972); Convention on Wetland International Importance especially as Waterfowl Habitat (Ramsar Convention, 1973); International Tropical Timber Agreement (1983); Vienna Convention for the Protection of the Ozone Layer (1985); Basel Convention on the Control of Trans Boundary Movement of Hazardous Waste (Basel Convention, 1989); Convention on Biological Diversity (1992); UN Framework Convention on Climate Change (1992); UN Convention to Combat Desertification in those Counties Experiencing Serious Drought and/or Desertification Particularly in Africa (1994); Kyoto Protocol; Stockholm Convention on Persistent Organic Pollutants. As a signatory of international agreements, Nepal has to follow the environment conservation provisions made in these agreements.

# Environmental Standards, Directives, Guidelines and Framework

Standards, guidelines and framework related to environment and climate change risk have been listed in Table 4 and discussed below.

Table 4: List of environmental standards, directives, guidelines and framework

| **SN** | **National standards, guidelines and directives** | **Year** |
| --- | --- | --- |
| 1 | National Environmental Impact Assessment Guidelines | 1993 |
| 2 | Nepal Vehicle Mass Emission Standard | 1999 |
| 3 | Environmental Assessment in the Road Sector of Nepal | 2000 |
| 4 | Public Work Directives | 2002 |
| 5 | The Reference Manual for Environment and Social Aspects of Integrated Road | 2003 |
| 6 | Nepal National Building Code | 2003 |
| 7 | Generic Standard/Tolerance Limits for Different Industrial Effluents Discharged into Inland Surface Water | 2001/2003 |
| 8 | Generic Standards, Tolerance Limits for Wastewater Discharged into Inland Surface Water from Combined Waste Water Treatment Plant | 2003 |
| 9 | Tolerance Limits for Different Industrial Effluents Discharged into Inland Surface Water | 2001/2003 |
| 10 | National Ambient Air Quality Standards for Nepal | 2003 |
| 11 | Nepal’s Drinking Water Quality Standards | 2006 |
| 12 | Streamlining of Environmental Impact Assessment: Approval Processes for Hydropower Sector | 2006 |
| 13 | Environment Management Plan of Hydropower Projects | 2006 |
| 14 | Environment Monitoring of Hydropower Projects | 2006 |
| 15 | A Handbook on Licensing and Environmental Assessment Process for Hydropower Development in Nepal | 2006 |
| 16 | The Reference Manual for Bioengineering | 2007 |
| 17 | Nepal Water Quality Guidelines for Irrigation Water | 2008 |
| 18 | Nepal Water Quality Guidelines for Aquaculture | 2008 |
| 19 | Nepal Water Quality Guidelines for Livestock Watering | 2008 |
| 20 | Nepal Water Quality Guidelines for Recreation | 2008 |
| 21 | Nepal Water Quality Guidelines for Industries | 2008 |
| 22 | Nepal Water Quality Guidelines for the Protection of Aquatic Ecosystem | 2008 |
| 23 | National Indoor Air Quality Standards | 2009 |
| 24 | Environment and Social Management Framework | 2009 |
| 25 | The Roadside Geotechnical Problems: A Practical Guide to their Solution | 2010 |
| 26 | Directive for Urban Environment Management | 2010 |
| 27 | Framework and Screening Tools for Climate Resilience Periodic Plan | 2010 |
| 28 | Plastic Bag Regulating and Control Directives | 2012 |

**National Environmental Impact Assessment Guidelines, 1993**

The government has framed and published National Environmental Impact Assessment Guidelines in 1993 with the objectives of i) assisting in the assessment of the impacts likely to be caused on the environment by implementation of the project, ii) facilitating to optimize the benefits of development without degrading environmental quality, the natural resource base and the cultural heritage of the society, iii) helping to discover protective and preventive measures to remove adverse impacts likely to be caused on the environment by implementation of the project, iv) facilitating to integrate environmental considerations into project planning cycle, and v) providing information to decision-makers to determine whether or not the proposed project is to be implemented from an environmental perspective and what mode should be adopted to implement the proposed project.

The guidelines describe project screening criteria for IEE and EIA, scoping for environmental impact assessment including its methodology, reporting of environmental impact assessment, and identification of environmental impact and impact mitigation measures, reviewing of impact assessment report, impact monitoring, impact auditing and community participation. It incorporates 5 schedules pertaining to i) projects requiring initial environmental examination, ii) projects requiring environmental impact assessment, iii) environmental impact assessment based on project sites, iv) format of terms of reference, and v) format of environmental impact assessment report.

**Other Guidance and standards**

**The MoSTE** has formulated Ambient Air Quality Standard 2003, industrial affluent standards, Nepal Mass Vehicle Emission Standards (Green Sticker System), Generic Standard for Industrial Effluent – tolerance limit, Industrial effluent standard to be disposed in inland water (paper and pulp, wood, fermentation, dairy, sugar, cotton industry, soap, paint, galvanized and electroplating, leather, oil and soap industry), Plastic Bag Regulating and Control Directives, 2012 and Standard on emission from brick industry and height of chimney.

Some of initiatives taken in the field of air quality control are i) ban on registration of two stroke engines and diesel operated Tempo in Kathmandu and ban on import of reconditioned and used vehicles in Nepal, ii) provision of incentive to Safa Tempo (99% VAT subsidy), iii) introduction of unleaded petrol, iv) ban on import of hazardous scrap and recycled and used electronic equipment, v) ban on import and use of Ozone depleting substances, vi) ban on Moving Bulls and Trench Brick Kilns in Kathmandu (2004),vii) ban on Moving Bull Trench Brick Kilns in Nepal (2011), viii) revival of the AQMSs and monitoring of Air Quality of Kathmandu Valley, ix) compliance to ambient air quality standards, x) strict adherence to standard road monitoring program by vehicles/mobile sources, xi) capacity building in air quality monitoring and management and xii) extensive awareness in ambient air quality.

**MoSTE** has prepared environmental assessment guidelines for hydropower sector. Those are Streamlining of Environmental Impact Assessment: Approval Process, Environmental Management Plan of Hydropower Projects, Environmental Monitoring of Hydropower Projects and A Handbook on Licensing and Environmental Assessment Process for Hydropower Development in Nepal. Other line agencies have also published environmental assessment and management guidelines for their sector.

**The Geo-environment and Social Unit of the Department of Roads** has published series of manuals and guidelines for the assessment and management of environmental and socio-economic impacts in the road sectors. It has published the policy document entitled Environmental Assessment in the Road Sector of Nepal. Public work directives prepared in 2002 has emphasized the integration of technical, environmental and social aspects in road design and development and planning and implementation of Environmental Management Action Plans, Social Action Plans (SAP) and Resettlement Action Plans (RAP).

The Reference Manual for environment and social aspects of integrated road (2003) discusses the steps of the environmental and social assessment process, roles and responsibilities of stakeholder, impact mitigation action plans and public participation in project cycle.

The Reference Manual for bioengineering first published in 1990 and reprinted in 2002 and 2007 introduces various aspects of bioengineering and its importance, selection of species, maintenance of vegetation and standard specifications for bioengineering works with details of four bio-engineering case studies. The norms and specification for bio-engineering has also been prepared.

The Roadside Geotechnical Problems: A Practical Guide to their Solution published in 2009 (reprint 2010) discusses various aspects of slope stability mechanism and destabilization of slope. The unit has also published a brochure on Environmental and Social Management Framework in 2012. It discusses the methodological framework for environment and social assessment at different project stages with a brief introduction to the relevant laws, policies, regulations and guidelines; potential environmental and social impacts associated with road development, public consultation, mitigation measures, resettlement policy, monitoring and evaluation, and community vulnerability.

**The Department of Urban Development and Building Construction** has published a directive for urban environment management (2067). The major objectives of this directive are to i) guide for the reduction and control of environmental pollution and develop healthy urban environment, ii) develop projects to maintain balance between urban development, housing and other construction and environment, iii) implement guidelines and standards for the maintenance of balance between natural and man-made environment within urban areas, iv) contribute in the improvement of urban environment as per Environment Protection Act and Regulations and National Urban Policy 2064, and v) encourage for the adoption of environmental standards as fixed by the government of Nepal. It has made several provisions for hazardous waste management; reduction in air pollution and consumption of energy; reduction in visual pollution; quality control for drinking water and reduction in water pollution; greenery, open space and protection of agricultural land; management of urbanization, building design and energy technology; institutional arrangement; public participation; Public Private Partnership. It contains national standards as annexes.

**Project Co-ordination Unit (PCU), Rural Access Improvement and Decentralization Project (RAIDP) of DoLIDAR** has published Environment and Social Management Framework (ESMF) in 2009 in order to provide guidelines and procedures to deal with environmental and social impacts associated with the implementation of Rural Access Improvement and Decentralization Project. It briefly discusses relevant policies, acts, regulations; likely environmental and social impacts from different activities in the Hill and Terai regions of the country; environmental screening; environment management plan; social mitigation plan, contractors compliance on environmental and social safeguard measures; planning and implementation mechanism, environmental impact mitigation mechanism, IEE and EIA, vulnerable community development program; role and responsibilities of various organizations; supervision, monitoring and evaluation; and environment and social auditing. It also presents sample of site specific environmental management plan.

Though specific manuals and guidelines for environmental impacts assessment for sectors like water supply and sewerage and irrigation have not yet been prepared, they follow EPA and EPR process while implementing development projects. The issues of climate change, its mitigation and adaptation have not yet been discussed in any of the directives, manuals and guidelines so far published for IEE and EIA studies.

**National Planning Commission** with assistance from ADB and UNDP has recently prepared a climate change resilience framework to guide the development agencies in formulating climate resilient plan/programme at national, regional and local level. It has proposed climate risk screening processes. The initial process involves identification of climate sensitive components with appropriate indicators. A climate change impact on water is considered as first entry point for risk analysis. Its results should be linked to other sectors including infrastructure development. A sensitivity matrix has been framed to identify the climate sensitivity of a plan/program. Once the sensitivity matrix is applied, a scenario can be built to determine if the level of stress can be coped. If the level of stress cannot be coped, the intervention options need to be developed with cost benefit analysis of intervention options. It has also been recommended to incorporate screening tools for climate risk within the existing EIA screening framework.

# Organization and Staffing

## Organizational Structure

Environmental issues are cross sectoral. So, many institutions are directly or indirectly involved in environmental management. Those can be classified into advisory bodies, government ministries, government departments and centres, research institutions and institutions in private and non-governmental sectors.

Figure 1 shows structure of MoSTE and its related institutions. Parliament (currently not functioning), Council of Minister and Supreme Court are apex bodies. There is Parliamentary Committee on Natural Resources and Environmental Protection (currently not functioning). National Development Council, Environmental Protection Council, National Commission on Sustainable Development, National Climate Change Council and National Planning Commission are other advisory bodies responsible to guide and coordinate policies and programs related to environment at national level. Other relevant institutions at local level are DDC, VDC and Municipality.

Figure 1: Institutional Framework Related to MoSTE

Parliament

National Development Council

Council of Minister

Supreme Court

Parliamentary Committee on Natural Resources and Environmental Protection

Environmental Protection Council

National Commission on Sustainable Development

**Ministry of Science, Technology and Environment (MoSTE)**

Regional Energy and Environment Unit

District/Municipal Environment Unit

Village Environment Unit

Civil Society Organizations

Non-governmental organizations

Media

Academic Institutions

Donors

International non-governmental organizations

Climate Change Council

National Planning Commission

Other Sectoral Ministries and Departments

Department of Environment

Department of Information Technology

Department of Hydrology and Meteorology

Alternative Energy Promotion Centre

National Information Technology Centre

Nepal Academy of Science and Technology

PPCR Coordination Committee - Minister

TA Steering Committee -Secretary

TA Working Committee -NPD

Multi-stakeholder Climate Change Coordination Committee - Secretary

National Steering Committee of Designated National Authority

Climate Change Network

Nepal Climate Change and Development Portal

The current organizational structure of the MoSTE is given in Figure 2. The MoSTE has four divisions – i) Planning, Evaluation and Administration; ii) Climate Change Management, iii) Environment, and iv)Science and Technology. There are four sections under environment division. Those are i) Environment standard, ii) Environment assessment, iii) Environment promotion and fund mobilization and iv) Environment pollution control and monitoring. The Environment promotion and fund mobilization section and Environment pollution control and monitoring section have been proposed to transfer to the newly approved Department of Environment.

There are two sections that have different responsibilities for ESIAs, i) the Environment Assessment Section within the Ministry of Science, Technology and Environment and ii) the Environment Impact Assessment and Monitoring Section within the Department of Environment. The Environment Assessment Section in the Ministry is responsible for reviewing TOR and EIA reports and completing EIA approval processes whereas the Environment Impact Assessment and Monitoring Section within the Department of Environment is responsible for monitoring and auditing of environmental impacts and the implementation of Environment Management Plan. The department is invited in the review meetings of EIA report organized by the Ministry, but is not yet involved in the processes of reviewing TOR.

The MoSTE does not have local level institutions dealing with the issues of climate change and environment. Although Energy and Environment Units exist at region, district and VDC level, they focus their activities on disseminating alternative energy technologies rather than assessing and monitoring environmental impacts.

There is absolute lack of research institutions and advisory bodies at national level. It is in this context that institutions such as National Environmental Monitoring Network, Nepal Academy of Environmental Sciences, EIA Appraisal Centre at central level and Environmental Divisions at region, district and municipality level have been recommended by recently completed study project i.e *Nepal: Strengthening Capacity for Managing Climate Change and Environment, TA 7173, NEP, 2012*. It is also recommended to revitalize the Environmental Protection Council. The same project has also recommended an institutional framework for climate change consisting climate change section, CDM section, climate change council secretariat, PPCR management unit and other TA units by increasing level of staffing in climate change management division by 20.

The organizational structure of the recently established Department of Environment is given in Figure 3. The department of Environment has two divisions – i) Administration and promotion and ii) Impact Assessment and Monitoring. There will be four sections within Administration and promotion division – i) Administration and planning, ii) Financial administration, iii) Environment impact adaptation, and iv) Environment promotion. Similarly, there will be three sections within Impact assessment and monitoring division. Those are i) Environment pollution control and monitoring, ii) Environment impact assessment and iii) Monitoring and laboratory.

Figure 2:Organizational Structure of the Ministry of Science, Technology and Environment

Minister

Secretary (Gaz. Special Class

Personal Secretariat (Undersecretary - 1, Nayabsuba- 1

Personal Secretariat (Section Officer - 1, Nayabsuba- 1

**Planning, Evaluation and Administration Division**

Joint Secretary (Adm.)- 1; PA -1

**Climate Change Management Division**

Joint Secretary (Forestry)- 1; PA -1

**Environment Division**

Joint Secretary (Adm.)- 1; PA -1

**Science and Technology Promotion Division**

Joint Secretary (Eng.)- 1; PA -1

***Administration and Manpower Dev. Section***

(Under Secret. Gaz. II, Adm. 1; Section Officer, Gaz.III, Adm. 2; Documentation Officer, Gaz. III, Edu. 1; Nayab Sub.Non-Gaz.I, 1; Computer Oper. Non-Gaz. Misc. 3; Typist 1; ha sa cha 5; Office Assist. 7)

***Planning, Monitoring and Budget Coordination Section***

(Under Secret. Gaz. II, Adm. 1; Section Officer, Gaz. III, Adm.2; Statistician, Gaz. III, Stat. 1)

***Law and Decision Implementation Section***

(Under Secret., Gaz. II,Law 1; Law Officer, Gaz. III, Law, 1)

***Financial Administration Section***

(Under Secret.Gaz. II, Fin.; Account Officer, Gaz. III, Fin.1; Accountant, Non-Gaz. I, Fin. 1

***Climate Change Section***

(Soil Conservation Officer, Gaz. II, forestry 1; Meteorologist, Gaz. III, Eng.Met.1; Section Officer, Gaz.III, Adm. 1; Nayab Sub. Non-Gaz. I, 1)

***Sustainable Development and Adaptation Section***

(Under Secret. Gaz. II, Adm. 1; Section Officer, Gaz.III, Adm1; Ecologist, Gaz. III, Forest-Bot. 1; Nayab Sub. Non-Gaz. I, 1)

***Clean Development Mechanism Section***

(Senior Div. Engeer. Gaz. II, Tech. Eng. 1; Section Officer, Gaz.III, Adm1; Agri-economist, Gaz. III, Agri-eco. 1; Nayab Sub.Non-Gaz. I, 1)

***Environment Standard Section***

(Senior Div. Engeer. Gaz. II, Eng.Mech. 1; Engineer, Gaz.III, Eng. Mech 1; Chemist, Gaz. III, Eng.Mech. 1; Nayab Sub.Non-Gaz. I, 1)

***Environment Assessment Section***

(Scientific Officer, Gaz. II, Forest-Bot. 1 ; Engineer, Gaz.III, Eng. Civil,irri., 1; Engineer, Gaz. III, Eng.Sanit. 1; Section Officer-socio economist, Gaz. III, Adm. 1; Ecologist, Gaz. III, Forest-Bot. 1; Nayab Sub. Non-Gaz. I, 1)

***Environmental Promotion and Fund Mobilization Section***

(Soil Conservation Officer, Gaz. II, Forest-Soil. 1 ; Section Officer, Gaz. III, Adm. 1; Agri-economist, Gaz. III, Agri-Eco 1.

