

# EXPRESSION OF INTEREST

For

*Preparation of Bathymetric map with Topographic Survey of Kawache  
(Kopuche) Lake of Kaski to update its inventory*

## **Consulting Firm/Joint Venture:**

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.....  
.....

## **Prime Consultant (in case of a JV):**

.....  
.....

Employer:

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

February 2017



**Government of Nepal**  
**Ministry of Population and Environment**  
**Department of Hydrology and Meteorology**  
Naxal, Kathmandu  
Notice No: 3/HD/DHM/073-74  
First Date of Publication: 26/10/2073

**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 **“Preparation of Bathymetric map with Topographic Survey of Kawache (Kopuche) Lake of Kaski to update its inventory”** works.

1. The budget to this purpose has been allocated by the Government of Nepal (GON) for the fiscal year 2073/074.
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 (2072/73)/ 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 15<sup>th</sup> 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 **“Preparation of Bathymetric map with Topographic Survey of Kawache (Kopuche) Lake of Kaski to update its inventory”** 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:- 12/11/2073 & 12:00 noon

Date of EOI opening :- 12/11/2073 & 01:45 pm

5. 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.
6. 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).
7. 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: [shivaamet@gmail.com](mailto:shivaamet@gmail.com), [spd\\_acharya@yahoo.com](mailto:spd_acharya@yahoo.com), [cbhetuwal@yahoo.com](mailto:cbhetuwal@yahoo.com)  
Website: [www.dhm.gov.np](http://www.dhm.gov.np)

**Preparation of Bathymetric map with Topographic Survey of Kawache (Kopuche) Lake of Kaski to update its inventory**

**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

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.)

**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

**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

\* 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

## 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 **Preparation of Bathymetric map with Topographic Survey of Kawache (Kopuche) Lake of Kaski to update its inventory** 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.
- Deadline for submission of EOI:** at or before 12 Noon (NST-Nepal Standard Time) within 12/11/2073
- 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 90 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](http://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****(I) 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 (2072/73)	Mandatory	Yes/ NO	Pass/Fail
3.	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. 5years of standing.	Yes/ NO	Pass/Fail

**II) Ranking Criteria (Out of 100%)**

<b>General Experience of the firm (10 marks)</b>	<b>Specific Experience of the firm (60 marks)</b> <b>Excellent = 100%, Very Good = 80%, Good = 60%, Acceptable = 40%, not acceptable = 0</b>	<b>Organization Profile of the firm: in terms of clarity in role and responsibility (15 marks)</b>	<b>Professional competency of the firm Commitment for availability of adequate number and /or experience of professionals as required by TOR (15 marks)</b>																		
Years of Experience in the field of Hydrology (4 marks)  Number of assignments carried out in the field of hydrology during last 5 years (6 marks)	Specific experience in bathymetric survey for developing bathymetric maps and topographic survey  (Number of assignments, Duration of assignment , volume of assignments in last five years will be counted)	<table border="0"> <tr><td>Excellent</td><td>100%</td></tr> <tr><td>Very good</td><td>80%</td></tr> <tr><td>Good</td><td>60%</td></tr> <tr><td>Acceptable</td><td>40%</td></tr> <tr><td>Not Acceptable</td><td>0%</td></tr> </table>	Excellent	100%	Very good	80%	Good	60%	Acceptable	40%	Not Acceptable	0%	<table border="0"> <tr><td>Excellent</td><td>100%</td></tr> <tr><td>Very good</td><td>80%</td></tr> <tr><td>Good</td><td>60%</td></tr> <tr><td>Acceptable</td><td>40%</td></tr> </table> <p>(Note: Permanent staff – 100%, Temporary staff- 80%)</p>	Excellent	100%	Very good	80%	Good	60%	Acceptable	40%
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NOTE: The consultant should score more than 60 percent on the overall ranking criteria as mentioned above to qualify for short listing

## **Project Description:**

### **Background**

The government of Nepal started hydrological and Meteorological activities in an organized manner in 1962. Hydrology and Meteorology related organization remained under various Department/Ministry at different time. In 1988 this organization became a separate department with the name Department of Hydrology and Meteorology (DHM).

The Department of Hydrology and Meteorology as titled has principally two branches namely Hydrology and Meteorology. The Hydrology division has been maintaining around 190 hydrological stations all over the country among which almost 100 stations are primary stations. Beside staff gauges some of the stations still have crest stage gauges and water level recorders to measure water level fluctuations in the rivers. Most of the stations have cableway to measure discharge in the river to know the variation of flow during the year. Around 40 hydrological stations has already been automated and others are also in the process of being automatic gradually. Besides monitoring the rivers, snow and glaciers; the hydrology division has also been initiating the studies on lakes to establish a database of the lakes of Nepal.

The Lakes are basically natural resources available for multiple uses. A lake consists of two distinct parts, the basin and the water body. A lake, in other words may be defined as an inland basin filled with water. The water level of a lake is a function of the volume contained in the lake basin. The rate of change of water volume is controlled by the rate at which water enters the basin from all sources minus the rate at which the water is lost by evaporation from its surface and discharged by surface as well as subsurface effluents. The dynamic process of lakes also reflects in a part of its own previous history.

