

**Alternative Energy Promotion Centre (AEPC)
Renewable Energy for Rural Livelihood (RERL)**

REQUEST FOR PROPOSAL FOR CONSULTING SERVICES

Title of Consulting Services

Conduct detail feasibility study of Micro Hydro Operated Lift Irrigation (MHOLI) system in selected MHPs in Rukum District

Project Name : Renewable Energy for Rural Livelihood (RERL)

Office Name : Alternative Energy Promotion Centre (AEPC)

Office Address : Khumaltar Height, Lalitpur, Nepal

Financing Agency: RERL

Date of RFP Issue: 22 April 2018

Deadline for Submission of RFP: 28 April 2018

Date.....

Dear Sir/Madam

Subject: Conduct detail feasibility study of Micro Hydro Operated Lift Irrigation (MHOLI) system in selected MHPs in Rukum District

Please study the evaluation criteria and provide the relevant information

To enable you to submit a proposal, attached are:

- i. Instruction to OfferorAnnex I
- ii. General Terms and Conditions of the ContractAnnex II
- iii. Proposal Submission FormAnnex III
- iv. Financial Proposal Submission Form.....Annex IV
- v. Terms of Reference (TOR).....Annex V

Your offer comprising of both a technical proposal and a financial proposal, in a separate sealed envelopes, should reach the following address no later than **28 April 2018**

The National Programme Manager
Renewable Energy for Rural Livelihood (RERL)
Khumaltar Height, Lalitpur, Nepal
Phone: 01 5539390, 5539391, Fax: 01 5542397
Website: <http://www.aepc.gov.np/rerl/>
Email:

If you required additional information, we are ready to provide information, but any delay in providing such information will not be considered a reason for extending the submission date of your proposal.

Yours sincerely,

Mr. Satish Gautam
National Programme Manager(NPM)

A.Introduction

1. General

The purpose of this RFP is to invite technical and financial proposals from the potential consulting firms who have skill, knowledge and expertise for " **Conduct detail feasibility study of Micro Hydro Operated Lift Irrigation (MHOLI) system in selected MHPs inRukum District**".

2. Cost of Proposal

The offeror shall bear all costs incurred duringsubmitting the proposal. The offereor shall bear all costs associated with the preparation and submission of the proposal. RERL will in no case be responsible or liable for those costs, regardless, of the conduct or outcome of the evaluation of this proposal.

B. Solicitation Documents

3. Contents of solicitation documents

Proposals must offer services for total requirement. The Offeror is expected to examine all corresponding instructions; forms, terms and specifications contained in the solicitation Documents. Failure to comply with these documents will be at the offeror's risk and may affect the evaluation of the Proposal.

4. Clarification of solicitation documents

The offerors requiring any clarification of the Solicitation Documents can forward their queries in the following email address

Email: sureshrerl@gmail.com

5. Amendment of solicitation documents

At any time prior to the deadline for submission of proposals, the RERL may, for any reason, whether at its own initiative or in response to a clarification requested by a shortlisted Offeror, modify the Solicitation Documents by amendment.

All offerors that have received the Solicitation Documents will be notified in writing of all amendments to the Solicitation Documents. In order to afford prospective Offerors reasonable time in which to take the amendments into account in preparing their offers, RERL will notify in time.

C. Preparation of Proposals

6. Applying for providing services

The Offerors need to read the RFP including the ToR and prepare proposal accordingly. The proposal must address all the requirements of the proposal including required documents.

7. Language of the proposal

The proposal prepared by the Offeror and all correspondence and documents relating to the proposal exchanged by the Offeror and the RERL shall be written in the English language.

8. Documents comprising the proposal

The proposal shall comprise the following **mandatory documents**:

- a. Proposal submission form
- b. Organizational Profile/Brochure—describing the nature of business, field of experience, licenses, certification and accreditations
- c. Valid registration and renewal certificate
- d. VAT certificate
- e. Tax Clearance Certificate of 2073/74
- f. Track records of Human resource- with list of similar services relevant to objective and scope of works included in this RFP.
- g. CVs of proposed human resources signed by concern individual
- h. The proposal must provide clear methodology to meet the activities proposed for completing this task

9. Proposal form

The Offeror shall structure the operational and technical part of its proposal as follows:

A. Institutional capacity

The Offeror will describe its institutional capacity in brief including year of incorporation, facility and equipment, organizational structure, human resources, completed major study in similar field and financial position.

