

कनकाई नगरपालिका नगर कार्यपालिकाको कार्यालय

जामुनबारी, भ्भापा
प्रदेश नं.१, नेपाल



प्रारम्भिक वातावरणीय परिक्षण (IEE) प्रतिवेदन सम्बन्धी सूचना

सूचना प्रकाशित मिति:- २०७९/०३/१६

आ.व. २०७९/८० का लागि कनकाई नगरपालिकाको क्षेत्र भई बहने कनकाई तथा विरिङ्ग नदिको नदिजन्य पदार्थ संकलन तथा बिक्री सम्बन्धी कार्य गर्नका लागि प्रारम्भिक वातावरणीय परिक्षण (IEE) गरी प्रतिवेदन तयार गर्नुपर्ने भएकाले यस कनकाई नगरपालिकाको कार्यालयमा सुचिकृत भएका इच्छुक एवं योग्य फर्म/संस्थाहरुमार्फत सूचना प्रकाशन भएको मितिले १५ दिन भित्रमा दररेट सहित प्रस्ताव पेश गर्न सूचना प्रकाशन गरिएको छ।


वि. प्रमुख प्रशासकीय अधिकृत



Terms of Reference

ToR for Consultancy Services for Initial Environmental Examination of following Rivers:

1. Biring River
2. Kankai River

(Note: The consultants must submit proposals for each river separately) *

1. Introduction

Kanakai Municipality would be responsible to meet the cost of this Environmental Study. The objective of this project is to extract sand/gravel from Kankai and Biring River. The consultancy service will be procured in accordance with Public Procurement Act 2006, Public Procurement Regulation 2007 and Public Works Directives 2002. Now, the Kanakai Municipality, Jamunabari, Jhapa has invited Technical and Financial proposal from the interested consultants listed in Kanakai Municipality for the year 2078/79 for the said job.

S.N.	Name of the Project	Municipality/District
1	Preparation of Initial Environmental Examination (IEE) for the extraction of sand/gravel from the Biring River.	Kanakai/Jhapa
2	Preparation of Initial Environmental Examination (IEE) for the extraction of sand/gravel from the Kankai River.	

2. Objective of the consultancy services

The proposed consultancy services intend to carry out Environmental Study as mentioned in Annex 2 Rule 3 of EPR, 2077 for the extraction of sand/gravel. Kanakai Municipality now requires to prepare Initial Environmental Examination (IEE) report before implementation of proposed proposals as mentioned in the Notice. To facilitate Proponent, the Consultant shall prepare a Terms of Reference (ToR) in the format as indicated in Schedule 7 of EPR 2077 and prescribed template. Kanakai Municipality may approve the ToR as submitted or in the revised form. The Consultant is required conducting IEE study based on approved Terms of Reference. The IEE report, thus prepared as per Schedule 11 of EPR 2077 & prescribed template, is also required to be approved from the same authority

3. Scope of Work


The principal services to be provided by the consultants to fulfill the objective of the services are detailed below. However, these services are indicative of the overall tasks to be performed by the consultants. The consultant shall be responsible for carrying out all necessary office and field works including topographical map study, extraction site assessment, geological assessment, necessary testing to prepare ToR and Report, which shall incorporate all the priority issues of work by categorizing them into physical, biological, socio-economic, and cultural aspects of both Beneficial and Adverse types, for both pre-operational stage and operational/ maintenance stages, as per EPA 2076 and EPR 2077.


The consultant shall carry out their services in accordance with accepted professional standards, utilizing sound engineering and economic practices.

3.1 Terms of Reference

The ToR provides guidance to the consultant to prepare the IEE report. The ToR is meant for listing activities to be performed during the preparation of the IEE report with specific guidance including:

- it helps in identifying and describing the issues to be studied;
- give an indication of the team considered necessary for the study;


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- it gives a systematic framework for working procedures;
- it identifies the specific action to be performed;
- main environmental effects of the proposed project, both in the project area and in the surrounding area and the timescale of the impacts;
- conducting the IEE within the existing laws, policies and administrative procedures;
- the mitigating measures needed and how they should be incorporated into the project design;
- the monitoring and evaluation activities that are required to ensure that mitigating measures are implemented and future problems are avoided.


