

EXPRESSION OF INTEREST

For

WATER QUALITY PROFILE MEASUREMENT STUDY

Consulting Firm/Joint Venture:

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.....
.....

Prime Consultant (in case of a JV):

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Employer:
Government of Nepal
Ministry of Population Environment
Department of Hydrology and Meteorology
Naxal, Kathmandu

December 2017



Government of Nepal
Ministry of Population and Environment
Department of Hydrology and Meteorology

Naxal, Kathmandu

Notice No: 2/HD/DHM/2074-75

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Expressions of Interest (EOI)

The Government of Nepal, Department of Hydrology and Meteorology (DHM) invites EOI (Expressions of Interest) for the purpose of short listing the qualified, eligible and experienced Companies/firms and or their joint ventures for **“Water Quality Profile Measurement Study”** Consultancy service.

1. The budget to this purpose has been allocated by the Government of Nepal (GON) for the fiscal year 2074/075.
2. Experienced, eligible and interested Consulting Firms or companies are invited to submit their EOI, either alone or in joint venture with other firms with a certified copy of Consultancy /Company Registration Certificate, VAT and Tax Clearance (2073/74)/ Tax Return Submission receipt for the last fiscal year.
3. EOI documents could be obtained free of cost from DHM upon request during office hour on all government working days within the 15th day of the first date of publication of this notice or can also be downloaded from the website: <http://www.dhm.gov.np>. The instruction to the consultant, prescribed format, evaluation criteria, scope of the work and duration of the study and other details of the project are mentioned in the EOI. Only lead firm may obtained EOI form mentioning the names of all members of Association/JV and submitting Association/JV agreement.
4. Applications for EOI must be clearly marked **“Water Quality Profile Measurement Study”**
5. And shall be submitted in sealed envelopes by companies or their joint venture received by the due date and within the specified time in the presence of the applicant or their authorized representatives. Absence of any applicant (or their authorized representative), however, shall not obstruct or prevent the opening of the EOI in any way, which must be delivered to the following address within the given time below.
Last Date of EOI Submission:- **28/9/2074 12:00 noon**
Date of EOI opening :- **28/9/2074 01:00 pm**
6. Certified evidences of the client reference indicating satisfactory completion of the projects along with the cost of consulting services in NRs and date of completion of the assignment only will be counted.
7. In case the day of submission of the EOI falls on a public holiday, it shall then be submitted on the following working day at same hour. Only the short-listed Consulting Firms shall be invited for RFP (Request for Proposal). During the RFP process, the consulting firm/companies will be selected in accordance with quality and cost Based Selection procedure (QCBS).
8. DHM reserves the right to shortlist any or reject all of the Firms without assigning any reasons whatsoever. Further information or clarification can be obtained from DHM during office hours.

Procurement Unit
Department of Hydrology and Meteorology
Naxal, Kathmandu
E-mail: dhmprocurement@gmail.com
Website: www.dhm.gov.np

“Water Quality Profile Measurement Study”

1. INFORMATION ON THE CONSULTING FIRM

Information shall be provided in the following format. No field shall be left vacant. In case of a joint venture, the same form shall be filled by each of the JV partners separately. The form shall be submitted in the time, date and venue as mentioned in the published notice.

1. General

| Name of Firm | Address | Telephone | Email | Fax | JV Percent |
|--------------|---------|-----------|-------|-----|------------|
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Out of the above list,
will be the Prime Consultant.

2. Financial Capacity

Annual turnover over the last three years are as follows. The auditor’s report/tax clearance certificates are attached.

| Fiscal year | Turnover (Rs) |
|-------------|---------------|
| | |
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3. Overall Experience*

Overall experiences of the firm in relevant work during last ten years are as follows (Work completion certificates are attached).

| Name of Project | Project | Client | Contract amount (excluding VAT) | Year of completion | Description of work carried out |
|-----------------|---------|--------|---------------------------------|--------------------|---------------------------------|
| | | | | | |
| | | | | | |
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4. Specific Experience*

Experiences of the firm in related field during last ten years are as follows. Work completion certificates are attached.

| Name of Project | Project | Client | Contract amount (excluding VAT) | Year of completion | Description of work carried out |
|-----------------|---------|--------|---------------------------------|--------------------|---------------------------------|
| | | | | | |
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* The firm/s shall produce certified evidences of the client reference indicating satisfactory completion of the mentioned projects along with the cost of consulting services in NRs and date of completion of the assignment are required for the consideration of that project for evaluation. Sublet works or assignment as a sub consultant shall not be considered for evaluation.