B. In case of Joint Venture, Consortium or Association

- If the Proposer is a group of legal entities that will form or have formed a joint venture, consortium or association at the time of the submission of the Proposal, they shall confirm in their Proposal that : (i) they have designated one party to act as a lead entity, duly vested with authority to legally bind the members of the joint venture jointly and severally, and this shall be duly evidenced by a duly notarized Agreement among the legal entities, which shall be submitted along with the Proposal; and (ii) if they are awarded the contract, the contract shall be entered into, by and between RERL and the designated lead entity, who shall be acting for and on behalf of all the member entities comprising the joint venture.

- After the Proposal has been submitted to RERL, the lead entity identified to represent the joint venture shall not be altered without the prior written consent of RERL. Furthermore, neither the lead entity nor the member entities of the joint venture can:
 - a) Submit another proposal, either in its own capacity; nor
 - b) As a lead entity or a member entity for another joint venture submitting another Proposal.
- The description of the organization of the joint venture/consortium/association must clearly define the expected role of each of the entity in the joint venture in delivering the requirements of the RFP, both in the Proposal and the Joint Venture Agreement. All entities that comprise the joint venture shall be subject to the eligibility and qualification assessment by RERL.
- Where a joint venture is presenting its track record and experience in a similar undertaking as those required in the RFP, it should present such information in the following manner:
 - a) Those that were undertaken together by the joint venture; and
 - b) Those that were undertaken by the individual entities of the joint venture expected to be involved in the performance of the services defined in the RFP.
- Previous contracts completed by individual experts working privately but who are permanently or were temporarily associated with any of the member firms cannot be claimed as the experience of the joint venture or those of its members, but should only be claimed by the individual experts themselves in their presentation of their individual credentials.
- If a joint venture's Proposal is determined by RERL as the most responsive Proposal that offers the best value for money, RERL shall award the contract to the joint venture, in the name of its designated lead entity. The lead entity shall sign the contract for and on behalf of all other member entities.

They can be described in following headings:

i. Management plan

This section should provide corporate orientation to include the year and state/country of incorporation and brief description of the Offeror's present activities related to program/project evaluation sector. It should focus on services related to the proposal.

This section should also describe the organization unit(s) that will become responsible for the contract, and the general management approach towards a project of this kind. The Offeror should comment on its experience conducting similar programs and identify the person(s) representing the Offeror in any future dealing with the RERL.

ii. Resource plan

This should fully explain the Offeror's resources in terms of personnel and facilities necessary for the performance of this requirement. It should describe the Offeror's current capabilities/facilities and any plans for their expansion.

i. Proposed methodology

This section should demonstrate the Offeror's responsiveness to the specification by identifying the specific components proposed, addressing, the requirements, as specified, point by point, providing a detailed description of the essential performance characteristics proposed warranty; and demonstrating how the proposed methodology meets or exceeds the specifications. **This section should explain clearly how the required information as mentioned in the scope of work in the attached ToR will be collected and analyzed.**

Pricing information shall be separated and only contained in the appropriate Price Schedules.

It is mandatory that the Offeror's Proposal numbering system corresponds with the numbering system used in the body of this RFP. All the references to descriptive material and brochures should be included in the appropriate response paragraph, though material/documents themselves may be provided as annexes to the Proposal/response.

Information which the Offeror considers proprietary, if any, should be clearly marked "proprietary" next to the relevant part of the text and it will then be treated as such accordingly.

ii. Summary Sheet

The Offeror is required to prepare a summary sheet (Table 1) with information related to design of mini/small hydropower projects.

Table 1 Summary sheet

SN	Name of the program/project	Contract agency	Duration	Amount of contract

iii. Qualification of the Service Provider

As per attached ToR

iv. Human Resource Requirement

As per the attached ToR

10. Proposal prices

The Offeror shall indicate on an appropriate Price Schedules, the price of a service it proposes to supply under the contract. The VAT should be included in the offer, if applicable. The tax will be deducted at source as per prevailing tax rule of the government.