The ToR should follow SMART (specific, measurable, achievable, result oriented and time framed) rule to the extent possible and with due consideration on the legal provisions made on EPA, 2076 and EPR, 2077 and template prescribed by Kanakai Municipality.

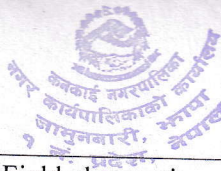
Data collection

The ToR should clearly spell out the methods and techniques, which shall be employed during data collection. For example, the ToR should indicate the data sources and data collection methods, particularly the primary and secondary data. It could also include methods, which shall be used while collecting the information. The ToR may include the following methods as appropriate, and such methods may vary from project to project:

Data Requirement	Methodology
Physical Environment	
Weather and climate conditions, temperature, precipitation	<ul style="list-style-type: none">• Secondary information from Department of Hydrology and Meteorology (DHM), other published literatures
Physiology, Topography, Land use type and land use classification	<ul style="list-style-type: none">• Remote Sensing and GIS (Arc GIS 10.3) analysis on the topographical maps published from the Department of Survey, Google image, site observations
Geology and seismicity rock types	<ul style="list-style-type: none">• Field investigation/direct observation, analysis of geological map as published by Department of Mine and Geology• Study of seismic map of Nepal
Soil type and soil conditions	<ul style="list-style-type: none">• Soil analysis in lab, field observation
Air quality	<ul style="list-style-type: none">• Direct field observation, portable air quality device
Water quality	<ul style="list-style-type: none">• Lab analysis, field observation
Sound/ noise conditions	<ul style="list-style-type: none">• Sound label meter, field observation
Biological Environment	
Trees and Poles, wood volume estimation inside the approach road to the extraction sites	<ul style="list-style-type: none">• Field survey, direct measurement, For wood volume estimation, the gross tree volume shall be calculated by the relation: $V = (G)^2 * L / 16$ (where V is the gross volume of tree, G is grith and L is length).


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प्रशासकीय अधिकृत


पुर्णबिर भण्डारी
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Vegetation Analysis, Ecological status, dominant and associated species, ethno-botanical uses, NTFPs, MPTS, protected species etc.	<ul style="list-style-type: none">• Field observation• Interaction with local stakeholder shall be used for the information regarding the ethno-botanical uses.• Secondary information from Division/ Sub-division Forest Office
Wildlife Study; protected species	<ul style="list-style-type: none">• Key informant survey(key persons like Forest Ranger, Forest Officers, local knowledgeable having the knowledge of wildlife status of the project area shall be asked about the information from available literatures• Direct observation
Socio-economic and Cultural Environment	
Demographic and economic information and information on social services and facilities, gender issues, private properties, crops etc of DIZ(Direct Impact Zone) and IIZ(Indirect Impact Zone)	<ul style="list-style-type: none">• Secondary Information from CBS, District level offices, District Agriculture Office, District Health Office, Municipality profile• Primary information will be obtained wherever the authentic secondary information is not available or not sufficient for the project• Primary data will be collected from DIZ Using household survey
Cultural information	<ul style="list-style-type: none">• FDG, key informant survey, direct observation of cultural and historical sites.


The consultant should include relevant and scientific methods for impact identification, prediction and evaluation methods and method of data analysis to minimize the methodological errors.

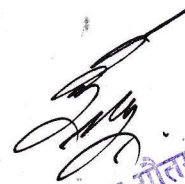
Environmental Impacts

The ToR should clearly indicate the types of environmental issues that should be mentioned in the IEE report. The IEE report should evaluate the impacts of the sand/gravel extraction work on the environment as follows:

- Impact identification
- Impact prediction
- Determination of significant impacts (As per National Environmental Impact Assessment Guideline (NEIA Guideline) 1993)

Matrix method will be used to assess impact of the project on physical, biological and socio economic and cultural environment. The significance of both identified and predicted impacts will be evaluated. Based on the evaluation each significant impact will be further categorized as high, medium and low in terms of magnitude, short term, medium term and long term in terms of duration and local, site specific and regional in terms of extent. The magnitude, extent and duration will be categorized as per National EIA Guideline 1993.