5. Human Resources

Human Resources in the company

| Staff Member | Details | |
|--------------|---------------------|-------------------|
| | Permanent/part time | Name of personals |
| | | |
| | | |
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7. Other Resources

Other relevant resources available with us are as follows. The office layout, invoice/bill of equipment/vehicle/software/computer is attached.

| Resource | Unit | Total Available | Engaged by Works on Hand |
|----------------------------|------|-----------------|--------------------------|
| Office area | m2 | | |
| Telephone lines | line | | |
| Photocopy, Printers | set | | |
| High capacity Computer | set | | |
| vehicles(Four wheel Drive) | no | | |

Authorized signature:

Seal:

Date:

ANNEX 1: INFORMATION TO THE CONSULTING FIRM

General Information

| | |
|---|--|
| Purpose of inviting the EOI: | The main purpose shall short-list suitable consulting firms for “ Water Quality Profile Measurement Study ” and related products so that proposals could be invited from them only. However, the client may extend the short-list to include additional relevant consulting firms which are capable of giving the desired output. |
| Format and Signing of Application: | Applicant intending to file an application in response to this EOI should submit an “Application together with the duly completed EOI form providing all the information required therein after signing in by Authorized Representative of Consulting Firm or company (in case of Joint Venture, Authorized Representative of Lead Firm) with Company’s seal in every page of EOI forms. |
| Minimum eligibility of the firm: | Registered consulting firms/company; registered at VAT office and tax clearance certificates with minimum 5 years of experience in related field. |
| Deadline for submission of EOI: | at or before 12 Noon 28/9/2074 (NST-Nepal Standard Time) |
| Number of copies to be submitted: | Two |
| Joint Venture: | A firm may apply to be short-listed alone or in joint venture with other firms. However once short-listed, JV partners are unchangeable. |
| Duration of completion: | Duration to complete the works will be 240 days from the signing of the contract agreement. |
| Information from the Client: | In due course of time, the shortlist shall be published on the Client’s notice board, at the website: www.dhm.gov.np . The client shall mail the short-list to each of the firms/JV submitting the EOI and initiate the process of RFP without waiting for the receipt from the firms that they have received the short-list. |

ANNEX 2: EVALUATION CRITERIA**(4) Eligibility Criteria (Pass / Fail)**

| <i>Sr. No.</i> | <i>Eligibility Criteria</i> | <i>Requirement</i> | <i>Compliance</i> | <i>Remarks</i> |
|----------------|---|--|-------------------|----------------|
| 1. | Corporate Registration | Mandatory | Yes/ NO | Pass/Fail |
| 2. | Tax Clearance / Tax Return Submission receipt for the last fiscal year (2073/74) | Mandatory | Yes/ NO | Pass/Fail |
| 3. | PAN/VAT Registration | Mandatory | Yes/ NO | Pass/Fail |
| 4. | Minimum Years of Standing | The applicant or the Lead partner of J/V applicant must have min. 5 years of standing. | Yes/ NO | Pass/Fail |

II) Ranking Criteria (Out of 100%)

| | | |
|--|---|---|
| Experience of Consultant (30 marks) <i>Work, completed during last 5 years</i> | Adequacy of the proposed work plan and methodology (30 marks) | Qualification and Competence of the Key Staff for the Assignment (40 marks) |
| Experience of the Firm. (30 marks) 3 Projects Work Experience of firm in consultancy service of water quality. | Presentation of General Approach and Methodology (30 marks) 1. Approach & Methodology - 15 marks 2. Work Plan & Organization Capacity - 15 marks | Related Technical Human Recourse (40 marks) 1. Team Leader (Sr. Chemist) - 1 person – 15 marks 2. Chemist - 1 person – 15 marks 3. Lab Technitian - 2 person – 10 marks |

NOTE: The consultant should score more than 60 percent on the overall ranking criteria as mentioned above to qualify for short listing.