11. Proposal currencies

All prices shall be quoted in the Nepalese Rupees (NRs)

12. Period of validity of proposals

Proposals shall remain valid for One Hundred And twenty (120) days after the date of the Proposal submission prescribed by the RERL, pursuant to the deadline clause. A Proposal valid for a shorter period may be rejected by RERL on the grounds that it is non-responsive.

In exceptional circumstances, the RERL may solicit the Offeror's consent to an extension of the period of validity. The request and the responses there to shall be made in writing. An Offeror granting the request will not be required or permitted to modify its proposal.

13. Format and signing of Proposals

The Offeror shall prepare the Proposal. The Proposal shall be in typed or written in indelible ink and shall be signed by the Offeror or a person or persons duly authorized to bind the Offeror to the contract. The latter authorization shall be indicated by written power-of-attorney accompanying the proposal.

The Proposal shall contain no interlineation, erasures, or overwriting except, as necessary to correct errors made by the Offeror, in which case such corrections shall be initialed by the person of persons signing the proposal.

14. Estimated Completion Date

The desired delivery date for completion of this task is **4 months** from signing of contract.

15. Payment

The RERL shall make payments to the Contractor/Offeror after acceptance by the RERL of the invoices submitted by the Contractor/Offeror. The payments will be made in installment basis based on deliverables.

The payments shall be made in two parts as shown below

(i)	20% of the total cost of detailed feasibility study	Upon signing contract
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(i)	30% of the total cost of detailed feasibility study	Upon submission of draft report
(ii)	50% of the total cost after submission of detailed Feasibility study final report	Approval from concerned Authority

D. Submission of Proposals

16. Sealing and marking of Proposals

The Offeror shall seal (lahachhap) the proposal in one outer and two inner envelopes, as detailed below.

- (i) The outer envelope shall be

Addressed to:

The National Project Manager
Renewable Energy for Rural Livelihood (RERL)
Khumaltar Height, Lalitpur, Nepal
Phone: 01 5539390, 5539391, Fax: 01 5542397
Website: <http://www.aepc.gov.np/rerl/>
Email: rerl@aepc.gov.np

And,

Marked with:

"Conduct detail feasibility study of Micro Hydro Operated Lift Irrigation (MHOLI) system in selected MHPs in Rukum District"

- (ii) Both inner envelopes shall indicate the name and address of the Offeror. The first inner envelope shall contain the information specified in clause 8 (Proposal Form) above. The second inner envelope shall include the price schedule and price schedule of individual Offeror duly identified as such.

NOTE, if the inner envelopes are not sealed and marked as per the instructions in this clause, the RERL will not assume responsibility for the Proposal's misplacement or premature opening.

17. Deadline for the submission of Proposals

Proposals must be received by the RERL at the address specified under clause *Sealing and Marking of Proposals* no later than **17:00 hrs, 28 April 2018.**

RERL may, at its own discretion extend this deadline for the submission of Proposals by amending the solicitation documents in accordance with clause *Amendments of Solicitation Documents*, in which case all right and obligations of the RERL and Offerors previously subject to the deadline will thereafter be subject to the deadline as extended.

18. Late Proposals

Any Proposals received by RERL after the deadline for the submission of Proposals, pursuant to clause *Deadline for the submission of Proposals*, will be rejected.

19. Modification and withdrawal of the Proposals

The Offeror may withdraw its proposal after the Proposal's submission, provided that written notice of the withdrawal is received by the RERL prior to the deadline prescribed for the submission of the Proposals.

The Offeror's withdrawal notice shall be prepared, sealed, marked, and dispatched in accordance with the provisions of the Clause *Deadline for Submission of Proposals*. The withdrawal notice may also be sent by telex or fax but followed by a signed confirmation copy.

No proposal may be modified subsequent to the deadline for the submission of the Proposals.

No Proposal may be withdrawn in the interval between the deadline for submission of proposals and the expiration of the period of the Proposal validity specified by the Offeror on the Proposals Submission Form.

E. Opening and evaluation of the Proposals

20. Opening of proposals

The RERL will open the Proposals in the presence of AEPC and UNDP representatives at RERL office.