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पिताम्बर गौतम
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Categorization of magnitude, extent and duration

Impact	Category	Score
Magnitude	High(H)	60
	Medium(M)	20
	Low(L)	10
Extend	Regional(R)	60
	Local(L)	20
	Site Specific(SS)	10
Duration	Long Term(LT)	20
	Mid Term(MT)	10
	Short Term(ST)	5

Source: Adopted from National EIA Guideline, 1993

Efforts should be made to include appropriate tools such as checklist, matrices, network, overlay methods, and other enhanced tools for data analysis and prediction of the impacts. The ToR should also include the type of methods that should be used to evaluate the significance of the impacts. This section should clearly indicate the requirements of impact identification, prediction and evaluation on the following aspects or as applicable to the Project:


Physical Issues/Chemical Issues

- Landscape Disturbance
- Change in Morphology, Longitudinal profile of river bed
- Slope Destabilization, Soil Erosion and Landslides
- Damage of physical infrastructures
- Sediment Scouring
- Disturbance in infrastructure
- Air and water pollution
- Sound pollution
- Disturbance in road transportation/ access road
- Temporary disruption of Public utilities
- Contamination of soil
- Issues associated with the transportation of construction materials
- Disturbance in nearby irrigation channel

Biological Issues

- Disturbance in biodiversity
- Possible impacts on flora and fauna
- Impacts on aquatic life and their habitat
- Loss of arable land
- Damage to aquatic habitat and barriers to fish movement


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Socio-economic, Cultural and Religious Issues

- Obstruction to social services and facilities
- Issues on private and public properties
- Issues on cultural, religious and historical sites
- Issues of Occupational Health and Safety for workers
- Sanitation and health issues for workers
- Influx of workers from outside and social conflicts with external workforce
- Possible exploitation of women and child labor
- Issues related to cultural, religious importance of project site

Mitigation Measures

As mentioned above, the IEE study identifies, predicts, and evaluates the impacts of the sand/gravel extraction work on the environment. The ToR should indicate to document the environmental protection measures, both benefits augmentation measures and adverse impact mitigation measures in the IEE report.

Mitigation is done to avoid, minimize or offset predicted adverse impacts and where appropriate, to incorporate these into an Environmental Management Plan. For each potential adverse impact, the plan for its mitigation at each stage of the project should be documented as this is very important in the selection of the preferred alternatives. The most cost effective and pragmatic mitigation and enhancement measure for all perceived adverse impacts of the identified environmental issues will be identified to minimize the adverse environmental impacts and maximize the beneficial impacts of project implementation.

Adverse and beneficial impacts that are not identified or permitted during the study if later discovered during the operation phases of the proposed project will be explicitly mitigated or enhanced by the proponent.

To overcome any adverse impact by the project, the measure will be categorized as:

- Preventive
- Mitigative
- Compensatory measures

The ToR should reflect to encourage the proponent to include benefit augmentation measures and mitigation measures during operational/maintenance stages. Each impact should be evaluated in terms of its significance. Environmental mitigation measures (for both beneficial and adverse impacts) should be proposed for significant impact. Environmental protection measures should be included as a part of the Environmental Management Action Plan (EMAP) and may be presented in the matrix form. The IEE report shall contain detail site specific Environmental Management Action Plan identifying and specifying:

- Extraction sites,
- Temporary facilities for the workers such as toilet.
- Stockpiling sites

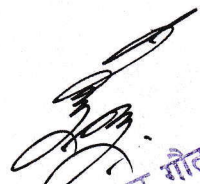
Costs and Benefits of the Project

The ToR should instruct the IEE study team to evaluate the cost and benefit of the project on environmental ground and this should be evaluated through appropriate analysis for operational, and maintenance stages. The analytical information should be included in the main IEE report.

