

Terms of Reference (TOR)

For

**To identify potential sites for solar powered irrigation in
SAMUNNATI Project**

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1. BACKGROUND

Practical Action is a global change-making group that consists of a UK registered charity with community projects in Africa, Asia and Latin America, an independent publishing company and a technical consulting service. It combines these specialisms to multiply its impact and help shape a world that works better for everyone. In Nepal, Practical Action is focused on putting ingenious ideas into work to contribute to poverty reduction and sustainable wellbeing through working in three expertise change areas: **Farming that works; Energy that transforms and Resilience that protects.**

Under Farming that works programme, Practical Action Nepal Office in partnership with DECOS has been implementing a 3 years project titled “SAMUNNATI: Building climate adaptive farming opportunities and improved livelihoods for women and marginalised groups in Nepal” in eight Rural/Municipalities of three districts; Dang (Dangisaran & Shantinagar rural municipalities), Rolpa (Runtigadi, Triveni, Thawang & Pariwartan) and Rukum East (Bhume & Puthauttarganga) of Lumbini Province in Nepal since Jan 2022. The project is co-funded by the UK Aid Match fund. The overall objective of the project is to contribute to Nepal Government's SDG 1 target of reducing extreme poverty to less than five per cent by 2030 whereas the specific objective of the project is to improve economic and social resilience from market-oriented agriculture production and off-farm employment of 6,000 women, men from marginalised groups and people living with disability in province 5 in Dang, Rolpa and Rukum East Districts in Nepal. The project works directly with 6,000 beneficiaries (women: 4,691, men: 1,092 and people with disability: 217), farmers' cooperatives, CSOs, women networks, agro-vets, business service providers, insurance companies, Bank and financial institutions, Development partners and local government.

The project is expected to achieve following five broad expected results to achieve objective of the project within its duration of 36 months.

1. Increased agriculture production and climate resilience
2. Improved market linkages
3. Increased entrepreneurial capacity
4. Increased access to affordable credit and finance
5. Reduced drudgery and increased empowerment

Under result 1, the project is focusing to increase agriculture production and climate resilience. Access to irrigation is key component that contributes to increase agriculture production. Due to climate change impact, some communities in the project areas have limited access to source of water for irrigation. They are relying on rainwater for agriculture farming. The project has planned to establish solar powered irrigation in those communities who are facing acute shortage of water. Therefore, to identify needy and feasible areas, the project intends to carry out research work titled " **To identify potential sites for solar irrigation**" in six rural municipalities of two (Rolpa and Rukum East) Districts of Nepal

2. NATURE OF ISSUE

Rolpa, Rukum East and Dang are marginalised districts, where Rukum East and Rolpa are hilly and poorly connected to roads and markets. Within the districts, there is high poverty, marginalisation, and potential for economic and social empowerment. Most of the households in the selected communities are poor, marginalised and climate vulnerable. Among them most vulnerable are women, especially women heads of household whose husbands died during the civil war (1996-2006) or have migrated for work, people with disabilities and both women and men from marginalised groups, mainly Dalit and Janajati. Lack of knowledge on climate change, its impact and limited source of water for irrigation, poor soil, low access to capital, inputs, and markets all limit productivity and incomes.

The project areas are adjacent districts in Western Nepal in the lowlands and mid foothills of the Himalayas, where rainfall is low. Communities are mostly remote, living in rugged, hilly and marginalised areas. These districts are heavily reliant on small scale agriculture for food and income and are not yet self-sufficient for food. Climate change has made the monsoon rains less predictable, reduced crop yield and reduced the winter rains, making winter crops very uncertain. Farmers know that climate is changing, but do not know how to respond to the changing temperatures and rainfall. Most significantly, the winter showers are much reduced, which used to support winter crops like cowpea, black gram, potato and wheat, putting farmers in danger of losing an entire food crop. The vulnerable communities possess inadequate knowledge, skills and information regarding the climate change impact. They are also unaware about the technologies that best fit their context for climate adaptative agriculture. In some communities, there is limited source of water and facing acute shortage of water for irrigation. They are relying on rainwater for agriculture farming. The aggregated result is that the communities are food insecure and lack of profitable livelihood.

In this context, the project has planned "**To identify potential sites for solar irrigation**" in two (Rolpa and East Rukum) Districts of Lumbini Province.

3. OVERALL OBJECTIVES

The overall objective is "**To identify potential sites for solar irrigation**" in six rural municipalities of two districts: Rolpa (Runtigadi, Triveni, Thawang & Pariwartan) and Rukum East (Bhume & Puthauttarganga).

The specific objectives are,

1. To identify at least 12 potential/feasible sites for solar irrigation in above mentioned districts and rural municipalities
2. To find the relevant information on identified feasible sites such as beneficiary households, total area of cultivated land for irrigation, nearest water source, vertical head from source to community, delivery pipe length, size of reservoir tank etc.
3. To conduct detail survey and provide complete design and cost estimate of each identified sites/schemes

4. SCOPE OF WORK

Based on the objective, following are the major scopes of this study. However, the detailed scope of study will be discussed and finalized during an inception period.