21. Clarification of the proposals

To assist in the evaluation and comparison of Proposals, the Purchaser may at its discretion, ask the Offeror for clarification of its Proposal. The request for clarification and the response shall be written form and no change in price or substance of the Proposals shall be sought, offered or permitted.

22. Preliminary examination

The Procurer will examine the Proposals to determine whether they are complete, whether any computational errors have been made, whether the documents have been properly signed, and whether the Proposals are generally in order.

Arithmetical errors will be rectified on the following basis: If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price errors, its proposal will be rejected. If there is a discrepancy between the words and figures the amount in words will prevail.

Prior to the detailed evaluation, the Procurer will determine the substantial responsiveness of each Proposal to the request for Proposals (RFP). For the purposes of these clauses, a substantially responsive Proposal is one which confirms to all the terms and conditions of RFP without material deviations. The producer's determination of a proposal's responsiveness is based on the contents of the proposal itself without recourse to extrinsic evidence.

23. Evaluation and comparison

Method of Selection: Quality Cost Based Selection

Total Score (100%) = Technical Evaluation (70%) + Financial Evaluation (30%)

Maximum Total Score = 1000

The Financial Proposal carries a total score of 300 points. The points for the financial proposal will be allocated as per the following formula:

$$\frac{\text{Lowest Bid Offered}^*}{\text{Bid of the Firm/Offeror}} \times 300$$

* “Lowest Bid Offered” refers to the lowest aggregate price offered by proposers scoring at least 70% points in Technical Evaluation.

The Contract will be awarded to the (agency/Organization/Firm) Offeror scoring the highest combined scores (Technical and Financial).

Technical evaluation criteria will be as follows: **Pass marks for technical evaluation shall be 70%**

Summary of technical proposal evaluation form	Score weight	Point obtainable
Expertise of the firm submitting proposal	35%	350
Methodology, its appropriateness to the ToR, condition and timeliness of the implementation plan	35%	350
Qualification and experience of personnel	30%	300
Total		1000

Form 1: Criteria for evaluation of expertise of the firm

SN	Criteria	Obtainable points	Company/Firm				
			A	B	C	D	E
1	General experience of firm	50					
1.1	Experience less or equal to 3 year	30					

1.2	Experience more than 3 year	50					
2	Experience of firms on Hydropower	300					
2.1	Up to 3 Detailed feasibility study above 1000kW	100					
2.2	Greater than 3 detailed Feasibility Study above 1000kW	200					
	Sub-total	350					

Form 2 Criteria for evaluation of approach, methodology and appropriateness

SN	Criteria	Obtainable points	Company/Firm				
			A	B	C	D	E
1	Approach and methodology	200					
2	Innovative Approach for the task	100					
3	Timeline plan	50					
	Sub-total	350					

Form 3. Criteria for evaluation of proposed human resources

	Resource	Criteria	Obtainable points	Company				
				A	B	C	D	E
1	Team Leader (Hydropower Expert)-(One)	As in ToR	150					
5	Senior Overseer/Surveyor/Engineer (One)	As in ToR	80					
6	JTA/Social mobilizer (One)	As in ToR	70					
		Subtotal	300					

B. Award of contract

24. Award criteria, award of contract

The RERL reserves the right to accept the proposal or reject all proposals at any time prior to award of the contract, without thereby any liability to the affected Offeror or any obligation to inform the affected Offeror or Offerors of the grounds for the Purchaser's action prior to the expiration of the period of proposal validity, the RERL will award the contract to the qualified Offeror whose proposal after being evaluated is considered to be the most responsive to the needs of the organization and activity concerned.

25. Purchaser's right to vary requirements

The purchaser reserves the right at the time of award of the contract to vary the quantity of services and goods specified in the RFP without any change in price or other terms and conditions.

26. Signing of the conditions

After the evaluation of the proposals, **a selected Offeror will be asked to enter into contract.** Within 15 days of the receipt of the contract, the successful Offeror shall sign and date the contract and return it to the purchaser.

General Terms and Conditions of the Contract

1. Independent Relationship

Nothing contained in the contract shall be construed as establishing or creating between Government and the Organization the relationship of a master and a servant or principal and agent, it being understood that the Organization is an independent person vis-à-vis Government.