Summary of Cost Benefit assessment shall be given which shall include the followings:

- Cost for Environment Mitigation Measures
- Cost for Enhancement Measures,
- Cost for other Social Support Programs,


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- Cost for Environmental Monitoring,
- Total Proposal Income and revenue generation, and
- Percentage of total Environmental Cost to the Total Proposal Income and revenue Generation

Initial Environmental Examination

The Consultant shall conduct Initial Environmental Examination as per Terms of Reference approved by Kanakai Municipality. After conducting Initial Environmental Examination and preparation of draft IEE report in the format as prescribed in the Schedule 11 of EPR, 2077 & the Consultant should do presentations at Kanakai Municipality Office in presence of all the study team members involved in IEE.

The comments received and issues raised in the presentations shall be included and addressed in the final IEE report.

Proof of the Public consultation conducted at the project site; and Recommendation letter(s) of the concerned ward office and Municipality should be included in the final IEE report.

4. Knowledge Transfer

4.1 The consultants are abided to report and share the progress of works when required by the client. The consultants shall attend the work progress consultation meetings and share the knowledge of achievement. The idea behind the knowledge transfer is also to resolve the problems (if any) during the progress of the works.

5. Necessary Expert (Study Team)

It is estimated that approximately 2.5 person-months of key technical staff within study period will be required for carrying out the services. In addition to the key technical staff mentioned in the team composition, technical support staff, administrative staff and other support staff may be required for completion of the assignment. Key technical staffs, their duties, qualification and experience requirements are given below. Curriculum vitae of the key staff will not be evaluated if he/she does not have the minimum educational qualification.


5.1 Team leader/Environmental Expert

The Team Leader will take the overall responsibility of the assignment in accordance with the ToR and for the conduction and coordination of all professional inputs. He/she will be responsible for coordination with Kanakai Municipality and other concerned offices/stakeholders. He/ she will prepare a site-specific Environmental Management Action Plan for the extraction sites. The Team Leader should have minimum a Master's degree in Environmental Science/Environmental Engineering/Environmental Management or other subjects related to Environmental Study recognized by government of Nepal. He/she should have minimum with 5 years of general experience and 3 years of Specific experience in the Related Field.

5.3 Geologist

Geologist will have the overall responsibility for geotechnical assessment of the extraction sites, surrounding and the slope stability analysis. He/she will identify the unstable areas around the extraction sites and propose the protective measures. He/she will be responsible for providing the geotechnical data of the extraction sites. The Geologist should have minimum a Graduate degree in Geology and preferably a master's degree in Geology/Geo-technical Engineering/Engineering geology. He/she should have minimum 5 years of general experience and 3 years of Specific experience in the Related Field.


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5.4 Hydrologist

Hydrologist will have the overall responsibility for hydrological assessment of the river. He/she will identify the water affected areas around the extraction sites and propose the protective measures. He/she will be responsible for providing the hydrological data of the river as required by other key staffs. The Hydrologist should have minimum a Graduate degree in Hydrology/Water Resource Engineering and preferably a master's degree in Hydrology/Water resource engineering. He/she should have minimum 5 years of general experience and 3 years of Specific experience in the Related Field.

5.5 Socio Economist/Sociologist

The Sociologist will collect the social and economic data of the project area in order to identify the socio-economic baseline information. Based on these data, he/she will be responsible for preparation of issues, identify and predict the respective impacts, propose appropriate mitigation measures, and monitoring mechanism etc. The **Socio Economist/Sociologist** should have minimum a Graduate degree in Sociology/Anthropology/Economy and preferably a master's degree in the field. He/she should have minimum 5 years of general experience and 3 years of Specific experience in the Related Field.

Extra Key personnel should be mobilized to complete the IEE works. Adequate number of support staffs must be included, such as:

- Surveyor
- Technical Assistance (Physio-Chemical)
- Technical Assistance (Biological)
- Technical Assistance (Socio-Economic)
- Account/Admin Staff
- Computer Operator

Note: The above key staff composition and estimated total key staff person-month is client's suggestion. Consultants are advised to propose their own staff composition and staff input requirements for efficient performance of their job as per the Terms of Reference. However, minimum key professional staff to be provided by the consultant should not be less than the numbers mentioned above.