Terms of Reference for
WATER QUALITY PROFILE MEASUREMENT STUDY

1. Introduction:

The Department of Hydrology and Meteorology (DHM) under the Ministry of Science, Technology and Environment, Government of Nepal, has initiated the water quality monitoring in Kathmandu valley, Seti River and lakes in Pokhara valley since 1992 with the support of German project. Initially it was three times a year in Kathmandu valley and two times in Pokhara valley but after few years, it could not be in regular basis due to budgetary constraint. In 2007, there was one year Kaprimo project (Kathmandu participatory River monitoring) in DHM. During that period, water quality monitoring of Bagmati, Bishnumati, Dhobikhola, Manahara, Hanumante and also tributaries of Bagmati and Bishnumati rivers were carried out three times a year outside core city and monthly monitoring within core city area. A new monitoring activity like installation of water quality hoarding board was initiated from 2008 to 2010. Twelve water quality hoarding boards have already been placed including lake water quality. Apart from this, two day's water quality diurnal variation of Bagmati and Narayani rivers water quality profile were carried out. The Department realizes that there is need of a manual for water quality monitoring and analysis system which are adopted by the department. The standard operating procedures used by the Department for selection of sampling site, sampling process, field measurements, transportation of samples from field to laboratory, instrument calibration.

Water is the most important natural resources for all living organism. It plays a vital role in our life as it is used for domestic supply, industries and agriculture in all over the world. Monitoring of the quality of water for safe use requires a continuous check on hygienic, physical, chemical and biological factors in order to get information about suitability of water and set standard for the intended purposes, strengthening of water quality and sediment monitoring system is very important though is also helpful to estimating the hydrological engineering plants.

The collection and continuous supply of reliable data and historical data are basic requirements for acquiring information for planning and water quality management purposes.

2. Objectives of this study:

The main objective of this study is to select the major river which is important from the respect of ambient water quality as well as water pollution and monitoring the water quality profile throughout the year at different months and different Sites in that river which includes the assimilation of the water quality data to analyze the major pollutants, identify the sources of pollution along with the study of back ground water quality with dissemination of the analyzed findings to the public to strengthen the awareness level.

3. Specific objective of this study:

The other specific objectives of this study are as follows but not limited to:-

- To collect the long term data on water quality with respect to physical, chemical and biological parameters.
- To initiate the water quality analysis study from the perspective of urban water pollution various rivers in periodic manner and continue the measurement of back ground water quality.
- To establish the relationship between different water parameters like temperature, conductivity, DO etc.
- To find out the change with the long term data analysis.
- To synthesize the water quality data to analyse the reasons for change of water quality.
- To estimate the future impacts on water induced hazards with respect to chemical properties.
- To prepare the documented record of water quality and monitoring with respect to previous records.
- To aware the general public about water quality and policy makers and related social aspects for future management of policies regarding water quality and sediment.
- To find out the variation in water quality measurement in different selected river or lakes, which greatly important for hydrological engineering purpose such as hydropower plants.

4. Scope of study of this study:

The main scopes of the study are as follows.

- Collection of the water samples preferably at starting of the month (as given in table) form the predetermined sites using the standard method followed by chemical as well as biological analysis and one litre of sample form each site should be provided to DHM.
- Analysis of the pre-defined physical chemical and biological parameters as given in section 5 (deliverables) of that water sample using internationally accepted tools and techniques like recent APHA guidelines or any equivalent methods.
- Synthesis and complete analysis of the observed data with description of sample collection, environment safety, environmental pollution, ambient water quality, In situ physical chemical parameters described along with cause and effect of the observed data.
- Presentation of the applied procedures for chemical and biological analysis by demonstrating or presenting during laboratory analysis.
- Preparing the draft and final report on hard and soft copy including above discussion and submission of the final report after comments by DHM Technical committee.
- Consultant shall present report and result in DHM and shall incorporate comments by DHM.
- Report must be submitted as per the study given in Table 1.

5. Deliverables:

1. Inception Report

2. Final Report with the complete analysis of Following parameters for water quality of each specified location of (**Section 6: Sites**). pH, Conductivity Water temperature and Air temperature are to be measured on sampling sites on real time.