2. Organization /Expert/Consultant's General Responsibilities

- The organization shall carry out services under this contract with due diligence and efficiency and in conformity with the highest standards of professionals and ethical competence and integrity.
- The Organization shall act at all times so as to protect, and not be in conflict with the interests of Government.
- The organization shall be responsible for the professional and technical services provided by him/her in the implementation of this contract.

3. Workmen's compensation and other insurance

The organization shall make his/her own arrangements regarding insurance for the medical expenses and for an accident, death and permanent disability for the period of this contract. All costs involved will be borne by the Organization.

4. Source of Instruction

The organization shall neither seek nor accept instructions from any authority other than RERL's authorized agent in connection with the performance of services under this contract.

5. Prohibition on conflicting activities

The Organization shall ensure that he/she will not directly/indirectly engage in any activity that would conflict with those of RERL in respect of this evaluation.

6. Officials no to benefit

The Organization warrants that no RERL has been or will be admitted by him/her to any direct/indirect benefit arising from this contract or award thereof.

7. Assignment

The Organization shall not assign, transfer, pledge or make other disposition of this contract or any other parts thereof rights, claims or obligations under this contract, without prior written approval of RERL.

8. Records, Accounts, Information and Audit

- The organization shall maintain accurate and systematic records and accounts in respect of the services to be performed under this contract.
- The Organization shall furnish, compile or make available at all times to RERL any records or information, oral or written, which RERL may reasonably request for in respect of the services to be performed under this contract.

- The Organization shall allow RERL or its authorized agents to inspect and audit all such records or information upon reasonable notice.

9. Language

Unless otherwise specified in this contract, English language shall be used by the Organization in all written communications to RERL with respect to the services rendered and with respect to all documents procured or prepared pertaining to such services.

10. Equipment of property

Equipment or property furnished to the organization with funds supplied or reimbursed by the RERL or its agent shall be the property of the RERL and such equipment shall be returned to the duly authorized official of RERL upon completion of the services, conclusion of this contract or upon completion of the services, conclusion of this contract or upon termination thereof or when no longer required by the Organization. Such equipment or property when returned to RERL shall be in the same conditions as when delivered to the Organization, subject to the normal wear and tear. The organization shall in any event, be liable to RERL for the loss of or damage to such equipment or property through his/her fault or negligence.

11. Confidential Nature of Documents

All maps, drawings, photographs, mosaics and plans.

12. Amendments

The terms and conditions of this contract may be amended only in writing signed by both parties to this contract or their duly authorized representatives.

13. Obligation to Inform RERL of change in condition

The organization shall promptly and fully notify RERL in writing of any conditions, which interferes, or threatens to interfere, with successful carrying out of the services under this contract. Such notice shall not however relieve the Organization of his/her obligations to continue to provide services under this contract. Upon receipt of such notice, RERL shall take such action as in its sole discretion it considers to be appropriate or necessary under the circumstances.

14. Taxation

The Organization shall be liable for any tax levied on the remuneration and allowances paid as per this contract. Income tax on the remuneration and allowances paid to the organization will be deducted at source.

Proposal Submission Form (Company Letter Head)

The National Programme Manager
Renewable Energy for Rural Livelihood (RERL)
Khumaltar Height, Lalitpur, Nepal
Phone: 01 5539390, 5539391, Fax: 01 5542397
Website: <http://www.aepc.gov.np/rerl/>
Email: rerl@aepc.gov.np

Dear Sir,

Having examined the Solicitation Documents, the receipt of which is hereby duly acknowledged, we, the undersigned, offer to provide services to conduct evaluation of the "**Conduct detail feasibility study of Micro Hydro Operated Lift Irrigation (MHOLI) system in selected MHPs inRukum District**" for the sum as may be ascertained in accordance with the Price Schedule attached herewith and made part of this proposal.

We undertake, if our proposal is accepted, commence and complete delivery of all services specified in the contract within the time frame stipulated.

We agree to abide by this Proposal for a period of 120 days from the date fixed for opening of Proposals in the invitation for proposal, and it shall remain binding upon us and may be accepted at any time before the expiration of that period.