***Environmental Pollution Control and Monitoring Section***

(Senior Div. Chemist. Gaz. II, Eng.Chem. 1; Chemist, Gaz.III, Eng. Chem 1; Engineer, Gaz. III, Eng.Mech. 1

***Scientific Research and Development Section***

(Senior Div. Engeer. Gaz. II, Eng.Build.Arch. 1; Assist.Forest Officer, Gaz.III Foresttry 1; Engineering Geologist, Gaz. III, Eng.Geology. 1; Kharidar, Non-Gaz. II, 1)

***Technology Promotion Section***

(Senior Div. Chemist. Gaz. II, Eng.Chem. 1; Crop Protection Officer, Gaz.III, Agri-Plant Protect. 1; Engineer, Gaz. III, Eng.Mech. 1; Kharidar, Non-Gaz. II, 1)

***Electricity Governance Policy and Coordination Section***

(Under Secret.; Gaz. II, Adm. 1; Computer Officer, Gaz.III, Tech-Misc. 1; Section Officer, Gaz.III, Adm. 1; Kharidar, Non-Gaz. II, 1)

On contract: Computer operator 3, Driver 3, and Office Assistant 3

Figure 3: Organizational Structure of the Department of Environment

Director General – Gaz. I (tech)(Agriculture Service) 1

Personal Secretary (Non-Gaz. I, Administration 1

Deputy Director General (Administration and Promotion)- Gaz. I,

Administration – 1

Deputy Director General (Impact Assessment and Monitoring)- Gaz. I,

Engineering Service - 1

Personal Secretary Non-Gaz. I , Administration - 1

Personal Secretary Non-Gaz. I, Administration - 1

***Administration and Planning Section*** Director (Gaz. II, Adm.) 1

Section Officer (Gaz. III, Adm.) 2

Lawyer (Gaz. III, Law and Justice) 1

Nayabsubba (Non-Gaz. I, Adm.) 1

Computer Oper. (Non-Gaz., Tech. Misc 1

***Financial Administration Section***

Accountant (Gaz. III, Fin.) 1

Sub-Accountant (Non.Gaz. II, Fin.) 2

***Environment Impact Adaptation Section***

Agri-economist (Gaz. II, Agri.) 1

Mechanical Engineer (Gaz. III, Eng.) 2

Asst. Crop Protection Officer (Gaz. III,Agri)1

Environment Supervisor (Gaz. III Misc) 2

***Environment Promotion Section***

Director (Gaz. II, Adm.) 1

Section Officer (Gaz. III, Adm.) 1

Environment Supervisor (Gaz. III Misc) 2

Asst. Librarian (Non-Gaz I, Ed.Lib.Sc) 1

***Environment Pollution control and Monitoring Section***

Senior Divisional Chemist (Gaz. II, Eng. Chem.) 1

Chemist (Gaz. III, Eng. Chem) 1

Mechanical Engineer (Gaz. III, Eng.) 1

Environment Supervisor (Gaz.III, Misc) 6

Nayabsubba (Non-Gaz. I, Adm.) 1

Computer Oper. (Non-Gaz., Tech. Misc 1

***Environment Impact Assessment and Monitoring Section***

Scientific Officer (Gaz. II, Forest, Bot.) 1

Engineer (Gaz. III Eng. Hydro) 1

Engineer (Gaz. III, Eng. Build. Arch) 1

Asst. Agri-Economist (Gaz.III, Agri-Eco) 1

Environment Supervisor (Gaz.III, Misc) 6

Geologist (Gaz. III, Eng. Geology) 1

Nayabsubba (Non-Gaz. I, Adm.) 1

Computer Oper. (Non-Gaz., Tech. Misc 1

***Laboratory Section***

Senior Divisional Chemist (Gaz. II, Eng.Chem) 1

Chemist (Gaz. III Eng. Chem.) 1

Laboratory Assist. (Non-Gaz.I, Eng.Chem.)2

## Staffing

### Ministry of Science, Technology and Environment

There are a total of 50 officer level posts approved by the government in the Ministry of Science, Technology and Environment. However, only the 36 posts are fulfilled and remaining 14 posts are currently vacant (Table 5). It has been approved to shift Environment Promotion and Fund Mobilization section and Environment Pollution Control and Monitoring to the recently approved Department of Environment. Because of inadequate human resources in Environment Assessment Section, monitoring and auditing activities have not yet been started. Realizing these constraints, provision of environmental supervisors in the Department of Environment has been made. Still the size of approved position is inadequate. It should be increased.

Table 5: Officer level staffs allocated by the government and level current staffing in the MoSTE

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Divisions** | **Sections** | **Officer Level Staff**  **Allocation** | **Current**  **Staffing**  **Level** | **Remarks** |
| Planning, Evaluation and Administration | Division head (joint secretary) | 1 | 1 |  |
| Administration and Manpower Development | 4 | 3 | Librarian |
| Planning Monitoring and Budget Coordination | 4 | 3 | Section officer |
| Law and Decision Implementation | 2 | 2 |  |
| Financial Administration | 2 | 2 |  |
| Climate Change Management | Division head (joint secretary) | 1 | 1 |  |
| Climate Change | 3 | 3 |  |
| Sustainable Development and Adaptation | 3 | 1 | Ecologist, Section Officer |
| Clean Development Mechanism | 3 | 2 | Section Officer |
| Environment | Division head (joint secretary) | 1 | 1 |  |
| Environment Standard | 3 | 2 | Engineer |
| Environment Assessment | 5 | 4 | Section Officer |
| Environment Promotion and Fund Mobilization | 3 | 3 |  |
| Environment Pollution Control and Monitoring | 3 | 2 | Mechanical Engineer |
| Science and Technology | Division head (joint secretary) | 1 | 1 |  |
| Scientific Research and Development | 3 | 1 | Forestry, Geologist |
| Technology Promotion | 3 | 2 | Mechanical Engineer |
| E-Governance and Policy Coordination | 3 | 0 | all |
| Secretariat of the Minister and secretary |  | 2 | 2 |  |
| Total |  | 50 | 36 |  |

### Department of Environment

The recently approved Department of Environment has provision for a total of 39 officer level staffs (Table 6). Among them 16 are environmental supervisors. The Department will have experts in different fields such as agriculture economics and marketing, crop protection, engineering (chemistry, mechanical, civil hydropower, civil building and architecture) geology, botany and environmental science.

Table 6: Officer level staffs allocated by the government in the Department of Environment

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **SN** | **Staffs** | **Approved by the government** | **Vacancy fulfilled** | **Vacant posts** |
| 1 | Director General | 1 | 1 | 0 |
| 2 | Deputy DG | 2 | 1 | 1 |
| 3 | Director (Adm.-2; Technical\_4) | 6 | 6 | 0 |
| 4 | Section Officer | 3 | 2 | 1 |
| 5 | Law Officer | 1 | 0 | 1 |
| 6 | Account Officer | 1 | 1 | 0 |
| 7 | Gazetted III Technical | 9 | 4 | 5 |
| 8 | Environmental Inspector | 16 | 0 | 16 |
| 9 | Nayabsubba | 7 | 2 | 5 |
| 10 | Lab Technicians | 2 | 0 | 2 |
| 11 | Sub-accountant | 1 | 0 | 1 |
| 12 | Documentation Assistant | 1 | 0 | 1 |
| 13 | Computer Operator | 4 | 2 | 2 |
| Total | | 54 | 19 | 35 |

*Source: Department of Environment, September 21, 2013*

# Operational Programs Activities and Projects

Table 7 shows the recently completed and ongoing projects within the Ministry of Science, Technology and Environment. Recently completed activities under different projects are assessment of national capacity needs for implementation of Multilateral International Agreements such as CBD, CCD and UNFCC, preparation of National Adaptation Plan of Action (NAPA), Strengthening Capacity for Managing Climate Change and Environment, identification of pilot programs for climate resilience, development of methodology and tools for vulnerability and risk assessment and adaptation planning at community level and digitization of historical meteorological data, statistical climate downscaling and web portal development and dissemination. Likewise, ongoing activities under different projects are the preparation of Second National Communication Report, report on technology needs, preparation and implementation of Local Adaptation Plan of Actions (LAPA), mainstreaming climate change risk into development and building resilience to climate change. Community-based Glacial Lake Outburst Flood Risk Reduction with objectives of reducing human and material losses from GLOF in Solukhumbu district and catastrophic flooding events in the Terai and Churiya range is under negotiation.

Table 7: Completed and ongoing projects within MoSTE

| **SN** | **Project** | **Duration** | **Activities** |
| --- | --- | --- | --- |
| 1 | National Capacity Needs Self-Assessment for Global Environment Management Project | 2007-2008 | Preparation and publication of stocktaking, thematic assessment, cross cutting analysis and capacity action plan in three thematic areas - Biodiversity (CBD), Land Degradation (CCD) and Climate Change (UNFCC) |
| 2 | Kathmandu to Copenhagen Regional Climate Conference | 2009 | Raising awareness and capacity building |
| 3 | National Adaptation Plan of Action (NAPA) | 2009-2010 | Vulnerability mapping, identification and prioritization of urgent and immediate, short term and long term adaptation actions for climate change in Nepal and development of the climate change and development portal |
| 4 | Strengthening National Capacity on Climate Change: Negotiations and COP 15 Preparation | 2009-2010 | Preparation of status paper and raising awareness on climate change |
| 5 | Support to Capacity Building | 2009-2010 | Raising awareness and capacity building of the government and other key stakeholders |
| 6 | Strengthening Capacity for Managing Climate Change and Environment | 2009-2011 | Development of framework for institutional development, financial resource mobilization and public awareness communication and training on climate change and environment |
| 7 | Pilot Program for Climate Resilience (PPCR) | 2009-2012 | Integrate climate resilience into mainstream development planning |
| 8 | Community-based Vulnerability Assessment, Risk Mapping and Adaptation Planning | 2010-2011 | Development of methodology and tools for vulnerability and risk assessment and adaptation planning |
| 9 | Climate Data Digitization and Downscaling of Climate Change Projections | 2010-2011 | Digitization of historical meteorological data, statistical climate downscaling and web portal development and dissemination |
| 10 | Second National Communication Project | 2011-2013 | Preparation of reports on national circumstances, GHG inventory, vulnerability assessment and adaptation planning, climate change mitigation and preparation of final report Second National Communication, Nepal |
| 11 | Technology Needs Assessment | 2011-2013 | Identification and assessment of adaptation and mitigation technologies, analysis of barriers and preparation of technology action plan |
| 12 | National Climate Change Support Program (NCCSP) | 2011-2015 | Preparation and implementation of Local Adaptation Plan of Action (LAPA) and capacity building plan for 69 VDCs and one municipality |
| 13 | Community-based Glacial Lake Outburst Flood Risk Reduction | 2013-2017 | Aims to reduce human and material losses from GLOF in Solukhumbu district and catastrophic flooding events in the Terai and Churiya range |
| 14 | Developing Nepal's Strategic Programs for Climate Resilience (SPCR): Prioritization Planning Processes | 2010 | Assessment of climate change risk and adaptive capacity, identification of areas of intervention or PPCR projects |
| 15 | Mainstreaming Climate Change Risk Management in Development | 2012-2016 | Integrate climate change risk into implementation of development projects, development and implement knowledge management tools and development of a platform for shared learning and harmonized reporting |
| 16 | Building Resilience to Climate Related Hazards: Component 2 of SPCR (MoA/MoSTE/DHM) | 2012- | Addresses the priority risk of floods and droughts that  take human lives and undermine progress on economic growth and poverty alleviation |

Achievement made in the field of environmental assessment is the adoption of EIA as a national instrument for proposed development projects that are likely to have a significant adverse impact on the environment. Until now 144 EIA Reports have been approved and 96 reports are under reviewing process. Out of a total of 144 EIA report so far approved, 41 for hydropower development, 22 for building construction, 13 for road, 7 for irrigation, 4 for water supply and one for the extraction of sand and gravel.Environmental awareness activities are carried out through the use of mass media. Various environmental fair/events are organized regularly. Environmental protection works are carried out by involving NGOs with support in the form of financial grants. Reports and bulletins with issues on environment are published regularly.

MoSTE as designated national authority facilitates activities related to clean development mechanism. It supports to technology transformation in reducing GHF gas emission. It is involved to promote carbon trade working in close collaboration with all related national and international stakeholders. Until now 3 PIN and 17 PDD have been approved and forwarded to UNFCC for Certified Emission Reduction (CER) registration. A total of 5 projects have already been registered in UNFCC Secretariat and they are under implementation.

# Tools and Procedures

It is mandatory to carry out Environmental Assessment of all development projects. Depending upon the nature of project, Initial Environmental Examination (IEE) or Environmental Impact Assessment (EIA) is required before finalizing the project design and its implementation. The primary objective of the Environmental Assessment (EA) is to inform the decision-maker and stakeholder about the environmental implications of the implementation of the proposal. An EA acts as a tool for deriving conclusion on whether or not the proposed development activity should be proceed.

The *Environmental Protection Rules* (EPR) (1997) and its amendment up to 2012 of the Government of Nepal have made provisions for screening of projects requiring IEE or EIA. The processes are summarized in Figure 4.

There are two EA process lines for IEEs and for EIAs. The proponent of the project carries out an initial screening of the project using the criteria set out in Table 3, depending upon the size and type of the project. This determines whether the project follows the IEE or EIA pathway.The proponent should prepare the Terms of Reference (TOR) for the IEE or EIA and submit to the concerned Ministry through the appropriate Department. If an IEE is required the responsibility for approving the TOR and the subsequent IEE report lies with the concerned Ministry.

The proponent or their consultants will conduct IEE study as soon as it receives the approval letter for TOR from the concerned ministry. After preparation of IEE document, it should be submitted to the concerned ministry through the relevant department for final approval.

If the screening identifies that an EIA is required, the concerned Ministry passes the application to the Ministry of Science, Technology and Environment. MoSTE is responsible to make assessment and grant approval of TOR and EIA report for all those projects which require EIA as per the Environmental Protection Regulation, 1997, forwarding its approval letter through the concerned ministry.

In EPR 1997, provisions are made to involve the local people as well as stakeholders in the EIA process. The important components of EIA study process, among others, are scoping before writing EIA report; public hearing, EMP and Environment Monitoring. The EIA process starts with the publication of public notice for scoping after getting permission of survey. 15 days notice should be published in the national daily newspaper to inform the affected people of the proposed project areas and stakeholders to solicit their concerns and suggestions.

The scoping document, TOR, and EIA report should be approved by the Ministry of Science, Technology and Environment (MoSTE). The approval process in MoSTE begins as soon as it receives scoping Documents and TOR before preparations of EIA Report and the EIA report from the concerned ministry along with comments and suggestions. The MoSTE shall make the final EIA report public by publishing a 30-days public notice in the national daily newspaper to solicit comments and suggestions. MoSTE shall grant the approval for the implementation of the proposal by approving the EIA report within 60 or 90 days upon its receipt.

Scoping is a basis for the preparation of TOR. It helps to derive the scope of work for IEE or EIA (Figure 4). However, it is not legally required for an IEE. During EIA approval process, it is required for the preparation and approval of Scoping Document. Available secondary information is used to prepare the Scoping Document. A reconnaissance field visit should also be carried out to generate project-specific issues and collect opinions and concerns of the affected communities in the process for determining the scope for EIA. The scoping generally carried out for the involvement of relevant institutions, interested and affected stakeholders in the EIA processes and collection of their concerns and suggestions; identification and selection of alternatives; and identification of significant issues to be examined during the EIA.