- | | |
|----------------------|--------------------|
| 1) pH | 9) Nitrate |
| 2) Water temperature | 10) Iron |
| 3) Air temperature | 11) Chromium |
| 4) Conductivity | 12) Lead |
| 5) Dissolved Oxygen | 13) Phosphorous |
| 6) BOD | 14) Total Coliform |
| 7) COD | 15) E. Coli |
| 8) Ammonia | |

6. Sites

Kathmandu Valley:

Bagmati: Sundarijal, Gaurighat, Khokana

Manahara: Shakhu, Mulpani, Balkumari

Taudaha: One outlet point

Outside Kathmandu Valley

Narayani: Devghat, Narayani bridge, Harkapur Temple

Tinau: Jhumsa, Tinau bridge, Aanandaban

Karnali: Karnali Chisapani, Asaraghat

Fewataal: Two Points

Begnastal: One points

Seti: PN collage, Seti dobhan

7. Sampling Frequency

1. Within Kathmandu Valley: Once a Three Month
2. Outside Kathmandu Valley: Once a Month

8. Methodology

The methodology mainly includes the following but not limited to:

Suitable sites selected for the sample collection are listed in Section 6: Sites. The physical parameters like pH, Conductivity Water temperature and Air temperature are to be measured at the site and sample should be collected from site for analysis chemical parameters. The collected sample should be transported to the well equipped laboratory by keeping in ice box.

Before the analysis of sample, the inception report involving detailed technique to be followed should be submitted. The chemical analysis should be started only after the verification of sample collection and required comment and permission by DHM Technical Committee. During the laboratory analysis DHM experts shall visit and observe the procedure. After the analysis of Chemical parameters, draft report should be submitted and presented to technical committee of DHM. And after the discussion

and comment on that report and result by the technical committee of DHM corrected final report should be prepared and submitted.

9. Human Resource:

DHM has estimated the requirement of following professionals and their engagement duration to undertake the Laboratory analysis. DHM staff or expert might be involved for observation during the sample analysis if necessary.

- i. Chemist
- ii. Lab Technician
- iv. Lab Boy
- v. Supporting Staff

10. Work Schedule:

Schedule of Implementation and Schedule of Payment of this study will be as follows

10.1 Schedule of Implementation

The time schedule for the completion of the report is as follows:

Table-1: Deliverables schedule of the work.

| S.N. | Description | No. of Reports/ work to be Submitted / accomplished | Due date for work |
|------|---------------------------------|---|---|
| 1 | Submission of Inception Report | 3 Copies | 10 days after the date of agreement. |
| 2.. | Sample Collection and Analysis. | For all samples | Within the second week of each month starting from Mansir 2074. |
| 3. | Draft Report | 3 Copies | within second week of Jestha |
| 4 | Presentation | Of a draft report | within third week of Jestha |
| 5 | Final Report | 5 Bind copies with CD. | Within first week of Asar. |

10.2 Schedule of Payment

Table-2: Schedule of Payment for this work

| S.N. | Description | % of Contract Amount |
|------|--|----------------------|
| 1. | Submission and approval of Inception Report. | 10% |
| 2. | Submission and approval of Draft Report | 30% |
| 3. | Submission and approval of Final Report | 60% |

In case of the incompleteness of the task or pre-termination of the contract by any means, payment shall be made on the basis of the task completed during which DHM Technical Committee reserves the right to decide the portion of the work completed and amount to be paid.

11. Output:

11.1) Three copies of the Inception Report incorporating comments by DHM should be submitted and presented to DHM by concerned experts no later than 10 days after the date of agreement. This report shall contain the finalized work program and a general approach and methodology that the Consultant proposes to conduct the study. DHM will review the inception reports submitted by the consultant and will send its comments if any to the consultant. The consultant shall resubmit two copies of revised Inception Report after incorporating DHM comments.

11.2) Sample Collection and laboratory analysis should be accomplished within the second week of each month starting from Mansir 2074. Collected samples shall be transported to the laboratory. Laboratory analysis shall be accomplished by standard procedures.

11.3) Three copies of Draft Reports Including Chemical analysis should be prepared and submitted to DHM within 2nd week of Jestha 2075. The Draft Final report of study shall be precise and should include the data observed and analysis which reflects the clear vision on policies and acts on hydrology and meteorology as formulated in the objective and scope of work.

11.4) Presentation of Final Draft: Firm shall present the draft of final report to the experts and officials on DHM within 3rd week of Jestha 2075.

11.5) Five copies of Final Reports and electronic version (CD) shall be prepared and submitted to DHM within 1st week of Asar, after the comments received from DHM. The report of study shall be prepared including all the data, analysis, findings, relating to objective and scope of work and submitted by incorporating all the comments and suggestion from DHM. The report of any stage of work shall be according to the standard of DHM. Prior to the submission of the report of any stage of work, the consultant is required to get the approval of the preceding report by DHM. Progress Report may be asked from time to time during the course of the study.