We understand that you are not bound to accept any proposal –whole or part –you may receive.

Dated this day/Month of year

Signature
Name
Position
Stamp

Duly authorized to sign Proposal for and on behalf of

Financial Proposal Submission Form
PRICE SCHEDULE

The Consulting Firm/Contractor is asked to prepare the Price Schedule alongwith the cost breakdown (as provided in this annex IV below) in separate envelop. All prices/rates quoted must be inclusive of all taxes. The Price Schedule must provide a detailed cost breakdown. Provide separate figure for each functional grouping or category. The format shown on the following pages should be used in preparing the Price Schedule. The format includes specific expenditures, which may or may not be required or applicable but are indicated to serve as the examples. Therefore, it should be considered as broad guidelines for Price Schedule (s).

Cost Breakdown by Cost Component

Financial Proposal

Conduct detail feasibility study of Micro Hydro Operated Lift Irrigation (MHOLI)
system in selected MHPs in Rukum District

S.N.	Particulars	Unit	Quantity	Rate	Total Amount(NRs)
1.0	Human Resource Cost				
	Team Leader	LS	1		
	Senior Overseer/Surveyor/Engineer	LS	1		
	JTA/Social mobilizer	LS	1		
2.0	Travel				
	Field Visit	LS	1		
	Local Travel	LS	1		
3.0	Design and report preparation				
	Report preparation and Printing	Nos	1		
4.0	Equipment Rentals	LS	1		
5.0	Base cost (1+2+3+4)				
6.0	VAT (13 % of base cost)				
				Grand Total (5+6)	

Total in words.....

Annex V: Terms of Reference (ToR)

Conduct detail feasibility study of Micro Hydro Operated Lift Irrigation (MHOLI) system in selected MHPs in Rukum District”

1. Background

Renewable Energy for Rural Livelihood (RERL) Program is a joint program of GoN, UNDP and The World Bank. This program is a continuous program of Rural Energy Development Program (REDP) and operational in the 26 districts. The objective of the RERL is to contribute to economic, environmental and social benefits of the rural people by removing barriers that have hindered the wider use of renewable energy resources in the rural Nepal to improve living standard of rural people, increase employment opportunities and productivity, reduce dependency on traditional energy resources and attain sustainable development through the integration of the alternative energy with the overall socio-economic activities. Since July 16, 2012, AEPC is executing a five years National Rural and Renewable Energy Programme (NRREP) which is a single program modality for all energy related activities in Nepal. It is envisaged that no other programme or project related to RE promotion in Nepal will be supported or executed outside the NRREP's framework.

Experience has shown that electrification in rural areas does not automatically induce the local economic development. This is primarily due to lack of local business development support services available to micro and small businesses, low orientation towards enterprise creation as well as fragmented capacity of existing small businesses to capitalize on increased energy access. Business Development for Renewable Energy and Productive Energy Use (PEU) Component is one of the major components of NRREP. This component seeks to promote productive energy use of RE in order to generate local employment and income of the rural men and women by establishing Micro, Small and Medium Enterprises (MSMEs).

2. Objectives

The main objective of the assignment is to conduct detailed feasibility study of micro hydro operated lift irrigation system at the sites (four Micro Hydro catchment areas).

The specific objectives of the assignment are:

- To conduct agricultural survey of the project area
- To conduct socioeconomic survey of the beneficiaries
- To assess technical and economic viability of the lift irrigation systems
- To prepare a sound feasibility study report of the project, which include agriculture, engineering, socioeconomic and financial details of the system.

3. Scope of Work (Activities)

The assignment should be based on primary information; however, relevant secondary information may be used where applicable.

- ❖ Carry out baseline survey of the existing beneficiary households of proposed lift irrigation systems of Bafikot Rural Municipality ward no 1 and Sisne Rural Municipality ward no 3, of Nawavijan Jalavidhut Cooperative Ltd.