One of the major tasks of Scoping is to identify issues, list issues raised by affected parties and stakeholders and prioritize them for EIA study. Major areas of concerns for environmental impact assessment are impacts on physical, chemical, biological and socio-cultural environments including livelihood and quality of life.

During the scoping stage, project alternatives might be identified and examined. It starts with the analysis of the environmental benefits and adverse impacts with and without project. The methods of scoping include public notification, public meetings, workshops and interview. The media include national newspapers, telephone, email, face-to-face interview and discussion. Emphasis should be given for using a combination of methods in the Scoping process and the proponent should begin from organizing public meeting in the project site.

Before carrying out scoping, a document should be prepared providing back ground information on the nature of the proposal including the purpose and need for the project, proposed actions, location, timing, methods of operation and so on) as well as a brief description of the affected environment. This document should be disseminated in order to assist interested and affected parties to provide their comments and suggestions during Scoping processes. Background information should be clear and user-friendly. It should be made available to public and adequate time should be given to read and provide suggestions. It should also be prepared in simple Nepali language or it should be target-group based. The EPR, 1997 oblige the proponent to publish a 15 days public notice in the national daily newspaper to inform the stakeholders about the proposal and seeking written suggestions from the concerned parties or individuals.

The Scoping Document should include:

* Project highlights and scoping methodologies including methods for issues prioritization and consultation with interested and affected communities and stakeholders;
* Potential alternatives to be examined during the EIA study;
* Specific guidelines for undertaking and preparing the EIA report; and
* Priority issues to be addressed during the EIA

The main text of Scoping report should be concise and easily understandable. As per Rule 4 of EPR, 1997, the proponent prepares and submits a Scoping Document for approval. This report can be translated into Nepali language and used as draft scoping document and finalized after receiving concerns and suggestions from all stakeholders during Scoping and submit to the concerned body. The concerned line ministry approves the TOR for IEE study and TOR and scoping document are approved by MoSTE. The EIA report is prepared based on the TOR. It consists of information on baseline environmental condition, impact identification and prediction, alternatives, environmental protection measures, environmental monitoring and environmental auditing. MoSTE is responsible to undertake an environmental audit of a project subjected to EIA two years after the commencement of service relating to the implementation of the proposal. MoSTE is also responsible to maintain the updated records thereof.

Figure 4: Processes of Environmental Impact Assessment in Nepal

Preparation of TOR

Designated Project (Schedule 1 and 2 of EPR, 1997 and its amendments)

Project requiring IEE (Schedule 1)

Project requiring EIA (Schedule 2)

Preparation of IEE Report (proponent)

Submission of IEE Report

Approval by the concerned ministry (within 30 days of submission)

Monitoring by the concerned ministry

Preparation of Scoping and TOR (submission for approval by proponent)

Approval of Scoping and TOR by the MOSTE

Preparation of EIA Commissioned by proponent

Disclosure of draft EIA report to public for review (This step is not normally followed)

Submission of EIA report through concerned ministry to the MOSTE for approval

Exhibition of EIA report for public review for 30 days

EIA report review and approval

Decision making (MOSTE)

Approved

**EIA post activities**

Monitoring and management

EIA Audit (MOSTE)

Not approved

Project Redesign

Resubmit

# Implementation of the Environmental Assessment process

As per Environmental Protection Act 1995, the Ministry of Science, Technology and Environment (MoSTE) is responsible to approve the TOR for EIA and EIA report and the concerned line Ministries are responsible to approve TOR for IEE and EIA report. The concerned line Ministries within the scope of this project are Ministry of Federal Affairs and Local Development (MoFALD), Ministry of Urban Development (MoUD), Ministry of Irrigation (MoI), and Ministry of Physical Infrastructure and Transport (MoPIT). The concerned government departments within these Ministries are Department of Local Infrastructure Development and Agricultural Road (DOLIDAR) under MoFALD, Department of Water Supply and Sewerage (DWSS) and Department of Urban Development and Building Construction (DUDBC) under MoUD; Department of Irrigation (DoI) and Department of Water Induced Disaster Prevention under MoI and the Department of Road (DoR) under MoPIT).

The objective of this section is to review the EIA assessment and implementation process and identify the gaps and constraints in those processes in identified sectors such as irrigation, roads and bridges, water supply and sewerage, water resource engineering, urban planning, sand mining and GLOFs. This review is based on the consultative meetings with the concerned personnel in concerned government ministries and department (Annex 1). A structured checklist was prepared to collect relevant information and concerned personnel were requested to fill the checklist. Attempt was also made to review the IEE evaluation reports prepared by independent researcher from academia institute. In addition field visit were carried out in selected sector in order to evaluate the IEE report and the implementation of Environment Management Plan.

## Ministry of Science, Technology and Environment (MoSTE)

MoSTE is responsible for all the EIA processes in the country and particularly for EIA of those projects in which are likely to have environmental impacts in higher magnitude, higher extent and long term. The criteria for screening development project requiring EIA and IEE by sectors are given in Table 3. As per environmental protection act and regulation, MoSTE is responsible for approving TOR and EIA reports. According to the information obtained on EIA, a total of 175 EIA reports have been approved by MoSTE. Table 8 shows the number of EIA reports approved by MoSTE by sectors.

Table 8: Number of EIA reports approved by sectors

|  |  |  |  |
| --- | --- | --- | --- |
| **SN** | **Sectors/Types** | **Number of Projects** | **%** |
| 1 | Hydropower Generation | 62 | 35.4 |
| 2 | Transmission Line | 15 | 8.6 |
| 3 | Road Construction | 15 | 8.6 |
| 4 | Industrial Establishment | 17 | 9.7 |
| 5 | Hospital Construction | 12 | 6.9 |
| 6 | Drinking Water | 5 | 2.9 |
| 7 | Irrigation | 6 | 3.4 |
| 8 | Non-Timber Forest Product Utilization | 14 | 8.0 |
| 9 | Tourism Development | 7 | 4.0 |
| 10 | Waste Management | 6 | 3.4 |
| 11 | Appartment Construction | 15 | 8.6 |
| 12 | Miscellanous | 1 | 0.6 |
|  | Total | 175 | 100.0 |
|  | *Source: EIA Section, MOSTE* |  |  |

## Ministry of Federal Affairs and Local Development (MoFALD)

Ministry of Local Development is one of the ministries of the government with widespread network up to grass-root level (VDCs and Municipalities). As per Local Self Governance Act, 1999, this ministry has been placed at the apex of three tier structural framework and accredited with the role of coordination, cooperation, facilitation and monitoring and evaluation of activities undertaken by local bodies (75 District Development Committees, 58 Municipalities and 3915 Village Development Committees).

Being the focal organization for local development, it has to coordinate, cooperate, facilitate and synergize the initiatives taken by different development partners. Taking the very fact that until and unless the pace of local development is accelerated, overall development of the nation is impossible, the ministry has adopted participatory development approach and promoted social inclusion, capacity building of indigenous, dalit, marginalized and oppressed community at local level for ensuring sustainable, balanced  and broad-based development based on equity and social justice. MOFALD has made provision of collecting and prioritizing climate change data and programs respectively while preparing annual and periodical plan by local bodies. In addition, climate change and disaster criteria have been included in MCPM Guidelines and Resource Mobilisaiton Guidelines prepared by the Ministry. The Ministry has prepared Social and Environment Safeguard Framework and Environment Friendly Local Governance Framework, 2013.

In this Ministry, the Environment Management Section is Municipal Management Division which is responsible to deal with the issues of environment management of those projects which are directly implemented by local bodies – DDCs and the Department of Local Infrastructure Development and Agricultural Road. The ministry recommends TOR for EIA and its report to MoSTE for its approval and approves TOR for IEE and its report.

As per the database on IEE provided by the Ministry, a total of 398 IEE TOR and reports have been approved by the Ministry (Table 9) Among them 175 projects are for the extraction of sand and gravel from rivers, 168 are local roads, 38 are bridges and 13 are landfills. List of projects with approved IEE is given in Annex 2.

Table 9: Types and number of projects with approved IEE from the MoFALD

|  |  |
| --- | --- |
| **Types of project** | **Number** |
| Bridge | 38 |
| Bus Terminal | 1 |
| Haat | 1 |
| Landfill | 13 |
| Refuse drive fuel | 1 |
| Road | 168 |
| Sand and gravel | 175 |
| Slaughter House | 1 |
| **Total** | **398** |

The major problems in EIA/IEE processes as reported during the discussion with key informants are that:

* There is no clear cut time limit of approved IEE for the implementation and operation of approved projects.
* Monitoring capacity of the environment management section is rather poor and the IEE proponent feels that it is just to meet the legal requirement of the government.
* There is no strong feeling among the proponent that IEE and implementation of EMP is necessary to manage environmental risk to and from the project.
* Climate change issues are not directly addressed in EIA and IEE process. Existing EPA and EPR needs to be amended according to present need.
* There is no adequate expertise in dealing with environmental impact assessment, staffs are very few keeping in view the number of projects and resources are insufficient.
* Environment Impact Assessment has not received high priority within the ministry, local bodies and department.

An IEE Review Committee as per the decision made at Secretary level has been formed to evaluate IEE report under the Chairmanship of the Chief of Environment Management Section (Under Secretary). Section Officer of Environment Management Section is the Member Secretary of the Committee. The members in the committee are the representatives from the Department of Mines and Geology, the Department of Road, the Department of Local Infrastructure Development and Agriculture Road and the Ministry of Science, Technology and Environment. In addition to this representatives from Revenue Section and Chief of the Local Governance and Community Development Program are invited as per the need.

The ministry has initiated third party monitoring from independent academicians working in Kathmandu University and Tribhuvan University.

**Evaluation of IEEs of Sand extraction**

Evaluation report prepared by the Central Department of Environmental Science, Tribhuvan University based on the assessment of 7 rivers used for the extraction of sand mining shows that IEE report lacks necessary baseline information particularly on land use and land cover. From compliance monitoring it was found that:

* Amount of collected materials and areas of excavations are not complied as a whole in the project area.
* Excavation depth is partially complied with IEE report in almost all the sites except variation in some sites.
* In some rivers, the collection/extraction is done within 500 m of the bridge axis which is against the IEE report that has threatened the bridge.
* In addition, there is neither daily nor annual record of the amount of river deposits collected and transported from each river.

The common impact of extraction/collection of sand, gravel and boulders are alteration of river hydrology and morphology, changed in river course, modification of erosional and depositional pattern of the river. Disturbance on aquatic habitat was seen in the some perennial river. It is recommended that for the sustainable extraction of these resources DDC should increase awareness on the sustainable extraction/collection of river deposits and put hoarding boards about IEE report recommendations for extraction/collection of river deposits at all proposed rivers, Also the extraction from the bank, near bridge (less than 500 m) of river should be checked.

## Department of Local Infrastructure Development and Agricultural Road (DOLIDAR)

The Department of Local Infrastructure Development and Agricultural Road is responsible to undertake infrastructure development programs in accordance with decentralization policies for attaining the goals set forth by the GON’s National Strategy for Rural Infrastructure Development by making the local authorities technically capable and competent ensuring their accountable participation.

The Department has Monitoring Environment and Technology Development Section under Planning, Monitoring and Foreign Aid Coordination Division of the Department. However, the environment section is not yet involved in assessing EIA/IEE TOR and the report. There are different programs and projects within this department. Those programs and projects are responsible for screening the activities whether requiring EIA/IEE. Since, many of the development projects and programs of the Department are implemented in close association with District Development Committees (DDCs) the concerned DDC is responsible for screening the program and developing TOR for EIA/IEE. Many of the projects and programs implemented by this department require only IEE as per Environmental Protection Act and Environmental Protection Regulation.

Rural Accessibility Improvement and Decentralization Project (RAIDP) has recently been completed (Dec. 2013).The scope of the work of this project was to construct and upgrade Rural Roads in 30 districts and bridges in 28 districts. A new program called Strenthening National Rural Transport Program (NSRTP) (2014-2019) has been started with financial support from the World Bank. Community Access Improvement Project (CAIP) has been implemented in 5 districts. This project is supported by JICA and is also responsible to construct bridges. Community Irrigation Project (CIP) has been implemented in 12 districts with objectives of developing and improving small-scale irrigation system through a community-driven process targeted to the poor, women, and other disadvantaged groups. Small irrigation systems are defined as systems having less than 25 hectares of irrigation area in the hills and mountains and less than 200 hectares in the Terai plains.

Decentralized Rural Infrastructure and Livelihood Program (DRILP) has been implemented in 18 districts. The expected outputs of this program are (i) construction of new, and rehabilitation of existing district roads and village roads including provision of small cross-drainage structures and all protection structures (ii) rehabilitation and upgrading of existing main trails and (iii) construction of new trail bridges on existing main trails. Similarly, Local Infrastructure for Livelihood Improvement (LILI) Project has been implemented in 8 districts with objectives of providing better access to water for irrigation to poor farmers with predominantly marginal landholding in selected food deficit areas in Nepal’s.

Local Roads Bridge Program (LRBP) has been implemented with objective of maintaining bridges on local roads. Reconstruction and Rehabilitation Project (RRP) has also been implemented. The purpose of this project is to reconstruct the physical infrastructures which were damaged during armed conflict. Road Board Maintenance Program (RBN) has been implemented in 65 districts and 58 municipalities of the country. RBN works together with road agencies [RA], which actually implement the road maintenance works. Rural Reconstruction and Rehabilitation Sector Development Program (RRRSDP) was implemented in 20 districts with the objectives of improving rural roads, developing and improving community-based supplementary rural infrastructures. This project has been completed in July 2013 and a new program is under discussion. District Road Support Program (DRSP) was implemented in 4 districts with objective of improving track, roads, bridges and causeways, and protection of infrastructure from landslide. Similar program known as Local Road Improvement Program has been implemented for another 4 years (2014-2017). Rural Access Program (RAP) second (2) with objective of improving 26 local roads in 7 districts has been completed and RAP3 has been started (2013-2017). The project is being implemented in 8 districts identified as core district and local road maintenance work is being implemented in other 6 districts.

This department also has Rural Village Water Resource Management Project (RVWRMP) in 10 districts with objectives of constructing and maintaining of water supply schemes and encourages people in adopting appropriate technologies and behavior related to water and sanitation infrastructure. Rural Water Supply and Sanitation Project has been implemented in Western Nepal (RWSSP-WN)

As per the information provided by different programs within the department on approved IEE reports, a total of 96 IEE reports are approved (Table 3). The list of approved IEE through this department is given in Annex 5. These programs are supported by external donors such as ADB, SDC and DFID.

Table 10: Number of road projects within DOLIDAR with approved IEE

|  |  |
| --- | --- |
| **Name of the program** | **No of approved IEE** |
| Decentralized Rural Infrastructure and Livelihood Program (DRILP) | 39 |
| Rural Reconstruction and Rehabilitation Sector Development Program (RRRSDP) | 49 |
| District Road Support Program (DRSP) | 8 |
| **Rural Access Program 2 (26 roads)** | **26** |
| **Total** | **122** |

There is less ownership and priority from the proponent for IEE report preparation. It takes long time to approve the IEE and implement the project work. It is difficult for speeding the IEE approval processes because of poor understanding and cooperation from other concerned Ministries and Department particularly with the Ministry of Forest and Soil Conservation and the Department of Forest. It is found that involving concerned stakeholder (District Forest Office)during project preparation and implementation makes easier coordination between the organizations.

There are Environmental Guidelines but there is no provision of environmental contract clauses/Bill of Quantity. During IEE study measures are identified but some issues were not included in Bill of Quantity (BoQ) which makes them difficult to address during implementation because IEE study and Detail Project Report preparation time was different and there was no proper attention to address the EMP during project implementation. So, environmental contract clauses and Bill of Quantity should to be included separately. Spoil management is still problem, even when there is provision in BoQ.

Implementation of environment management plan is very weak. IEE report is regarded as legal obligation and confined to documentation only. The proponent should take the ownership for the IEE and set aside required budget for the implementation of EMP on priority basis.

From Central level monitoring is done quarterly. There is provision of Environmental Expert as Central Implementation Support Consultant (CISC) and one associate - Environmental focal person in District. Project field visits are carried out from time to time by project staff and consultant CISC to monitor the different activities of IEE implementation.

District Safeguard Unit have been established, but are facing difficulty in addressing problems of compliance with environmental safeguards during implementation because of inadequate institutional capacity. This needs to be strengthened to handle work related to safeguards. Training must be provided regularly for road crews, as well as the contractors’ personnel for environmental impact management in order to enhance their awareness for better environmental impact management. This will help to ensure the safe and orderly completion of the Project.