6. Time


Consultant shall commence the work from the date of signing agreement. Responsibilities of the consultant shall continue until the approval of the final report by Kanakai Municipality. Time frame for IEE report preparation for this assignment may take 2.5 months. Time frame for IEE report preparation for this assignment shall be as per:


- a. Submission of draft ToR of IEE report to Kanakai Municipality within 2 weeks from the date of agreement.
- b. Submission of draft IEE report to Kanakai Municipality within 2 months from the date of Agreement Including the approval of ToR by Kanakai Municipality.
- c. Submission of final IEE within 2 weeks from date of draft Report Submission and should incorporate the comments on Draft Report by Kanakai Municipality.

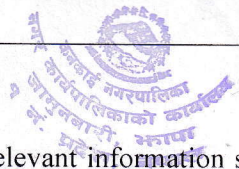
It should be noted that the consultant will need to provide all the technical and support staff needed to carry out their services. The Consultant will also be responsible for providing all other necessary facilities and logistical support for its staff, including accommodation, vehicle, transportation, office equipment, communications, utilities, office supplies and other miscellaneous requirements.

7. Reporting

The consultant shall keep complete records relating to all aspects of the work covered by his staff or service contract if any. Such records shall be available for inspection by Kanakai Municipality Office. Reports required to be submitted by the consultant during the course of his services are as follows:


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7.1 Terms of Reference Reports

The ToR should mention which of the relevant information should be included in the IEE report. As required by the Schedule 7 of EPR, 2077 & template provided by Kanakai Municipality, the ToR must mention for the inclusion of references (cited in the text), annexes, maps, photographs, tables, charts, graphs and the questionnaires & checklists that are to be used during IEE studies. In addition, the ToR should indicate the legal requirement that should be complied by the proponent. For example, the final IEE report should include the information on public Notice, and approved Terms of Reference in the annexes.

The Consultant should submit at least 1 (one) copy of the draft ToR to Kanakai Municipality and after review shall submit 1 (one) copy of Final ToRs to Kanakai Municipality.

7.2 IEE Reports

Consultant shall prepare IEE Report for the sand/gravel extraction work of assigned river. In order to avoid duplication of the information in the IEE report it is desirable to provide a compatible report format. The Report Format should strictly follow the Schedule 11 of EPR, 2077.

The Consultant should submit at least 1 (one) copy of the draft Report to Kanakai Municipality and after review and approval shall submit 1 (One) copy of Final IEE reports to the Kanakai Municipality. The consultant shall submit the final Report within 2.5 months from the date of signing.

7.3 Electronic Copies

The Consultant should submit 1 (one) copies of electronic copies in word format (read and write), in the Compact Disc (CD), which shall include ToR report, IEE Reports and presentation slides(ppt), annexes and photographs.

8. Presentation of the prepared documents

The idea behind this presentation is the active participation and feedbacks from the Kanakai Municipality officers, the concerned ward staffs and other stakeholders of the project. Hence, the Consultant should organize such presentations on the IEE Report with presence of all the team members involved in IEE. The Consultant shall present IEE Report in the specified format and defend to the Kanakai Municipality Office.

The Consultant shall submit at least 1 (One) copy of Reports after incorporating comments and suggestions from the Kanakai Municipality.


These Draft Documents shall be presented, by the consultant, to expert Review Team of Kanakai Municipality with presence of all the team members involved in IEE. The consultant shall incorporate comments and suggestion from expert Review team and submit final Report. Upon approval of the final report; the Consultant is required to submit 1 (one) copy each of the approved ToR and IEE Report to the Kanakai Municipality Office.

9. Mode of Billing and Payment

The Consultant shall submit the running bills in duplicate and the Kanakai Municipality may pay as:


- First Running Bill: 30% of the quoted amount after the approval of Term of Reference for IEE.
- Second Running Bill: 40% (Excluding first running bill) of the quoted amount after submission and Presentation of the Draft Report to Kanakai Municipality.



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पिताम्बर गौतम
उपसचिव
(अधिकृत स्तर दर्शाएँ तह)



- Final Bill: Remaining amount after submission, acceptance and approval of the Final Report and after returning all the documents, maps and reports, if borrowed from the Kanakai Municipality.


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