- ❖ Preparation of detail feasibility study of Chun Khola I, II and Simle Khola Micro Hydro operated lift irrigation as per previous survey data.
- ❖ Consultative meetings with farmers and MH functional Groups to ascertain the land availability, types of vegetables/high value crops to be produced, amount of water required, market potential, etc.
- ❖ Interaction with local vegetable collectors/cooperatives/suppliers/vendors.
- ❖ Interaction with Regional Service Center and District Agriculture Development Office and District Irrigation Office, etc. to identify potential for resource mobilization, collaboration, etc.
- ❖ Selection of most suitable sites for micro hydro operated lift irrigation, survey to determine (water lifting) head, layout of main and distribution pipes lines, location of pump, number and location of collection and distribution tanks, number and location of sprinklers/micro irrigation systems
- ❖ Cost estimate and financial analysis including IRR, NPV, BC Ratio, etc
- ❖ Detailed drawings including site layouts
 - Intake
 - Reservoir
 - Distribution system
- ❖ Preparation of intervention/action plan including all activities required for installation of Lift Irrigation.
- ❖ Preparation of Final Bill of Quantity of Lift irrigation project (system)
- ❖ The final DFS report should be prepared in attached format/guidelines herewith Annex VI.

4. Inputs from AEPC/RERL

- ❖ Budget to carry out the assignment, relevant documents and other available information
- ❖ Staff input to assist the consultant in the various stages of assignment from RERL, PEU Component and RSC.

5. Human Resource Requirement

The proposed team should comprise of an irrigation expert with experience in micro irrigation systems and micro hydro operated lift irrigation and sub-ordinates. Previous experience in design and installation of micro hydro lift irrigation will be given preference.

5.1 Team Leader

The team leader is responsible for ensuring that the DFS is rightly designed, implemented and reported. S/he should also possess a strong working knowledge and understanding of estimate and design of the lift irrigation system, policies, rules and regulations of development of lift irrigation. S/he should have relevant experience in designing of lift irrigation with qualification in Bachelors in Engineering preferable master degree in any subject.

5.2 Senior Overseer/Surveyor/Engineer

The senior overseer is responsible for the survey of the proposed site. S/he should possess a strong working knowledge and understanding of survey and design of the lift irrigation system. S/he should have relevant experience in surveying of lift irrigation and Bachelor degree in engineering

5.3 JTA/Social mobilizer

The JTA/Social mobilizer will assist to carryout household survey, market information gathering, and agriculture data collection.

5.4 Representative from DADO

The DADO representative will be responsible on identifying major crops and cropping pattern. S/he will be responsible to identify water requirement by the crops to be irrigated within possible limits so as to have efficient utilization of the resource potential.

6. Key deliverables

Key deliverables of the consulting services are;

- ❖ Detail feasibility study reports of five separate lift irrigation projects which includes e.g. cost estimation and financial analysis, detail drawing, action plan

Annex VI

MHOLI GUIDELINES	
CHAPTER – ONE	
1	INTRODUCTION
1.1	Introduction to Micro Hydro Operated Lift Irrigation (MHOLI)
1.2	Objective of the Study
1.3	Methodology
1.3.1	Field Work
1.3.2	Office Work
1.4	Description of Project Area
1.5	Location and accessibility
1.6	Geography and Climates
1.7	Soil and Land Type
1.8	Land holding
1.9	Agriculture Production
1.1	Existing Cropping pattern
1.1.1	Market and Financing instutions
CHAPTER – TWO	
2	PROPOSED PROJECT DEVELOPMENT PLAN
2.1	Objective and Scope
2.2	Increment in Existing Crops
2.3	Increment in Vegetable
CHAPTER – THREE	
3	PLANT SIZING
3.1	Design Discharge
3.2	Motor Sizing
CHAPTER – FOUR	
4	TECHNICAL ASPECT
4.1	Civil Components
4.1.1	Intake Chamber
4.1.2	Intake, Rising Main and Distribution Pipe Lines
4.1.3	Motor House
4.1.4	Fencing
4.1.5	Transmission Line
CHAPTER – FIVE	
5	DETAIL COST ESTIMATATION
5.1	Methodology
5.2	Civil Components
5.3	Transmission Line
5.4	VAT for Non-local Items
5.5	Pump Installation
5.6	Transportation
5.7	Consultancy and Supervision
CHAPTER – SIX	
6	CONCLUSION AND RECOMMENDATIONS
6.1	Conclusion
6.2	Recommendation
7	ANNEXES