Water management is a major issue in the design and implementation of infrastructure development particularly rural road construction. It is in this context that an understanding of the change in precipitation pattern, runoff and sediment discharge is necessary and these should be considered seriously while preparing IEE. In IEE reports Climate Change issues have not yet been addressed properly as this issue in new and GoN legislation is not yet in line with this issue. GoN has no proper guideline to handle this issue. Environmental Protection Act and Rules should be revised to include climate change issues in the IEE/EIA reports.

Under Rural Access Improvement and Decentralization Project (RAIDP) in DOLIDAR,EIA and IEE is not required for implementing project activities, but an Environment Management Plan (EMP) should be prepared and implemented. About 10% of the total project cost is spent in environment management. The project has senior planning, designing and supervision engineer; planning designing and supervision engineer, social development consultant and senior social development consultant in order to monitor environmental impacts. If the mitigation measures are identified at the beginning, they are incorporated in BoQ. It is difficult to deal with new issues that appear during the implementation of the project. In such case, the contractor is not permitted to deal with such new issues. Rather the users are mobilized and the necessary funds are made available. However, the users are obliged to bear 20 % of the costs. Supervision and monitoring is jointly carried out by the DDC and the project.

The IEE report of Gyampedol-Bagbhanjyang road (6 km long and 5 m wide) upgrading sub-project implemented by DOLIDAR was reviewed by the consultant of this project. The IEE processes as outlined in EPR and Environmental Impact Assessment Guidelines such as publication of public notice seeking written opinion from concerned VDC, DDC, Schools, Health Posts and related local stakeholders, interaction with local communities and related stakeholders, display of hardcopy of draft IEE report at information centre of concerned DDC and VDCs and digital copy of approved IEE report accessible in website were followed.

**Environmental monitoring of road upgrading projects**

Recently, environmental monitoring of two road upgrading projects carried out by RRSDP under DOLIDAR was done by independent academicians from the Central Department of Environmental Science, Tribhuvan University in Jhapa district. The report shows that the recommended mitigation measures for the management of spoils, drainage and irrigation canal have not been fully compliance as reported in the IEE report.

Another environmental monitoring study of two other roads in Illam district by the same institution shows that irrigation canal and drinking water supply have been adversely affected by the project activities.Bioengineering of unstable slopes and management of spoils and irrigation canal as recommended by the IEE reports has been compiled partially only.

Review of acts, rules, guidelines and standards was made. Baseline information using appropriate methodology was collected and analysed and alternative analysis was made. The magnitude, extent and duration of impacts in three phases – preconstruction, construction and operation were discussed. It also recommended site specific environmental mitigation measures and prepared environmental management plan. It also specified institutions responsible for implementation of mitigation measures and monitoring requirements. MoSTE is expected to facilitate when needed in environment safeguard; MoAFLD to review TOR and IEE report, coordinate with project on safeguard issues and conduct environmental monitoring; DoLIDAR for implementation and coordination and DDC for preparing IEE TOR and report, for conducting environmental safeguard monitoring and reporting. Framework for the implementation of EMP was also prepared. Cost for environmental monitoring was also allocated.

**Review of Gyampedol-Bagbhanjyang road upgrading sub-project**

This sub-project was visited by Road and Bridge Engineer and Disaster Risk Management Specialist on August 26, 2013. The road condition is fairly in good condition. However, a few gaps in the IEE report were noticed. The IEE report was more focused on construction phase without giving adequate attention in operation phase.

It was identified that Kalika Primary School at Totitole is likely to be affected from the project. Fencing for control of dust, nuisance, sprinkling of water during road construction, placement of information signboard (school area, speed limit) and restriction in the use of horns were recommended as mitigation measures. The school building is so close from the road and the height of the foundation of the school building is not deep than the road level. In the absence of retaining wall, the school building is likely to be cracked. The school is open without any compound wall or fencing. The students are easily exposed to the vehicular traffic in the road.

In the absence of regular clearance and frequent landslides, open drain and culverts are covered with grasses and mud. As a result, the road in several places has been damaged on the one hand and it is threatened in quite a few places by the flash flood that can occur due to closing of culverts.

In few places, translational landslides were noticed but no activities were seen to stabilize the landslide and clearing the material coming from landslides and deposited on the road and open drain.

## Ministry of Urban Development (MoUD)

Ministry of Urban Development is responsible to develop planned, clean and beautiful urban centres and settlements with provision of adequate infrastructure and service facilities. The main working areas of this ministry include urban development, housing, building construction, drinking water supply and sanitation. As per EPA and EPR this ministry is responsible to recommend TOR and report of EIA for its approval and approve TOR and report of IEE related to these sectors. The Department of Urban Development and Building Construction and the Department of Drinking Water Supply and Sewerage are within this Ministry. There is Environment Section under Drinking Water and Environment Division in the Ministry which is responsible to deal with environmental impact assessment.

Till the end of FY 2068/69, IEE reports for 175 project proposal have been approved from this ministry. During this period, 40 scoping document/ToR proposals for EIA have been forwarded to MoSTE. For FY 2069/70, IEE reports for 3 proposals for apartments have been approved. Climate change issues have not been addressed in the EIA and IEE reports yet. Those issues should be identified and the legal provisions to considered identified issues in EIA and IEE processes should be incorporated.

So far mitigation measures are being implemented by proponent themselves. There are very few instances of verification by MOUD. The concerned departments are also responsible for monitoring of mitigation measures undertaken.

It is felt that the existing policies, legislative provisions, guidelines and standards should be updated keeping in view the changes in recent years such as climate change. Regular orientation program is necessary to those staffs who are involved in environmental impact assessment within the Ministry. Staffs working in the environment section of the ministry and there are vacant posts in this section. Those vacant posts should immediately be fulfilled. Facilities so far available in this section are inadequate and equipment is outdated. These need to be improved.

The Ministry has formed an IEE evaluation committee coordinated by joint secretary of Drinking Water and Environment Division and the Chief of the Environment Section works as member secretary. Other members of the committee are the Chief of the concerned Division within the ministry, Under Secretary in Law, Chief of Planning Division, Chief of Monitoring Section, and representatives from Ministry of Science, Technology and Environment and other invited experts including sociologist. The size of the evaluation committee normally ranges from 9-12 persons.

## Department of Water Supply and Sewerage (DWSS)

Department of Water Supply and Sewerage (DWSS) was formally established in 1972. Since its establishment the department has been involved in the development of water supply and sanitation programs throughout the country. Initially DWSS was limited to constructing comparatively larger water supply systems in the district headquarters and urban centers but it gradually expanded to have a nationwide network to serve all kinds of settlements - urban, semi-urban and rural areas. DWSS is acting as the lead government department to i)provide and ensure safe, convenient and adequate water supply to all Nepalese, with sanitation as an integral component, and with specific focus on disadvantaged groups; ii)reduce the incidence of water-related diseases prevalent in the country; and iii)reduce suffering and drudgery of women and children, traditionally responsible for collecting water and domestic sanitation and hygiene.

Recently created Climate Adaptation and Appropriate Technology Section is reported as responsible unit for IEE and EIA processes. . It is reported that two EIA and 40 IEE reports in this sector have been approved and another 9 IEE reports are under the process of approval. However, there is no complete list of approved EIA/IEE reports and a system of record keeping within this division.

The Ministry of Urban Development has a list of 17 projects with approved IEE within DWSS (Table 11). All of them were under Small Towns Water Supply and Sanitation Program (STWSSP). The staff of this division may attend discussion meetings and give their suggestions on the report. -. Monitoring – baseline, compliance and impact of the project has to be given priority- Project managers are working as proponent, implementer, supervisor and monitoring expert.

Climate change issues are not mainstreamed in the EIA and IEE processes. It is felt that there should be environmental inspector in all the 75 districts to monitor the impact of development projects. It is also recommended that the criteria given in EPA/EPR for undertaking EIA/IEE need to be revisited and to be fixed further for social sectors like WATSAN. Approval process of EIA is very time consuming and it takes more than one year for a project.

Due to the nature of the works on WATSAN, IEE seems to be sufficient in buffer zone or catchment area. It is also felt that awareness about the importance of environmental impacts should be raisedamongst the authority. Regarding the monitoring of the implementation of the mitigation measures identified in the Environment Management Plan (EMP) in IEE, it is reported that the project is being monitored at various levels including regular monitoring by donor agencies. Though the issue of climate change is not directly addressed, it is discussed and necessary amendment is made in the design report. There is need for capacity development through organizing training on environmental impact assessment and increase the financial resources for field monitoring.

Table 11: List of IEE approved projects under DWSS

|  |  |  |
| --- | --- | --- |
| **S. No.** | **Project Name** | **Approved Date** |
| 1 | Lamki STWSSP | 2063/05/20 |
| 2 | Tulsipur STWSSP | 2063/05/19 |
| 3 | Itahari STWSSP | 2063/04/05 |
| 4 | Budhabare STWSSP | 2063/03/21 |
| 5 | Belbari STWSSP | 2063/03/20 |
| 6 | Birtamod STWSSP | 2063/03/20 |
| 7 | Nijgadh STWSSP | 2063/02/30 |
| 8 | Bardghat STWSSP | 2063/02/30 |
| 9 | Kawasoti STWSSP | 2062/09/04 |
| 10 | Mahendranagar STWSSP | 2062/05/16 |
| 11 | Bijuwar STWSSP | 2062/05/16 |
| 12 | Kushma STWSSP | 2062/05/05 |
| 13 | Kamalamai STWSSP | 2062/05/05 |
| 14 | Surunga STWSSP | 2062/05/05 |
| 15 | Bardibas STWSSP | 2062/05/05 |
| 16 | Beni STWSSP | 2062/05/05 |
| 17 | PHIDIM STWSSP | 2069/02/24 |

*Source: Ministry of Urban Development*

## Department of Urban Development and Building Construction (DUDBC)

DUDBC is responsible for planned urban development. It has three activities – Urban development, Housing, and Building. Its activities are focused on sustained development of urban centres through development of modern physical facilities conserving prevailing cultural, touristic and historical areas, promotion of planned settlements by providing safety and inexpensive housing facilities and construction and development of safety and inexpensive and environment friendly buildings.

There is urban environment section under urban development division of the department. However, the system of recording information about EIA/IEE has not yet been developed. This section does not have complete information on EIA/IEE so far approved in recommendation from this department.

TOR for EIA/IEE and its report of those projects directly implemented by this department is processed for approval from this department. However, EIA/IEE processes for other construction projects such as apartment and commercial complex etc is directly handled by the Ministry. This system should be changed and it should be made mandatory that all the EIA/IEE process for those projects related to the housing, urban development and building should start from this department.

The system of baseline, compliance and impact monitoring involving urban environment section has not yet been developed. The project itself works as the proponent, implementer and monitoring for environmental impact assessment.

In order to develop effective mechanism of implementing EMP by involving urban environment section, it is necessary to make provision of technical experts and financial resources.

## Ministry of Irrigation (MoI)

This ministry is responsible for the utilization and management of water resources through preparation and implementation of policies, plans and programs. It is also responsible to recommend TOR for EIA and its report for approval. As per EPA and EPR, this ministry has mandate to approve the TOR for IEE and its report of those projects related to irrigation development for agricultural development and river and river basin management for the reduction of water induced disaster risk. The Department of Irrigation and the Department of Water Induced Disaster Prevention are under this Ministry. There is Environment Section within Policy and Foreign Coordination Division of the Ministry.

Many of the activities carried out by the Department of Irrigation are focused on rehabilitation work and the Department of Water Induced Disaster Prevention on small scale embankment construction and donot need EIA and IEE. So, the number of IEE recommended by the respective department is very small (2-4 in a year). There is no permanent committee for the evaluation of IEE report as practiced by the Ministry of Urban Development as discussed above. Monitoring and evaluation of the EMP and impacts are almost non-existent. There is no incentive and other facilities to motivate people working environment section and no separate budgetary provision for field evaluation. There is no systematic record keeping system of EIA and IEE within Environment section. It needs to be initiated.

## Department of Irrigation (DOI)

The Department of Irrigation is one of the departments under the MoI of Government of Nepal (GoN). DoI is equally responsible for development of new irrigation projects and O&M of developed schemes. It is also responsible to prepare safeguard policy for the irrigation sub-sector as well as to prepare environmental guidelines and systematize environmental monitoring from central and department levels.I has given high priority to IWRM principles while planning and developing new projects. Having realized the importance of year round irrigation, it is underway to start multipurpose inter-basin water transfer project, diverting water from water-surplus river to water-deficit river. The Bheri Babai diversion project is the first one to be implemented. In the course of development, DoI has arrived at the stage of inter-basin water transfer and which is the new milestone of its achievement. However this will not be the full stop and it keeps on moving with the aim of expanding irrigation area and improving irrigation efficiency for the food security of the nation.

There are two development committees under MOI :i) Sunsari Morang Development Committee and ii) Groundwater Development Committee.Environment Branch within Surface Irrigation, Environment and Mechanical Management Division of the DoI is responsible for dealing issues of environment including EIA and IEE. The project manager performs tasks as proponent, implementer, supervisor and monitoring expert. There is no problem of expertise within the department but staff in environment branch is frequently changed. Similarly, the Environment Branch does not have separate budget for monitoring baseline information, compliance of recommended mitigation and adaptation measures and environmental impacts. There is no systematic record keeping system. Only one IEE was submitted in the environment branch last year. During the discussion, it was reported that firstly the importance of environment section should be realized by the concerned authority in the department and secondly, there should be the provision of separate budget for environmental section to carryout monitoring activities.

DOI is in the process of strengthening Environment Branch under Water Resources Project Preparatory Facility (WRPPF). It has not only realized the importance of environment and social safeguard but also realized the impact of climate change in this sector. In order to address above mentioned issues, an environment, social safeguard and climate change branch (ESSCCB) has been proposed under the Surface Irrigation Division of DOI.

## Department of Water Induced Disaster Prevention (DWIDP)

DWIDP is responsible to design and implement the programs of river and river basins conservation and develop appropriate technology for effective conservation of river and river basins and manage water induced disaster risks. DWIDP is the main institution responsible to mitigate various water induced disasters so as to protect the people and their property and physical infrastructures.

DWIDP has been able to complete the construction of about 91 Kilometer embankment under Peoples’ Embankment Program (PEP) in various 14 rivers by the end of F.Y.068/069. Similarly, about 188 Kilometer of embankment has been completed through Indian Grant Funded River Training Program by the end of F.Y.068/069.

This department has not yet involved in EIA/IEE processes. No EIA/IEE reports have been prepared for those projects implemented by this department. They do not have practice of assessing environmental impacts even for implementing embankment construction work with more than 45 km long. For example, the river training works in Dodaha and Lal Bakaiya rivers.

There is no section of environment within this department although the need of a separate section/division has been recently realized. Recently, the Department of National Park and Wildlife Conservation has asked to carry out IEE/EIA of any infrastructure which will be constructed within any National Park and its buffer area.. At present, it has been carrying out IEE study for East Rapti River Training Project and Narayani River Training Project as asked by Chitwan National Park The department has also felt a need of two sections/divisions – i) space technology (remote sensing and GIS) and ii) climate change and environment

## Ministry of Physical Infrastructure and Transport (MoPIT)

Ministry of Physical Infrastructure and Transport is responsible to recommend TOR and EIA report for approval for the projects related to road and railway development. As per EPA and EPR, this ministry is responsible to approve TOR for IEE and its report recommended by the Road Department for its approval.

There is Environment and Social Section under Planning, Monitoring and Evaluation Division of the Ministry. An IEE Review Committee has been formed under the Chairmanship of the Chief of Planning, Monitoring and Evaluation Division (Joint Secretary). The member secretary of the Committee is an engineer with experience in the field of environment impact assessment. Other members of the Committee include the Chief of the Environment and Social Section, Engineer from Planning Section, Legal Officer from Law and Legal Decision Implementation Section, and Sociologist of the Ministry. Other invitees are the representatives from the Ministry of Urban Development, the Ministry of Energy, the Ministry of Forest and Soil Conservation and the Ministry of Science, Technology and Environment. In addition, 1-2 experts are invited from outside as per the need of the work.

Monitoring and evaluation of EMP implementation is very weak because of limited number of manpower in the Environment and Social Section and limited financial resources for field investigation.

## Department of Road (DoR)

The Department of Road is responsible for development, expansion and strengthen the road network in a sustainable way for enhancing the overall socio-economic development and integration of the country through balanced regional development by providing due consideration for remote areas and deprived communities.