There are lots of lakes within the country from the very low altitudes to the high Himalayas. All the lakes that are located above 4000 meters above the mean sea level are termed as glacial lakes and below that level generally glacial lakes are not found. Despite this general concepts a few years prior this Kawache Lake which is located at just a 2546 meters above m.s.l. has been explored. Due to this unique characteristics, this lake has attracted the interest of different stakeholders including researchers, tourism sectors, educational institutes, government agencies and many more.

Since last couple of years DHM has been regularly involved in preparing the Bathymetric map of different lakes of Nepal and for this fiscal year also this program has got continuity. In this context due to its distinctive features DHM has planned to prepare Bathymetric map of Kawache Lake in this fiscal year and intends to invite the services of local consultants for the following study.

### **Objective**

The main objective of the study is to carry out a detail Bathymetric survey with Topographic Survey of the lake and obtain related information. In particular, the present study is aimed to:

- Carry out Bathymetric survey with Topographic Survey of the lake.

### **Scope of work**

The detail scope of the works is as following:

- To carry out water depth survey of the lake
- To find out the area, volume and other detail structure of the lake
- To conduct topographical survey of the lake surroundings up to 30 meter strip
- To identify different reference points and locate them on the map of the lake
- To find out relation between the elevation and the storage of the lake
- To find out the rate of water & sediments inflow into the lakes and again the rate of water & sediments outflow from the lakes to establish a relation between them
- To fix a temporary bench mark at proper site of the lakes for reference
- To fix a staff gauge at the outlet of the Lake for reference



- To install an acrylic hoarding board (size 4 feet X 3 feet with 8 feet support stands and roof) at the lake giving information about the findings of the study
- Prepare digital GIS map of lake with fine resolution.
- While surveying the lake at least one depth should be taken at least on 20 m X 20 m grid
- For verification, at least 2% of the total measuring points should be measured manually with a tag reel.
- Compile different studies done till date by different organizations on these lakes and compare and validate with the current findings

## Area of Study

Down to the Annapurna II mountain range exists Kawache Glacial Lake which is yet known lowest glacial lake in Nepal Himalayas with altitude of about 2546 meter above sea level. The lake is also famous in tourism industry of Kaski district. With walking distance of around 8 hours uphill from Sikles village, it lies at latitude of 28° 26' 45" N and longitude of 84° 70' E. The tentative areal coverage of the lake is 10 hectares which spreads out approximately 300 m East-West and 400 m North-South direction with around 40 m depth.



The lake is the source region for Upper Madi River where hydropower projects are also developing. The lake monitoring is also should looked upon in context of global

warming and climate change. The preliminary development of inventory is required and frequent monitoring of the lake is essential because it is most prone to melting impact at such a low altitude in comparison to other glacial lakes in Nepal Himalayas.

## Involvement of DHM staffs

### During field visit

During the field visit of the survey the consultants have to incorporate 3 technical staffs from DHM in their team to develop the skills of the DHM staffs about the bathymetric survey and also to receive inputs, suggestions and experiences of DHM officials to enhance the survey work.

### During report preparation

During all phases of report preparation (inception, field and draft) the consultants has to present the report to a panel including hydrologists, other officers from DHM and invited professionals (third party) at DHM. The DHM experts and the invited professionals (third party) shall then review the reports and give their comments, suggestions and feedbacks within few days which should be incorporated by the consultants in their report. The professionals shall be invited with joint discussion between the consultant and DHM from the related field.

## Methodology

The methodology mainly includes the following but not limited to:

Total area of the lake should be divided in to the 20 m X 20 m grids and fix the survey lines for depth measurement provided at least five points per grid (four points at corner and one point at the center of the grid).

- Locate them in the map and in the field
- Fix a temporary bench mark

- Fix a staff gauge at the outlet of the lake
- Carry out measurements for water depth, area, volume & other detail structure of the lake and also the rate of water & sediments inflow and outflow.
- Conduct topographical survey of the lake surroundings up to 30 meter strip (For interpolation of contours, the counter should be of an interval of 2m to 5m; whichever is appropriate as per field condition)
- Compile different other research and study on those lakes for comparisons and validation
- Analyze data
- Prepare Bathymetric map
- Find out relation between elevation and storage
- Find out relation between the inflow/outflow of the water and the sediment
- Determine major morpho-metric parameters including lake area, lake volume, maximum length, effective length, maximum width, effective width, mean width, maximum depth, mean depth, hypsographic curve, median depth, quartile depth, relative depth, slope, contour line length, lake bottom roughness
- Prepare acrylic hoarding board and fix it in the appropriate site
- Prepare reports (3 copies of Inception report, 3 copies of field report, 3 copies of draft final report and 5 copies of final report with electronic version)

Nevertheless, the consultant could add other tasks as deemed necessary in order to complete the works as required.

### **Human Resources / Schedule**

The following technical experts and assistants are envisaged for the completion of the study:

- |   |            |
|---|------------|
| • Team Leader (Sr. Hydrologist)               | - 1 person |
| • Hydrologist / Civil Engineer / Sr. Surveyor | - 2 person |
| • Meteorologist                               | - 1 person |
| • GIS Specialist / Cartographer               | - 1 person |
| • Sub Engineer / Surveyor                     | - 2 person |
| • Office Assistant                            | - 1 person |

Along with the bio-data of the experts; the consultant should also submit the following declaration document from the experts:

- a) Nature of their involvement in this project (part time or full time)
- b) Letter of commitment of work for this project (duly signed)

### **Work Schedule**

The duration of the study is three months, effective from date of consultancy agreement.