Geo Environment and Social Unit (GESU) under the Planning and Design Branch. GESU is responsible for environmental and social issues as well as geotechnical study. It is reported that a total of 8 EIA and 96 IEE reports have been approved through the Geo-Environment and Social Unit of the Department of Road since 2062 (Table 5). Most of the reports before year 2066 are not available in the GESU.

Table 12: Number of road and bridge projects under DoR with approved EIA/IEE

|  |  |  |
| --- | --- | --- |
| **SN** | **Project Name** | **Approved Year** |
|  | **IEE** |  |
| 1 | Birgunj border Access Road Improvement | 2061 |
| 2 | Lumbini Cable Car | 2061 |
| 3 | Kakarbhitta Inland Clearance Depot | 2061 |
| 4 | Bhairajawa Border Access Road Improvement | 2061 |
| 5 | Basantapur Myanglung | 2062 |
| 6 | Phidim Taplejung Road | 2062 |
| 7 | Tamakoshi Manthali Khurkot Road | 2062 |
| 8 | Betrawati Trishuli Galchhi | 2062 |
| 9 | Mirchaiya Katari Sunkoshi | 2062 |
| 10 | Kathmandu Bhaktapur Road | 2063 |
| 11 | Dhalkebar-Janakpur-Bhittamod (IEE) | 2063 |
| 12 | Chandranigahapur-Gaur Road Rehabilitation and Upgrading Works | 2064 |
| 13 | Sanfebagar-Martadi Feeder Road | 2064 |
| 14 | Sanfebagar-Malgansen Feeder Road | 2064 |
| 15 | Narayanghat-Mugling Highway | 2064 |
| 16 | Martadi-Kolti Feeder Road | 2064 |
| 17 | Malgansen-Belkhet Feeder Road | 2064 |
| 18 | Salyan Musikot Road Upgrading Works | 2064 |
| 19 | Sanfhebagar-Ekadigad Road | 2064 |
| 20 | Tuslipur-Salyan Highway | 2064 |
| 21 | Chhinchu-Jajarkot Feeder Road | 2064 |
| 22 | Gokuleshwor-Darchula Feeder Road Upgrading Works | 2064 |
| 23 | Ekadigadh-Bartugad | 2064 |
| 24 | Satbanjh-Gokuleshwor Road | 2064 |
| 25 | Sunkoshi-Okhaldhunga Feeder Road Upgrading Works | 2064 |
| 26 | Satbanjh-Baitadi-Jhulaghat Feeder Road | 2064 |
| 27 | Khodpe-Jhota Feeder Road | 2064 |
| 28 | Lower Dhungeshwor-Siyakot-Dailekh Feeder Road | 2064 |
| 29 | Tulsipur-Purandhara-Bhotechaur Feeder Road | 2064 |
| 30 | Bhalubang-pyuthan | 2064 |
| 31 | Taplejung-Suketaar Road | 2065 |
| 32 | Bhedichaur-Shakhar-Bokhar (IEE) | 2065 |
| 33 | Harkapur-Okhaldhunga Road upgrading Works(IEE) | 2065 |
| 34 | Sunkoshi Bridge and Approach Roads | 2065 |
| 35 | Okhaldhunga-Salleri Road Upgrading Works(IEE) | 2065 |
| 36 | Bhairahawa-Taulihawa Road Upgrading Works | 2065 |
| 37 | Surkhet-Kalikot Road of Surkhet-Jumla Road | 2065 |
| 38 | Kalilot –Manma Section of Surkhet-Jumla Road | 2065 |
| 39 | Jhota-Chainpur Section of Khodpe-Chainpur Road | 2065 |
| 40 | Birandrabazar-Yadukuha-Mainathpur Road (MRM) Dhanusha | 2065 |
| 41 | Janakpur-yadukuha Road | 2065 |
| 42 | Janakpur-Jathi Road,Dhanusha | 2065 |
| 43 | Charali-Chandragadhi –Kechana Road (Mechi Highway),Jhapa | 2065 |
| 44 | Kanepokhari-Rangeli Road (MRM0 Morang | 2065 |
| 45 | MRM(Jitpur)-Taulihawa-Khunuwa Road,Kapilbastu | 2065 |
| 46 | (TPR)Birjung-Aruwa Road,Parsa | 2065 |
| 47 | Nepalgunj-Bhagauda Road. Banke | 2065 |
| 48 | MRM(Bhurigaon)-Guleriya-Murtia Road,Bardiya | 2065 |
| 49 | Hilepani-Diktel Road Upgrading works | 2065 |
| 50 | Bhaktapur-Changunarayan Road Reconstruction Works | 2065 |
| 51 | Putalikhet-Karkineta-Kushma (IEE) | 2065 |
| 52 | Chakchake-Libang Road Upgrading Works | 2065 |
| 53 | Surkhet-Siyakot | 2065 |
| 54 | Jhimjhimiya-dhumrikhola (IEE) | 2066 |
| 55 | MRM(Tamagarhi)-Shimraungarh Road,Bara | 2066 |
| 56 | MRM(Manmat)-Kalaiya-Matiyarwa Road, Bara | 2066 |
| 57 | Birgunj-Thori Road | 2066 |
| 58 | MRM(Lamki)-Tikapur-Khakraula Road,Kailali | 2066 |
| 59 | Sati-Bhajaniya-Dhangadhi Road,Kailali | 2066 |
| 60 | (Nayaroad) Barhathawa-Mahubani Road,Sharlahi | 2066 |
| 61 | MRM(Nawalpur)-Malangwa Road,Sharlahi | 2066 |
| 62 | Saptakoshi Bridge | 2066 |
| 63 | Jayaramghat Bridge Project | 2067 |
| 64 | Jorpati Sankhu-Melamchi | 2067 |
| 65 | Arun(Leguwaghat) River Bridge (RAP) | 2067 |
| 66 | Sabha Khola Bridge Project (RAP) | 2067 |
| 67 | Ramapur-Lumbini-Kakarahawa Road | 2067 |
| 68 | Ghinaghat-Birat Chowk Road | 2067 |
| 69 | Mechipul-Chandragadhi-Birtamod Road | 2067 |
| 70 | Leguwaghat-Bhojpur Road | 2067 |
| 71 | Leguwaghat-Tumlingtar Road | 2067 |
| 72 | Manthali-Ramechhap Road | 2067 |
| 73 | EWH-Koshi Bridge(Chatara)-EWH | 2067 |
| 74 | Chhinchu(Pokhare)-Devisthal-Jajarkot | 2067 |
| 75 | Hugdi Bridge(Glumni District) (IEE) | 2067 |
| 76 | Trishuli River Bridge Project(Benighat-Arughat-Larke Bhanjyang Road)(IEE) | 2067 |
| 77 | MRM(Lamahi)-Koilabas Road,Dang | 2067 |
| 78 | Thaktholi to Darchula | 2068 |
| 79 | Tamakoshi River Bridge (Manthali-Chisapani Road,Ramechhap District ) (IEE) | 2068 |
| 80 | Narayani(Trishuli) Bridge Project (Dadhunga-Devighat) Road (IEE) | 2068 |
| 81 | Karnali Bridge(Geruwa)(IEE) | 2068 |
| 82 | Balglung- Burtibang Road | 2069 |
| 83 | Countermeasure Construction of Landslide in sindhuli road(IEE) | 2069 |
| 84 | Southern extension of Bishnumati Link Road, Teku | 2069 |
| 85 | Dailekh(Narayan Municipality)- Lanchaur Road | 2069 |
| 86 | Rani-Biratnagar-Itahari-Dharan Road | 2069 |
| 87 | Jaleshwor-Hardi River,Mahottari | 2069 |
| 88 | Manma to Jumla | 2069 |
| 89 | MRM(Maithan)-Gaushalabazar-Samsi,Mahottari | 2069 |
| 90 | Birjung-Pathaliya Road | 2069 |
| 91 | Beliya-Butwal Road | 2069 |
| 92 | MRM(Kalyanpur)-Barsain-Subharanpatti,Saptari | 2069 |
| 93 | Kamala Bridge Along Dharan-Chatara-Hetauda Road | 2070 |
| 94 | Bagmati Bridge Along Dharan-Chatara-Hetauda Road | 2070 |
| 95 | Bagmati Bridge(Bishnumati Link Road,Teku) | 2070 |
| 96 | Sunkoshi Bridge (Ramechhap-Sindhuli, Sikta road) | 2070 |
|  | **EIA** |  |
| 1 | Nepalthok Khurkot Section of Banepa Sindhuli Bardibas Road | 2063 |
| 2 | Sinduli-Bardibas (EIA) | 2063 |
| 3 | Chakrapath Tokha Jhor Chhahare | 2063 |
| 4 | Nagma-Gamgadi(EIA) | 2064 |
| 5 | Syafrubesi-Rasuwagadhi (EIA) | 2064 |
| 6 | Saljhundi Juthepauwa Sungredhunga Road | 2064 |
| 7 | Betrawati-Dhunchhe-Syafrubesi (EIA) | 2065 |
| 8 | Bhurigaon-Telpani-Surkhet (EIA) | 2068 |

There is a need of coordination and cooperation among government line agencies in the process of approving EIA and IEE reports. In many cases, it is difficult to get timely response from the Ministry of Forest and Soil Conservation in the process of EIA/IEE approval. There is lack of manpower with expertise in environmental impact assessment. Consultants involved in the EIA/IEE processes are not dedicated.

Although there is no problem in the implementation of mitigation measures in the projects funded by external donors, it is difficult to implement mitigation measures during procurement of government funded project because of budgetary allocation to implement measures identified in EMP of the IEE. No baseline, compliance and impact monitoring is carried out in those projects which are funded by the government. However, it is regularly carried out in those projects which are funded by external donors.

The climate change issues are yet directly addressed in the EIA and IEE report. At present there is overlapping of authority among different government ministries and departments. There is lack of handy guidelines for EIA/IEE. The available guideline should be updated and it should be handy. Currently, the expertise within the department is not sufficient enough. The full authority and responsibility is not given to the environment unit. Staff and financial resources are not sufficient. The staff should be motivated by providing incentives and they should be trained.

## Conclusions

From this survey of implementation of Environmental Assessment processes by different sector agencies, the following conclusions can be made:

1. Environmental Impact Assessment and Implementation Processes have not yet been fully internalized by the key stakeholders. Those processes are still regarded as legal obligation and in many cases limited to documentation only. So, the government and other key stakeholders should be aware about the importance of EIA in sustainable development, it should be owned and given priority in developing plans and programs.
2. The existing legal provisions, guidelines and standards do not address the new environmental challenges such as climate change and land use and land cover change. It should updated addressing the new challenges and issues.
3. It is necessary to incorporate all the risk reduction strategies, programs and activities in the Bill of Quantity (BoQ). But existing legislative provisions and guidelines do not have such strict provision. So, environmental contract clauses and Bill of Quantity should to be included separately.
4. Except DWIDP, other concerned government departments and ministries have established environmental sections to deal with the issues of environment including environmental impact assessment and monitoring. But the environment section in many of the government departments and ministries are not very active in dealing with environmental risk to the infrastructure itself and from the infrastructure also. In many cases, environment section is bypassed. They do not have complete list of EIA and IEE reports except in the MoAFLD. They are not directly involved in monitoring activities. There are no adequate staff with skills and expertise in reviewing environmental assessment report and monitoring (baseline, compliance and impact). Information management system within the environment section has not yet been developed. In almost all sectors, there is no provision of separate budget for environment section covering field monitoring activities. It is in this context that the environment section of each department and ministries should be made active through provision of adequate staffs and their capacity enhancement program, initiation of information management system with adequate financial resources including for field monitoring. It is necessary to establish climate change and environment section within the DWIDP and build its capacity to manage the risk of water induced disasters through an effective environmental impact assessment and implementation mechanism.
5. The quality of environment impact assessment report should be improved. In many cases, the baseline information given in the environment impact assessment report is not complete and in some cases more attention is given during construction phase neglecting strategies and measures required during operation phase. It is in this context, training to government staffs as well as the personnel and consulting firms regularly involved in environmental impact assessment on how to prepare a quality environment impact assessment report giving example of the past deficiencies.
6. The capacity of the District Development Committee for assessing environmental impact assessment, designing environmental safeguard strategies and programs and mentoring and evaluation is rather weak. Its capacity needs to be strengthened to handle work related to safeguards. Training must be provided regularly for road crews, as well as the contractors’ personnel for environmental impact management in order to enhance their awareness for better environmental impact management. This will help to ensure the safe and orderly completion of the Project. Moreover, the environmental inspector as provisioned in EPA should be posted in each district.
7. Environment Management Plans (EMP) even for small scale infrastructure development project as practiced by Rural Access Improvement and Decentralization Project (RAIDP) should be prepared and implemented. It should be monitored and evaluated regularly. Monitoring and evaluation of Environmental Impacts from independent academia people as initiated by the Ministry of Federal Affairs and Local Development should be followed by other government departments and ministries. It is also necessary to disseminate finding of the evaluation report by organizing meeting and workshops inviting government departments, ministries, academia, media people and other stakeholders. It will help to produce quality environment impact assessment report and identify effective risk management strategies and activities.
8. Interaction and coordination among government agencies as well as other key stakeholders is rather poor. It is in this context, interaction programs – meeting, workshops should be organized frequently. MoSTE should take lead role in organizing such activities.

# Analysis of issues for mainstreaming climate change

## Data Availability on Climate Change

The main sources of climate change data is the database developed by the Department of Hydrology and Meteorology. DHM has recently completed project on Climate Data Digitization and Downscaling of Climate Change Projections. Activities for the digitization of historical meteorological data, statistical climate downscaling and web portal development and dissemination have been completed. MoSTE has access to those data. However, that information has not been used and analyzed extensively to understand the processes of climate change and impact assessment. Climate Change Vulnerability Maps of the country haves been prepared in 2010 by compiling bio-physical and socio-economic data from various sources. Information from these maps has been extensively utilized while preparing NAPA and selecting project sites for LAPA. The Ministry has been preparing stocktaking reports on national circumstances, GHG emission, climate change vulnerability, adaptation planning, and adaptation and mitigation technologies and it is in the process of finalization. Similarly, methodologies and tools for community based vulnerability and adaptation planning have been prepared.

The ministry has recently prepared local adaptation plan of actions for 69 VDCs and one municipality. Information on climate change vulnerability and adaptation needs can be obtained from these reports.

Though information on socio-economic and ecological vulnerability at district and national level is available from National Communication Report, Climate Change Vulnerability Maps and Second National Communication Report, information on physical vulnerability (factor of safety) from climate change to infrastructure is scarce which has caused problems in climate change risk assessment of infrastructure and develop screening tools to quantify the risk.

## Main Gaps and Challenges

After analyzing the current situation of legislative provisions, institutional structure, working procedures and tools, operational programs to deal with the issues of environmental impact assessment including climate change risk assessment, the following gaps and challenges have been identified.

* Climate change issues have not yet been internalized in the IEE/EIA process. There is absolute lack of climate risk screening tools and methodology for IEE/EIA processes.
* Quality control of EIA report is still weak
* Processing and approval of reports is time consuming
* There is no provision for fixing valid period of the IEE/EIA report neither in EPA nor in EPR. So, there is chance of having outdated data and information in IEE/EIA report at the time of actual implementation of the project
* Field Monitoring and auditing of development projects in terms environmental management – mitigation and adaptation plan in the EIA report has not yet been initiated.
* Financial and human resources are not adequate for IEE/EIA processes. MoSTE is in low priority for the government and it is restructured frequently.
* EPA has made provision of environmental inspectors but they are not recruited yet
* There is no system of documentation of IEE/EIA report in one place.
* Studies on environmental issues arises after the completion of development infrastructure are lacking
* Communication and coordination with other line ministries and project implementers are rather poor. Project maturation information which is necessary for auditing environment after completion of the project is rarely maintained
* MoSTE is functioning at central level. It does not have local level offices – regional, district and municipality.
* Though approval of the establishment of the Department of Environment with its structure and manpower has been approved by the government, it has not yet been formed
* Staffs are frequent transferred and in some cases non experts have to carry out the tasks of experts
* Training and skill development programs for its staffs are inadequate
* Environmental governance in terms of enforcing environmental standards is rather weak
* There is absolute lack of a system of central pooling of data and information to develop clear house on climate and environment
* Though Environmental Protection Fund has been established, the fund has not yet been utilized because of the lack of provision in the act for its operation

## SWOT Analysis

The strength, weakness, opportunities and threats in different institutional aspects such as available policies, legislative provisions, standards, guidelines and tools, institutional arrangement and staffing, resources and other important aspects are summarized in Table 13 and a brief discussion is given below.

**Strengths**

Policies, acts and regulations for environmental impact assessment, climate change policy, national adaptation program of action (NAPA), national framework on local adaptation plan of action, various sectoral directives and guidelines related to environment impact assessment and environment protection have been formulated and implemented.

IEE and EIA processes for infrastructure development have already been adopted in the country. As per EPA and EPR, the line ministries have mandate to approve IEE and the Ministry of Science, Technology and Environment has mandate to approve TOR for EIA, EIA report, monitoring and auditing of EIA for large scale development projects.

MoSTE has long experience in reviewing and approving Scoping documents, TORs and EIA report. More than 144 EIA reports have been approved. Environment standards – ambient air quality, industrial effluents and vehicle emissions have been formulated. Likewise, the Government Departments and Ministries also have experience in reviewing and approval of TORs for IEE and IEE report, and reviewing of Scoping documents, TOR and EIA report.

Institutions for IEE and EIA processes have been created. MoSTE has two divisions – climate change management and environment. It has a separate section of environment standard, environment assessment, environment promotion and fund mobilization, environment pollution control and monitoring with considerable size of technical manpower (the section of environment promotion and fund mobilization and environment pollution control and monitoring have been proposed to transfer into the Department of Environment). The government has recently approved to establish a new department i.e. the Department of Environment with two divisions – administration and promotion and impact assessment and monitoring with a total of 39 officer level staff including 16 environmental supervisors. Provision for the establishment of a laboratory section within the Department of Environment has been made. Sections/units in the government departments and ministries for IEE/EIA studies and monitoring have already existed.

The need of institutions focusing on research on climate change and environment has been realized. Establishment of a Climate Change Fund for mobilizing financial resources to address the issues of climate change and a Climate Change Center for climate change research, monitoring have been proposed in Climate Change Policy.

Attention on environmental concerns and issues is given by development planners and decision makers while formulating development projects. Likewise, other stakeholders are increasingly interested in environmental concerns and issues of the development activities. Environmental awareness has been disseminated and financial grants have been provided to NGOs for carrying out environmental protection works.

**Weaknesses**

Though environmental concerns in development projects have been increasing among planners, decision makers and local communities and IEE/EIA processes have been made mandatory, still it is considered as time consuming, sources of conflicts and barrier for the implementation of development projects, and financial burden in carrying out mitigation and adaptation measures among many stakeholders. In some cases, it is also practiced to formulate different components of a bigger project as a project so that the cost of projects remains below the cost ceiling specified in EPR for IEE/EIA process.

Climate change issues have not yet internalized in the IEE/EIA process. It is necessary to develop climate risk screening tools and incorporate within the existing EIA screening framework. The initial climate risk screening process involves identification of climate sensitive component with appropriate indicators. Once the level of risk is determined, the intervention options need to be developed with cost benefit analysis of the intervention options.

Quality control of EIA report is still weak. Though EPA has made provision of environmental inspectors, they are not yet recruited. Processing and approval of reports is time consuming. System of compiling IEE/EIA reports in one place has not yet been developed. There is lack of central pooling of data and information to develop clear house on climate and environment. Monitoring and auditing is still weak because of inadequate human and financial resources. Field monitoring is almost not existence. It is only on paper work, review and revision and approval processes. Communication and coordination with other line ministries and project implementers are rather poor. Project maturation information is rarely maintained. Researches and studies on environmental issues, climate change impacts, and environmental health hazard are very limited and confined only on reviewing Scoping documents, TORs and EIA reports.

Though the government has approved for the establishment of the Department of Environment, it is not yet established. Frequent restructuring of the Ministry is common and there are no local level offices. MoSTE is in low priority for the government. Financial and human resources are not adequate. Moreover, staffs are transferred frequently and in many cases non-experts have to take tasks of the expert.

Environmental Protection Fund mandated by the Environment Protection Act, was established to finance environmental management. Since its establishment, the fund has more than US$ 14 million. But the money is not being utilized in the absence of act and regulation pertaining to its operation.

**Opportunities**

Increasing concern of climate change and environment at national and international level, high priority to strengthen the capacity to deal with the issues of climate change impacts and environmental assessment at national and international level, optimal utilization of existing and potential projects are some of the opportunities.

**Threats**

Most of the activities are developed as short term projects rather than long term programs. So, there is increasing uncertainty of internal and external funding after completing the project. The processes of climate change and its impacts are poorly understood. It has created problems in redefining and fixing environmental standards and design codes.

Table 13: Summary of Strengths, Weaknesses, Opportunities and Threats

| **Issues** | **Strength** | **Weaknesses** | **Opportunities** | **Threats** |
| --- | --- | --- | --- | --- |
| Policy and strategies | * Policies and strategies on environment management, environmental impact assessment, climate change including NAPA and disaster risk management have been formulated and implemented | * Policies and strategies so far developed have focus on socio-economic vulnerability but no concrete work on the assessment of physical vulnerability of infrastructure, its mitigation and adaptation has yet been done. * Climate change risk management in infrastructure development sectors has not yet been internalized in many of the policies and strategies developed in the past such as environmental policy and action plan 1993, Environment Assessment Guidelines, 1993, National Strategy for Disaster Management, 2008. | * Increasing concern of climate change and environment at national and international level * High priority to strengthen the capacity to deal with the issues of climate change risk and environmental assessment at national and international level | * The process of climate change and its risks are poorly understood creating problem in redefining and fixing environmental standards, design codes and guideline |
| Acts and Regulations | * Acts and rules such as EPA and EPR, LSGA and LSGR are enforced making IEE and EIA mandatory and empowering local bodies for the management of natural resources, environmental risk and development of environmental friendly infrastructure and protection of physical infrastructure * IEE and EIA processes for infrastructure development have already been adopted and MoSTE has long experience in guiding, reviewing and approval of EIA | * Environmental governance in terms of enforcing environmental standards is rather weak * Screening criteria for IEE/EIA in the development of sewerage system not objectively defined in EPR * Climate change issues have not yet been internalized in the IEE/EIA process * IEE/EIA processes and approval of report takes long time * Quality control of IEE/EIA report is still weak * Environmental monitoring and auditing is still weak. Field monitoring is almost non-existence * System of compiling and placing IEE/EIA reports in one place has not yet developed * Neither EPA or EPR has specified period between IEE/EIA assessment and actual implementation of the project | * Increasing concern of climate change and environment at national and international level * High priority to strengthen the capacity to deal with the issues of climate change risk and environmental assessment at national and international level | * The process of climate change and its risks are poorly understood creating problem in developing widely acceptable regulations |
| Standard, guidelines, directives and tools | * Environmental standards for pollution control, environmental impact assessment guidelines, urban environment management directives, guidelines and framework for environment and social impact assessment and risk management in road sectors and recently framework and screening tools for climate resilience infrastructure development have been prepared | * Though guidelines and directives for environment impact assessment for road and urban development sectors have been prepared, but climate change risk is not yet considered * No guidelines and directives for IEE/EIA have yet been developed in sectors like irrigation and water supply * No climate change risk screening tools covering all sectors of infrastructure development yet developed | * Increasing concern of climate change and environment at national and international level * High priority to strengthen the capacity to deal with the issues of climate change risk and environmental assessment at national and international level | * The process of climate change and its risks are poorly understood creating problem in redefining and fixing environmental standards, design codes and guideline |
| Institutional Arrangement | * Advisory bodies such as Environment Council, Commission on Sustainable Development, Climate Change Council, National Development Council have been constituted. * Different committees such as PPCR Coordination Committee, Technical Assistance Steering Committee, Technical Assistance Working Committee, Multi-stakeholder Climate Change Coordination Committee, * National Steering Committee of Designated National Authority have been constituted and * Climate Change Network, Nepal Climate Change and Development Portal have been developed within MoSTE * MoSTE has environment and climate change management divisions. There are separate section of climate change, sustainable development and adaptation, environment assessment, environmental promotion of fund mobilization within environment and climate change divisions. * Recently, the government has approved for the establishment of the Department of Environment with environmental impact assessment and monitoring section, environmental impact adaptation section and environment promotion section * Environment section has been established in all the government department which is responsible to proceed for the approval of IEE/EIA and monitoring * The need of research on climate change and environment has been realized and recommended for the establishment of Climate Change Centre | * Advisory committees are not adequately active and meetings are rarely organized * Frequent restructuring of the Ministry and lack of regional and local (district and municipality) level offices * MoSTE is not in high priority in the overall governance with provision of limited financial and human resources * Though the government has approved the establishment of the Department of Environment, it is not yet established * Field research on environmental issues, climate change risk and its management is limited * Institutions such as National Environmental Monitoring Network, Nepal Academy of Environmental Sciences, EIA Appraisal Centre which are essential for research, monitoring and evaluation of environmental risk including climate change have not yet been established even at central level | * Increasing concern of climate change and environment at national and international level * High priority to strengthen the capacity to deal with the issues of climate change risk and environmental assessment at national and international level | * Most of the activities are developed as short term projects and there is increasing uncertainty of internal and external funding |
| Staffs | * Currently seven officer level staff are working in climate change division and 12 officer level staff in environment division * Nine officer level posts for environmental impact adaptation and environment promotion, 11 posts for environmental impact assessment and monitoring including environment supervisors in the Department of Environment have been approved | * EPA has made provision of environmental inspectors but they have not recruited yet * Staffs are inadequate particularly for field monitoring and auditing * Frequent transfer of staffs and non-expert taking up the key position * Inadequate training and skill development programs for staffs | * Increasing concern of climate change and environment at national and international level * High priority to strengthen the capacity to deal with the issues of climate change risk and environmental assessment at national and international level | * Most of the activities are developed as short term projects and there is increasing uncertainty of internal and external funding |
| Resources | * MoSTE has been receiving adequate financial resources from donors for mainstreaming climate change into development and environmental risk management * Climate Change Fund for mobilization of financial resources has been formed | * Field research, environmental monitoring and auditing, climate change risk assessment in infrastructure development are limited due to inadequate financial resources for those activities * Amount of about USD 14 million has been deposited in Climate Change Fund, in the absence of legal provision for its mobilization, the money is not being utilized | * Optimal utilization of existing and potential projects funded by donors in the field of climate change risk management | * Most of the activities are developed as short term projects and there is increasing uncertainty of internal and external funding |
| Other | * Development planners, decision makers and other stakeholders are increasing aware with the concerns and issues of environmental risk management including climate change * Awareness raising activities through mass media, workshops and newsletters have been regularly carried out and financial grants are provided to NGOs to carry out environment protection work | * IEE/EIA processes are still considered as time consuming, sources of conflicts and barrier for the timely completion of the development projects and financial burden by many stakeholders * No curricula on environmental risk management including climate change has been developed and incorporated in formal education in all level – primary, secondary and higher education * Communication and coordination with other line ministries and project implementers are rather poor. Project maturation information is rarely maintained | * Increasing concern of climate change and environment at national and international level * High priority to strengthen the capacity to deal with the issues of climate change risk and environmental assessment at national and international level | * Most of the activities are developed as short term projects and there is increasing uncertainty of internal and external funding |

# Way Forward for Climate Change Mainstreaming in Development

A number of activities have been recommended for climate change mainstreaming in development are presented in Table 14. Recommended output based prioritized activities are the development of climate change risk screening methods and tools for IEE/EIA, training on climate change risk screening method and tools so far developed, training for quality control of IEE/EIA report, development of a documentation of the IEE/EIA report in one place, preparation of case study reports in order to understand the gaps between IEE/EIA report on mitigation planning and its implementation and develop monitoring and auditing methodologies and planning. It is also necessary to develop training materials and conduct training for staffs of local bodies – DDCs, VDCs and Municipalities for assessing climate change risk and planning for its management.

EPA/EPR should be amended with provision of fixing duration between EIA completion and project implementation, operational procedures of Environmental Protection Fund, provision for internalization of climate change risk screening methods and tools so far developed by this project and objectively defined screening criteria for sewerage development. It is necessary to fill the vacant posts as soon as possible and recruit environmental inspector as envisaged in EPR. It is also necessary to develop a system of effective and timely coordination and regular field monitoring and auditing.

Table 14: Recommended Activities for Climate Change Mainstreaming in Development

|  |  |  |
| --- | --- | --- |
| **Output based Prioritized Activities** | **Policy Recommendation** | **Organization and Coordination** |
| * Development of Climate Change Risk Screening Method and Tools for IEE/EIA | * Objectively defined screening criteria for sewerage (EPA/EPR) | * Recruitment of additional staffs including environmental supervisor/ inspector |
| * Training on Climate Change Risk Screening Method and Tools so far developed | * Fixing duration between EIA completion and project implementation (EPA/EPR) | * Develop system of effective and timely coordination |
| * Case studies in order to understand the gaps between IEE/EIA report on mitigation planning and its implementation and to develop monitoring and auditing methodologies and planning | * Internalization of Climate Change Risk Screening methods and tools in EPA/EPR | * Regular field monitoring and auditing |
| * Training for improving the quality of IEE and EIA report | * Operational procedures of Environmental Protection Fund | * Capacity enhancement of local bodies – DDC, VDC, Municipalities |
| * Development of documentation system for IEE and EIA reports (digital like Climate Change Portal. |

Annex 1: Persons Contacted

|  |  |  |  |
| --- | --- | --- | --- |
| **SN** |  | **Name** | **Institution** |
| 1 | Mr | Chakrapani Sharma | MoFLD |
| 2 | Mr | Ek Raj Sigdel | MoFLD |
| 3 | Ms | Radhika Prajapati | DOR |
| 4 | Ms | Meera Gyanwali | DUDBC |
| 5 | Mr | Rabinath Babu Shrestha | DWIDP |
| 6 | Mr | Thakur Raj Pant | DOLIDAR, RRRSDP |
| 7 | Mr | Sharad Manandhar | DOLIDAR, DRILP |
| 8 | Mr | Ram Parajuli | DOLIDAR |
| 9 | Mr | Prakash Thapa | DOLIDAR, CIP |
| 10 | Mr | Jeevan Guragain | DLIDAR, DRSP |
| 11 | Mr | Baikuntha Aryal | DOLIDAR, RAIDP |
| 12 | Mr | Anil Chaudhari | DOLIDAR, RAIDP |
| 13 | Mr | Ashish Bhadra Khanal | DOI |
| 14 | Mr | Ram Chandra Saha | DWSS |
| 15 | Mr | Padam Kumar | DWSS |
| 16 | Mr | Dinesh Rajouria | DOI |
| 17 | Mr | Kedar Prajapati | MoUD |
| 18 | Mr | Prabin Raj Maskey | MoI |
| 19 | Mr | Purba Kumar Rai | MoPIT |
| 20 | Mr | Ramesh Pant | CDES, TU |
| 21 | Mr | Manoj Aryal | CDES, TU |

Annex 2: List of EIA approved Projects by Sector

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Sectors** | **SN** | **Projects** |  | **Sectors** | **SN** | **Projects** |
| **Building construction** | 1 | Tilganga Eye centre |  | **Roads** | 1 | Kathmandu-Naubise Alt. Road |
| 2 | City Scape Appartment |  | 2 | Hille-Bhojpur Road |
| 3 | Kongde Veiw Resort |  | 3 | Basantapur-Chainpur-Khadbari Road |
| 4 | Farakppa Village Resort |  | 4 | Banepa-Sin.-Bardibas Road |
| 5 | Madan Smirti Academy |  | 5 | Banepa-Sin.-Bardibas Road |
| 6 | Chitawan School of Medical Scinces |  | 6 | Chakrapath-Tokha-Jhorchhahare Road |
| 7 | Devdaha Med.Col. & Res. Centre |  | 7 | Galchhi-Trisuli-Syaphrubesi Road |
| 8 | Hospital for Civil Servants |  | 8 | Saljhundi-Juthepauwa Road |
| 9 | National Institute of Neurological Sciences |  | 9 | Syaphrubesi-Rasuwagadi Road |
| 10 | Park Veiw Apparment |  | 10 | Bhurigaun Telpani Road |
| 11 | Sunrise Appartment |  | 11 | Road Maintanance |
| 12 | Civil Homes Apartment |  | 12 | Thoche Larke Road Project. |
| 13 | Down Town Appartment |  | 13 | Thulo Bharku-Syaphru Road |
| 14 | Grande Tower Appartment |  | **Irrigation** | 1 | Fattepur Irrigation Project |
| 15 | Imperial Court Appartment |  | 2 | Babai Irrigation Project |
| 16 | Kist Medical Collage |  | 3 | Sikta Irrigation Project |
| 17 | Lumbini Medical Collage & Re. Centre |  | 4 | Babai IP(Siphon Construction) |
| 18 | Mid Point Community Hospital |  | 5 | Badkapath Irrigation Project |
| 19 | Silvercity Appartment |  | 6 | Bheri Babai Diversion HPG |
| 20 | Suncity-1 Appartment |  | 7 | Mahakali Irigatiojn Project |
| 21 | Suncity-2 Appartment |  | 1 | Melamchi Drinking Water |
| 22 | Vegacity Appartment |  | 2 | Lekhnath Drinking Water |
| **Solid waste management, landfill and water treatments** | 1 | Solid Waste Managt.Mechinagar. |  | 3 | Birendra Nagar Drinking Water |
| 2 | Solid Waste Treat. (Okharpauwa) |  | 4 | Kavre valley Drinking water Supply |
| 3 | Medical Waste Managt., Kath. |  | **Sand and gravel extraction** | 1 | Extraction of Boulders, Aggregate in Rupandehi District |
| 4 | Bancharedanda Landfill site |  |  |  |  |
| 5 | Central Effuluent Treat., Hetauda |  |  |  |  |
| 6 | Melamchi Water Treatment |  |  |  |  |

Annex 3: Name of the projects with approved IEE from the MoFALD

| **IEE\_No** | **Topic** | **District** |
| --- | --- | --- |
| 1 | Jagati-Doleswor-Ashapuri Road | Bhaktapur |
| 2 | Landfill Site of Ramgraam Municipality | Chitawan |
| 3 | Extraction of Sand, Gravela nd Stones from Various River | Palpa |
| 4 | Extraction of Sand, Gravela nd Stones from Various River | Palpa |
| 5 | Baglung Landfill Site | Baglung |
| 6 | Birendranagar Landfill Site | Surkhet |
| 7 | Bankattaa - Bagai Road | Chitawan |
| 8 | Tribenidham suspension bridge | Chitawan |
| 9 | Surungaa - Saranaamati - Digal Road | Jhapa |
| 10 | Extraction of Sand, Gravela nd Stones from various rivers | Makawanpur |
| 11 | Pathari-Sikati Road | Morang |
| 12 | Mijhid - Runibang Road | Rolpa |
| 13 | Pakali-Chataraa Road | Sunsari |
| 14 | Extreaction of SG&S from Kaligandaki River | Baglung |
| 15 | Extreaction of SG&S from Marshyangdi, Chepe, Madi, Risti, Midim AND Paudi River | Lamjung |
| 16 | Extreaction of SG&S from various rivers | Parsha |
| 17 | Lagadi-Dhobani Agriculture Road | Parsha |
| 18 | Extreaction of SG&S from various rivers | Shyangja |
| 19 | Extreaction of SG&S from Varoius Rivers | Banke |
| 20 | Jigbudha-Lipna Road | Dadeldhhura |
| 21 | Extreaction of SG&S from Varoius Rivers | Dhankuta |
| 22 | Extreaction of SG&S from Package - Section A Rivers | Kaski |
| 23 | Extreaction of SG&S from Package - Section B Rivers | Kaski |
| 24 | Extreaction of SG&S from Package - Section C Rivers | Kaski |
| 25 | Extreaction of SG&S from Varoius Rivers (Jhimruk, Maadi, Arang, Artung, Ganaha and Lung) | Pyuthan |
| 26 | Chautara - Melamchi Road | Sindhupalchowk |
| 27 | Chyatra Khola | Chitawan |
| 28 | Daladale - Dhawadi Road | Nawalparasi |
| 29 | Harthowk-Tigire | Palpa |
| 30 | Bansbari - Jagat | Palpa |
| 31 | Aryabhanjyang - Rampur | Palpa |
| 32 | Rangkhola - Biruwa | Shyangja |
| 33 | Mirdi Jagatbhyanjang - Chaapakot | Shyangja |
| 34 | Mopur-Ruptola Road | Bajhang |
| 35 | Landfill site of solid waste management | Dhankuta |
| 36 | Extraction of Sand, Gravel and Stones from Kamala River | Dhanusa |
| 37 | Extraction of Sand, Gravel and Stones from Chaarnath River | Dhanusa |
| 38 | Extraction of Sand, Gravel and Stones from Various River | Dhanusa |
| 39 | Extraction of Sand, Gravela nd Stones from Various River | Dhanusa |
| 40 | Bhirkot-Sahare-Hawa Road | Dolakha |
| 41 | Extraction of Sand, Gravela nd Stones from Various River | Jhapa |
| 42 | Extraction of Sand, Gravela nd Stones from Various River - II | Jhapa |
| 43 | Extraction of Sand, Gravela nd Stones from Seti River - Cluster I | Tanahun |
| 44 | Extraction of Sand, Gravela nd Stones from Seti River - Cluster II | Tanahun |
| 45 | Extraction of Sand, Gravela nd Stones from Seti River - Cluster III | Tanahun |
| 46 | Extreaction of SG&S from Trishuli River | Chitawan |
| 47 | Extreaction of SG&S from Martal River | Chitawan |
| 48 | Extreaction of SG&S from Lamabagar of Sunkoshi River | Kabhrepalanchowk |
| 49 | Landfill site of Bhimeswor Municipallity | Dolakha |
| 50 | Guphaa - Dobhaan Road | Taplejung |
| 51 | Salena - Melaili | Baitadi |
| 52 | Chupra - Mehaltoli Road | Dailekh |
| 53 | Anpswara - Arughaat | Gorkha |
| 54 | Thinke-Dillichaur-Dhuwaghaat Road | Jumla |
| 55 | Namdu-Marbu-Hap Road | Dolakha |
| 56 | Extraction of Sand, Gravela nd Stones from Budhi Gandaki and Marsjhyangdi River | Gorkha |
| 57 | Extraction of Sand, Gravela nd Stones from Daraudi River | Gorkha |
| 58 | Extraction of Sand, Gravela nd Stones from Various River | Gulmi |
| 59 | Shivaganj - Bagahachaudhari Road | Jhapa |
| 60 | Extraction of Sand, Gravela nd Stones from Myagdi and Kaligandaki River | Myagdi |
| 61 | Extraction of Sand, Gravela nd Stones from Tallo Marin River | Sindhhuli |
| 62 | Extraction of Sand, Gravela nd Stones from Tallo Mathillo River | Sindhhuli |
| 63 | Extraction of Sand, Gravela nd Stones from Tallo Kamala River | Sindhhuli |
| 64 | Extraction of Sand, Gravela nd Stones from Mathillo Kamala River | Sindhhuli |
| 65 | Extraction of Sand, Gravela nd Stones from Gadyauli River | Sindhhuli |
| 66 | Extraction of Sand, Gravela nd Stones from Gwang River | Sindhhuli |
| 67 | Extraction of Sand, Gravela nd Stones from Bansbari to Phataksila of Indrawati River | Sindhupalchowk |
| 68 | Extraction of Sand, Gravela nd Stones from Indrawati River | Sindhupalchowk |
| 69 | Extraction of Sand, Gravela nd Stones from Sunkosi River | Sindhupalchowk |
| 70 | Extraction of Sand, Gravela nd Stones from Kamala, Mainawati, Ghurmi and Bataha River | Siraha |
| 71 | Extraction of Sand, Gravela nd Stones from Khutti, Balan, Sarre, Gagan, Jhirahi and Maraain River | Siraha |
| 72 | Extreaction of SG&S from Likma-Kandari-Dida Rivers | Kailai |
| 73 | Extreaction of SG&S from Shivaganga, Gauriganga, and Mohana Rivers | Kailai |
| 74 | Extreaction of SG&S from Kada, and Kora Rivers | Kailai |
| 75 | Extreaction of SG&S from Sunkoshi and Indrawati Rivers | Sindhupalchowk |
| 76 | Bhimdhunga - Lamidanda | Dhading |
| 77 | Dhadingbesi - Salyantaar | Dhading |
| 78 | Lamachaur - Machhapuchhre | Kaski |
| 79 | Rakhi- Mijure | Kaski |
| 80 | Jaleshwor - Krishnapur | Mahottari |
| 81 | Matihaani - Maddaiya Road | Mahottari |
| 82 | Kulekhani-Raigaun Road | Nawalparasi |
| 83 | Karmaiya - Hatiyal Road | Sarlahi |
| 84 | Kauneda - Janakinagar Road | Sarlahi |
| 85 | Lahan - Thaati | Siraha |
| 86 | Siraha - Mirchaiya | Siraha |
| 87 | Zeromile - woripapatti Road | Siraha |
| 88 | Martadi - Majhi Road | Bajura |
| 89 | Khulali - Bhaatadi Road | Kalikot |
| 90 | Sundarbazar - Duipiple | Lamjung |
| 91 | Extraction of Sand, Gravela nd Stones from Various River | Dang |
| 92 | Extraction of Sand, Gravela nd Stones from Various River - II | Dang |
| 93 | Extraction of Sand, Gravela nd Stones from Various River - III | Dang |
| 94 | Mauwakhola - Kolphu Khola Road | Dhading |
| 95 | Extraction of Sand, Gravela nd Stones from Manahari River | Dhading |
| 96 | Extraction of Sand, Gravela nd Stones from Trishuli and Thopal River | Dhading |
| 97 | Extraction of Sand, Gravela nd Stones from Belkhu, Aagara and Mahesh River | Dhading |
| 98 | Garma - Deusha Road | Solukhumbu |
| 99 | Syaubari-Laukil-Yarshaa Road | Rasuwa |
| 100 | Bimala Nadi Sadak Bridge | Dhanusa |
| 101 | Surahi Nala Road Bridge Road | Kapilbastu |
| 102 | Chauri Khola Road Bridge | Ramechap |
| 103 | Baruwa Khola, Triyuga khola, and Lalpatta khola | Udayapur |
| 104 | Tawakhola, Kamalakhola package - 3 | Udayapur |
| 105 | Dhorchaur- Chinali Road | Salyan |
| 106 | Salme - Jantarthaap Road | Salyan |
| 107 | Myanglung- Isuwa | Terhathung |
| 108 | Isuwa - Sankranti Road | Terhathung |
| 109 | Beteni - Rautapokhari Road | Udayapur |
| 110 | Bitule Latinath - Paribagar Road | Darchula |
| 111 | Manthali - Pakarbash Road | Ramechap |
| 112 | Bagbajaar-bagarkot Road | Dadeldhhura |
| 113 | Sunkhani-Kyanpa Road | Dolakha |
| 114 | lele-Chandanpur Road | Lalitpur |
| 115 | Jorpokhari - Oyam Road | Panchthar |
| 116 | Dobilla - Falebas Road | Parbat |
| 117 | Kshinteng - Syarpu Road | Rukum |
| 118 | Khaniyakharka - Kamarebhyanjyang Road | Sindhhuli |
| 119 | Sildhunga -Tekanpur Road | Sindhupalchowk |
| 120 | Extraction of Sand, Gravela nd Stones from Dunduwa River | Banke |
| 121 | Extraction of Sand, Gravela nd Stones from Man River | Banke |
| 122 | Extraction of Sand, Gravela nd Stones from Muguwa River | Banke |
| 123 | Extraction of Sand, Gravela nd Stones from Jhimjhari River | Banke |
| 124 | Extraction of Sand, Gravela nd Stones from Khairi River | Banke |
| 125 | Extraction of Sand, Gravela nd Stones from Rapti River | Banke |
| 126 | Dunai-Lesikyamp-Dho Road | Dolpa |
| 127 | Maure-Simpaani Road | Khotang |
| 128 | Letang-Budhabare Road | Morang |
| 129 | Kalakandalake-Khamale-Kawa Road | Mugu |
| 130 | Phidim-Ranigaun-Yashok Road | Panchthar |
| 131 | Extraction of Sand, Gravela nd Stones from Paurahi Ghat of Bagmati River | Rautahat |
| 132 | Extraction of Sand, Gravela nd Stones from Samanpur and Ramauli Ghat of Bagmati River | Rautahat |
| 133 | Extraction of Sand, Gravela nd Stones from Dhansar and Rangilaghat of Bagmati River | Rautahat |
| 134 | Extraction of Sand, Gravela nd Stones from Pauda River | Rautahat |
| 135 | Extraction of Sand, Gravela nd Stones from Balan River | Saptari |
| 136 | Extraction of Sand, Gravela nd Stones from Khado River | Saptari |
| 137 | Extraction of Sand, Gravela nd Stones from Kharak River | Saptari |
| 138 | Extraction of Sand, Gravela nd Stones from Sisabari River | Saptari |
| 139 | Extraction of Sand, Gravela nd Stones from Ghyampe River | Sindhhuli |
| 140 | Extraction of Sand, Gravela nd Stones from Chandahar River | Sindhhuli |
| 141 | Extreaction of SG&S from Machheli - Sunbara-Banda- and Mohana Rivers | Kanchanpur |
| 142 | Extreaction of SG&S from Chaudhar- Musepani- and Tilakpur Rivers | Kanchanpur |
| 143 | Titihariya - Sonpur Road | Banke |
| 144 | Rajaapur Chakrapath Road | Bardia |
| 145 | Khutiya - Matiyani Road | Kailai |
| 146 | Gaur - Saantapur Road | Rautahat |
| 147 | Aurahiya - Himalibas Road | Rautahat |
| 148 | Gaur- Inarbari Road | Rautahat |
| 149 | Mukundagadh - Tereni Road | Rupandehi |
| 150 | Gaighat - Nepaltar Road | Udayapur |
| 151 |  | Udayapur |
| 152 | Maworhaat | Baitadi |
| 153 | Dunai - Tribeni | Dolpa |
| 154 | Gamgadi Talchaa Road | Mugu |
| 155 | Beni Darbang | Myagdi |
| 156 | Thoche - Larke Road | Manang |
| 157 | Budahar-Jogbuda Road | Dadeldhhura |
| 158 | Extraction of Sand, Gravela nd Stones from Karnali River (Package III) | Kailai |
| 159 | Extraction of Sand, Gravela nd Stones from Kandraa and Dhobiniyaa (Package IV) | Kailai |
| 160 | Extraction of Sand, Gravela nd Stones from Chisyang River | Morang |
| 161 | Extraction of Sand, Gravela nd Stones from Budhi River | Morang |
| 162 | Extraction of Sand, Gravela nd Stones from Dansh and Bakrahaa River | Morang |
| 163 | Extraction of Sand, Gravela nd Stones from Singiya River | Morang |
| 164 | Kagbeni - Jhaite Road | Mustang |
| 165 | Chisapani-Huwas-Barachaur Road | Parbat |
| 166 | Extraction of Sand, Gravela nd Stones from Gangajali River | Saptari |
| 167 | Pipalbhyanjyang - Haitar Road | Sindhhuli |
| 168 | Gularia Landfill Site | Bardia |
| 169 | Ilam Landfill Site | Ilam |
| 170 | Sibapokhari Landfill Site | Palpa |
| 171 | Kamalamai Landfill Site | Sindhhuli |
| 172 | Baglung-Kusmiseraa Road | Baglung |
| 173 | Rumjataar - Kharte Kholaa Road | Okhaldhunga |
| 174 | Sanghuu Dobhaan Road | Taplejung |
| 175 | Shaktikhor-Prithvii Highway (Fisling) | Chitawan |
| 176 | Hile-Uttarpani-Chhintang Road | Dhankuta |
| 177 | Rajubani-Chisapani-Danabari | Ilam |
| 178 | Mangalbare-Dhushreni-Gajurmukhidham-Ibhang | Ilam |
| 179 | Busterminal at Kakarbhitta and Pyaribhitta of Mechinanagr Nagarpalika | Jhapa |
| 180 | Sankhu-Jahasipauwa-Phatkeswor Road | Kathmandu |
| 181 | Kageswori-Chakrapath Road | Kathmandu |
| 182 | Extraction of Sand, Gravela nd Stones from Jharahi River | Nawalparasi |
| 183 | Extraction of Sand, Gravela nd Stones from Patthar River | Nawalparasi |
| 184 | Extraction of Sand, Gravela nd Stones from Baulaha River | Nawalparasi |
| 185 | Extraction of Sand, Gravela nd Stones from Khajura River | Nawalparasi |
| 186 | Extraction of Sand, Gravela nd Stones from Turiya River | Nawalparasi |
| 187 | Extraction of Sand, Gravela nd Stones from Turiya River - 2 | Nawalparasi |
| 188 | Extraction of Sand, Gravela nd Stones from Jyamire - Binaya River | Nawalparasi |
| 189 | Extraction of Sand, Gravela nd Stones from Kerung River | Nawalparasi |
| 190 | Extraction of Sand, Gravela nd Stones from Arun River | Nawalparasi |
| 191 | Extraction of Sand, Gravela nd Stones from Giruwari River | Nawalparasi |
| 192 | Extraction of Sand, Gravela nd Stones from Bhumepanwar River | Nawalparasi |
| 193 | Extraction of Sand, Gravela nd Stones from Bhulahi River | Nawalparasi |
| 194 | Khimti-Namadi-Haludanda Road | Ramechap |
| 195 | Bogatitar-Simle-Bhorle-Parchyang (Simple Paakhola Section) | Rasuwa |
| 196 | Bogatitar-Simle-Bhorle-Parchyang (Paakhola - Thulobhorle Section) | Rasuwa |
| 197 | Kakri-Kol-Hukam-Maikot | Rukum |
| 198 | Extreaction of SG&S from Package - I Rivers | Jhapa |
| 199 | Extreaction of SG&S from Package - II Rivers | Jhapa |
| 200 | Extreaction of SG&S from Package - III Rivers | Jhapa |
| 201 | Bhjojpur - Ghodetar | Bhojpur |
| 202 | Diktel Aishelukharka Road | Khotang |
| 203 | Extraction of Sand, Gravela nd Stones from various rivers | Dhankuta |
| 204 | Duchyang - Soyang - Nayabazar Road | Ilam |
| 205 | Extraction of Sand, Gravela nd Stones from Khutiya Khola | Kailai |
| 206 | Extraction of Sand, Gravela nd Stones from Godawari, Khairala and Mohana | Kailai |
| 207 | Extraction of Sand, Gravela nd Stones from various rivers | Kapilbastu |
| 208 | Extraction of Sand, Gravela nd Stones from various rivers | Kapilbastu |
| 209 | Extraction of Sand, Gravela nd Stones from various rivers | Kapilbastu |
| 210 | Extreaction of SG&S from Ratuwa and Mawa River | Ilam |
| 211 | Extreaction of SG&S from Mai and Biring River | Ilam |
| 212 | Baglung - Ghodabadh | Baglung |
| 213 | Dhorchhar - Chinali Road | Salyan |
| 214 | Bhatkepati - Nagarkot Road | Bhaktapur |
| 215 | Jaldevi Landfill Site, bharatpur | Chitawan |
| 216 | Extraction of Sand, Gravela nd Stones from Sunjhoda River | Morang |
| 217 | Extraction of Sand, Gravela nd Stones from Gachhiya River | Morang |
| 218 | Extraction of Sand, Gravela nd Stones from Lohandra River | Morang |
| 219 | Extraction of Sand, Gravela nd Stones from Mawaa River | Morang |
| 220 | Extraction of Sand, Gravela nd Stones from Sunjhodaa River | Morang |
| 221 | Mandredobhaan - Koshbhanjyang Road | Okhaldhunga |
| 222 | Karkineta - Lunkhu Road | Parbat |
| 223 | Durlung - Salijaa Road | Parbat |
| 224 | Naduwa - Radijyula Road | Rukum |
| 225 | Extraction of Sand, Gravela nd Stones from Bagmati River | Sarlahi |
| 226 | Extraction of Sand, Gravela nd Stones from Lakhandehi River | Sarlahi |
| 227 | Extraction of Sand, Gravela nd Stones from Phuljor/Kalinjor River | Sarlahi |
| 228 | Extraction of Sand, Gravela nd Stones from Banke River | Sarlahi |
| 229 | Pipalmadhii - Karmaiya Road | Sindhhuli |
| 230 | Naubise-Chhautara-Melamchi Road | Sindhupalchowk |
| 231 | Dharapani-Rupsepani-Jibjibe-Sarshyu | Rasuwa |
| 232 | Satdobato-Bhandare-Thulogaun-Sanogaun-Karumryang-Haaku Road | Rasuwa |
| 233 | Tribeni - Gurans Suspension Bridge | Sindhhuli |
| 234 | Rosi Khola 1 Bridge | Kabhrepalanchowk |
| 235 | Rosi Khola 2 Bridge | Kabhrepalanchowk |
| 236 | Rosi Khola 3 Bridge | Kabhrepalanchowk |
| 237 | Ambote Khola Bridge | Kabhrepalanchowk |
| 238 | Refuse Drive Fuel | Lalitpur |
| 239 | Phapu River Bridge | Ramechap |
| 240 | Palati River Bridge | Ramechap |
| 241 | Haluwa River Bridge | Ramechap |
| 242 | Chatiwane River Bridge | Ramechap |
| 243 | Sukajor River Bridge | Ramechap |
| 244 | Manthali - Dhobi Road | Ramechap |
| 245 | Marin Khola Bridge | Sindhhuli |
| 246 | Deujor Khola Bridge | Sindhhuli |
| 247 | Ancho River Bridge | Sindhhuli |
| 248 | Mehesweta Bridge | Sindhhuli |
| 249 | Chandula River Bridge | Sindhhuli |
| 250 | Tamornii River Bridge | Sindhhuli |
| 251 | Thakur River - 1 Bridge | Sindhhuli |
| 252 | Thakur River - 2 Bridge | Sindhhuli |
| 253 | Thakur River - 3 Bridge | Sindhhuli |
| 254 | Thakur River - 4 Bridge | Sindhhuli |
| 255 | Kuruwa Khola Bridge | Sindhhuli |
| 256 | Talko Khola Bridge | Sindhhuli |
| 257 | Kolta Khola Bridge | Sindhhuli |
| 258 | Besare Khola Bridge | Sindhhuli |
| 259 | Dhamire Khola Bridge | Sindhhuli |
| 260 | Jigiha Khola Bridge | Sindhhuli |
| 261 | Dhansari Khola Bridge | Sindhhuli |
| 262 | Andheri Khola Bridge | Sindhupalchowk |
| 263 | Khalte Khola Bridge | Sindhupalchowk |
| 264 | Tipeni Khola Bridge | Sindhupalchowk |
| 265 | Mahadev Khola Bridge | Sindhupalchowk |
| 266 | Handi Khola Bridge | Sindhupalchowk |
| 267 | Extraction of Sand, Gravela nd Stones from Gudurung, Bankhola and Bhangalaa rivers | Arghaakhachi |
| 268 | Extraction of Sand, Gravela nd Stones from Kondre, Batheni and Toribari rivers | Arghaakhachi |
| 269 | Extraction of Sand, Gravela nd Stones from Surya, Baagi, Jare, Sisne and Durbang rivers | Arghaakhachi |
| 270 | Extraction of Sand, Gravela nd Stones from Dudhaura, Balgangaa, and Pashaha River | Bara |
| 271 | Extraction of Sand, Gravela nd Stones from Lal Bakaiya, Dhansar and Bhamaraa | Bara |
| 272 | Khaar - Khalangaa Road | Darchula |
| 273 | Kudari-Taampti-Toplaa Road | Jumla |
| 274 | Extraction of Sand, Gravela nd Stones from Mahakaali Khola | Kanchanpur |
| 275 | Extraction of Sand, Gravela nd Stones from Mahakaali Khola (Chauki Sotaa Kshetra ) | Kanchanpur |
| 276 | Extraction of Sand, Gravela nd Stones from Belwa, Sukawel and Agiya | Kapilbastu |
| 277 | Extraction of Sand, Gravela nd Stones from various rivers | Kapilbastu |
| 278 | Extraction of Sand, Gravela nd Stones from Rato Khola | Mahottari |
| 279 | Extraction of Sand, Gravela nd Stones from Rato Khola | Mahottari |
| 280 | Extraction of Sand, Gravela nd Stones from Banke Khola | Mahottari |
| 281 | Chhame - Khangsar Road | Manang |
| 282 | Trishule-Hattikharka-Arkhaule-Jitpur | Dhankuta |
| 283 | Simikot-Hilsha Road | Humla |
| 284 | Baguwa-Pyutar-Ashrang | Lalitpur |
| 285 | Extreaction of SG&S from Samari, Kolpu and Salakhu Rivers | Nuwakot |
| 286 | Bhokraha - Prakashpur-Rajbash Road | Sunsari |
| 287 | Extreaction of SG&S from Various Rivers | Surkhet |
| 288 | Sulichaur- Badachaur Namjaa Road | Rolpa |
| 289 | Sahidmarg-Talbang-Rak | Rolpa |
| 290 | Jhumruk River Road Bridge | Pyuthan |
| 291 | Various rivers | Okhaldhunga |
| 292 | Indrawati River | Sindhupalchowk |
| 293 | Thalaha-Batule-Aulatari Road | Jajarkot |
| 294 | Kalebudeli-Limba | Panchthar |
| 295 | Chainpur - Barhabise Road | Sankhuwasabhaa |
| 296 | Chainpur - Guphapokhari Road | Sankhuwasabhaa |
| 297 | Khangsang - Khurkot Road | Sindhhuli |
| 298 | Augadhi - Hilekharka | Sindhhuli |
| 299 | Hilekharka - Humjaa | Sindhhuli |
| 300 | Hilsa - Simikot | Humla |
| 301 | Khalanga - Rimna | Jajarkot |
| 302 | Jaleswor Landfill Site | Mahottari |
| 303 | Barbote-Koshbhanjyang Road | Okhaldhunga |
| 304 | Extraction of Sand, Gravela nd Stones from Lungii, siling, Rapti and Sarahi Rivers | Arghaakhachi |
| 305 | Extraction of Sand, Gravela nd Stones from Khageri, Jugedi and Darhechowk River | Chitawan |
| 306 | Extraction of Sand, Gravela nd Stones from Pampa, Laharaa, Kayar and Yangbung River | Chitawan |
| 307 | Extraction of Sand, Gravela nd Stones from various ghats of Karnali River | Dailekh |
| 308 | Extraction of Sand, Gravela nd Stones from Lohare and Chhamghaat River | Dailekh |
| 309 | Extraction of Sand, Gravela nd Stones from various rivers | Rukum |
| 310 | Gilbang-Chhinkhet-Naduwa Road | Rukum |
| 311 | Sisneri - Dhungekhani | Nuwakot |
| 312 | Kaalikaasthaan - Jibjibe | Rasuwa |
| 313 | Chilime - Tatopani Road | Rasuwa |
| 314 | Kalikasthaan - Bhanjyang Dhunge | Rasuwa |
| 315 | Dharapani - Rupseni | Rasuwa |
| 316 | Banuwa - Karmidanda Road | Rasuwa |
| 317 | Sulichaur - Thawang | Rolpa |
| 318 | Musikot-Chaurjahari | Rukum |
| 319 | Musikot - Chunbang | Rukum |
| 320 | Putalibazar Landfill Site | Shyangja |
| 321 | Barhabishe - Atichaur Road | Bajura |
| 322 | Rajarani - Budhabare Road | Dhankuta |
| 323 | Extraction of Sand, Gravela nd Stones from Bhotekoshi and Indrawati rivers | Kabhrepalanchowk |
| 324 | Extraction of Sand, Gravela nd Stones from Vriou Rivers | Kaski |
| 325 | Ghyampetol-Bathaabhanjyang Road | Kathmandu |
| 326 | Extraction of Sand, Gravela nd Stones from Manahari River | Makawanpur |
| 327 | Extraction of Sand, Gravela nd Stones from Agraa River | Makawanpur |
| 328 | Extraction of Sand, Gravela nd Stones from Vriou Rivers | Nuwakot |
| 329 | Extraction of Sand, Gravela nd Stones from various rivers | Sunsari |
| 330 | Extraction of Sand, Gravela nd Stones from Vriou Rivers | Udayapur |
| 331 | Chyamsingh-Amaldol-Naala Road | Bhaktapur |
| 332 | Extreaction of SG&S from Tamakoshi River | Dolakha |
| 333 | Saghutar-Madanpur-Laxmipur-Gherabari Road | Jhapa |
| 334 | Martadi - Laiphu Road | Kalikot |
| 335 | Approved IEE Report | Kathmandu |
| 336 | Simpani-Bhandareghat Road | Khotang |
| 337 | Extreaction of SG&S from Kaligandaki River | Palpa |
| 338 | Extreaction of SG&S from Nisdi and Dumre River | Palpa |
| 339 | Extreaction of SG&S from Sangjen River for hydropower construction | Rasuwa |
| 340 | Extreaction of SG&S from Mailung River | Rasuwa |
| 341 | Musikot-Salle-Gilwang Road | Rukum |
| 342 | Babai - Mankhola River | Bardia |
| 343 | Mangalbare-Dhushreni-Gajurmukhidham-Ibhang | Ilam |
| 344 | Dalchoki - Ikudol Road | Lalitpur |
| 345 | Lchyang - Parchyang Agriculture Road | Rasuwa |
| 346 | Arun - Maya River | Sankhuwasabhaa |
| 347 | Salleri-Tamakhani-Likhu Road | Solukhumbu |
| 348 | Phaplu-Dudhkoshi Road | Solukhumbu |
| 349 | Pattale - Bihibare Road | Solukhumbu |
| 350 | Sukepokhari - Aiselukharka Road | Solukhumbu |
| 351 | Kalebuduli - Durdimba | Panchthar |
| 352 | Pakarbas - galwa road | Ramechap |
| 353 | Rivers | Bhojpur |
| 354 | LakeKharka - Mukli Road | Solukhumbu |
| 355 | Bhandareghat - Phoksingtar | Khotang |
| 356 | Padampokhari | Makawanpur |
| 357 | Bageswori - Urleni | Nuwakot |
| 358 | Inguria and feeder rivers | Palpa |
| 359 | Khormor and feeding rivers | Palpa |
| 360 | Dobhan and feeding rivers | Palpa |
| 361 | Slaughter House | Bara |
| 362 | Police Office-Maadar-Nepal Road | Siraha |
| 363 | Landfill site | Kanchanpur |
| 364 | Bheri and branch rivers | Jajarkot |
| 365 | Various rivers | Bardia |
| 366 | Jugedi Khola | Chitawan |
| 367 | Pampha, Kayar and Thangbubng River | Chitawan |
| 368 | Chormara-Kolhwa Road | Nawalparasi |
| 369 | Sapsu River Bridge | Khotang |
| 370 | Molung Khola Bridge | Okhaldhunga |
| 371 | Bagarkot-Sirad-Rupal | Dadeldhhura |
| 372 | Brhamadev-Jamrani-Aait | Dadeldhhura |
| 373 | Bhatkad - rail Road | Dadeldhhura |
| 374 | Budhi Gandaki River | Gorkha |
| 375 | Seti River Bridge | Kaski |
| 376 | Lohore - Chhamghat-Karnali River | Dailekh |
| 377 | Various rivers | Lamjung |
| 378 | Badigad and other rivers | Gulmi |
| 379 | Package 1 (Banganga Khola and Bhangala Khola) | Arghaakhachi |
| 380 | Ppackage 2(Kondrakhola, Sitkhola and Gadrungkhola) | Arghaakhachi |
| 381 | Package 3 (Raptikhola and Silingkhola) | Arghaakhachi |
| 382 | Package 4 (Ransingkhola and Suraikhola) | Arghaakhachi |
| 383 | Package 5 (Bangkhola,, Jarekhola and Saurya Khola) | Arghaakhachi |
| 384 | Package 6 (Sisnekhola and Durbangkhola) | Arghaakhachi |
| 385 | Package 7 (Lungiwa Khola, Dhauwa Khola, Khayar Bhattikhola, Chorkhola and Sukwelbhwel khola | Arghaakhachi |
| 386 | Sisnekhola, Katuwalkhola, Balimkhola, Hapurkhola and Ghoshkhola | Dang |
| 387 | Jhamke khola, Twangkhola | Dang |
| 388 | Raptinadi and Masota Khola | Dang |
| 389 | Bauligad | Bajhang |
| 390 | Mahakali River - Section A | Kanchanpur |
| 391 | Mahakali River - Secion B | Kanchanpur |
| 392 | Aruna and Jyamire River | Nawalparasi |
| 393 | Khajura, Raipurwa and Giruwari | Nawalparasi |
| 394 | Turiya and branch rivers | Nawalparasi |
| 395 | Turiya and branch rivers (Part 2) | Nawalparasi |
| 396 | Kerunge River | Nawalparasi |
| 397 | Jharahi River | Nawalparasi |
| 398 | Bhumahi, Panwar and Bhaluhi River | Nawalparasi |

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