- The consultant needs to review project document, log-frame, and other relevant documents to have clear understanding of project's objective and expected results.
- The consultant team will conduct assessment and identification of feasible areas in targeted farmer groups of SAMUNNATI project where solar powered irrigation is essential to increase access to irrigation
- The consultant needs to conduct discussion meeting with respective palika including stakeholders to collect information regarding potential sites for solar irrigation
- The consultant needs to identify at least 12 potential/ feasible sites for solar irrigation in six rural municipalities (two in each rural municipality)
- The consultant team needs to find relevant information on identified feasible sites such as beneficiary households, total area of cultivated land for irrigation, water source, vertical head from source to community, delivery pipe length, size of reservoir tank etc.
- The team will conduct detail survey and provide complete design and cost estimate of all 12 identified sites/schemes

5. STUDY AREA

The study will be carried out in six rural municipalities of two districts: Rolpa (Runtigadi, Triveni, Thawang & Pariwartan) and Rukum East (Bhume & Puthauttarganga).

6. METHODOLOGY

Based on objective and scope of the study, appropriate approach and methodology have to be proposed. Mainly FGD and KII and interaction meeting for both qualitative and quantitative information, including survey for detail design and estimate. Triangulation of data/information have to be clearly mentioned. The methodology and tools will be finalized together with DECOS and Practical Action project team. The following steps would guide the process however the external consultant and team can propose methods within this broad framework.

A. Inception Phase:

- After the formal agreement, the assignment will start with an inception phase
- This phase will undertake a desk review of project document, log-frame, and other relevant documents to have a clear understanding of objective and outcomes as well as expected result of the project
- Collect and analyse project related secondary data information
- Develop checklist to identify potential sites for solar irrigation including detail survey tool for design and estimate through proposed methods such as FGD, KII, expert interviews, field observation and detail survey, design & estimate tool)
- The consultant will also refine how s/he is going to undertake the assessment, analysis, and what sources of information they are going to use for this work
- Based on the review and assessment, prepare an inception report including a clear-cut methodology, timeline, schedule and steps to be followed to undertake this assignment
- The inception phase will end with submission of the inception report and finalize it after incorporating comments from Practical Action team.

B. Interim Phase:

- After inception phase, the assessment will then progress to the interim phase which includes field work, and collection of field information based on checklist
- The team will utilize different data collection tools such as field observation, detail survey, expert interviews, key informant interviews, Focus Group Discussion (FGDs), interaction meeting with communities, groups and local governments and other stakeholders as well as validating information with community and relevant stakeholders
- The team needs to ensure active participation of women, marginalized communities, and disabled people during field work.

C. Reporting phase:

- After completing field work, the consultant should submit the draft report which will be reviewed by the technical team of Practical Action Nepal for feedback/suggestions
- The consultant will incorporate input and submit the revised version
- The full draft of the report will be reviewed by Practical Action team
- Finally, the consultant will submit the final report by incorporating all comments from reviewers.

7. DELIVERABLES

The followings are the expected deliverables from this assignment:

- **Inception report:** an inception report incorporating findings of desk review, conceptual framework of the assessment, details of applicable tools and methodologies together with details of work plan, checklists, time schedules as well as tentative table of content for the final baseline report.
- **Draft and final reports:** Detail draft report meeting the objectives and scope of the ToR and with the methodologies in line with the table of content developed and agreed in Inception Report. Final report will be the end product after incorporation of all the comments from reviewers.
- **Raw generated data:** The consultant's needs to submit the data generated during this assignment as well as other field related photos during field observation.

8. EXPERTISE AND MANAGEMENT

The consulting team should have good experience on need identification, assessment, survey, design and estimate of solar powered irrigation, clear understanding of similar work. Prior working experience in Lumbini Province, and project working areas will be an asset. The consultant shall comprise of two team members as below, however the consulting firm can propose as per need and scope of the assignment. The respective team members should have following qualification and expertise:

Team Leader:

The Team Leader will manage the overall assignment. S/he will ensure that the various elements of the assignment are efficiently planned and undertake with an appropriate manner that provides clear conclusion. The Team Leader will also be responsible for effective liaison with key stakeholders while conducting the assignment and should have following qualification and expertise:

- Team Leader should have at least Master's Degree in Engineering (Irrigation or water resources) or related areas and a proven track record of at least five years of extensive work experiences of similar assignment
- Have strong knowledge on need identification, assessment, survey, design and estimate of solar powered irrigation
- Good understanding with assessment and application of solar powered irrigation
- Proven analytical and report writing skills is must
- Prior experience of managing teams of similar consulting assignments
- Demonstrated ability to take initiation and meet deadline

Team member/Technical expert:

- S/he should have at least Bachelor's Degree in Civil Engineering or related field and a proven track record of at least three years of extensive work experiences of similar assignment
- Have strong knowledge on need identification, assessment, and feasibility survey of solar powered irrigation
- Strong understanding on application of solar irrigation and experience for data entry and analysis
- S/he should have strong knowledge on detail survey, design, and cost estimate of solar powered irrigation

9. BUDGET

The maximum available budget is **NPR 825,000.00** (In words: Eight hundred twenty-five

thousand rupees only) **inclusive of applicable taxes**. This includes consultant's fee (including surveyor if required), lodging/accommodation, air fare/travel including all other cost associated with this assignment. All applicable taxes will be deducted at source.

The payment will be done in three instalments: 40% of total agreed amount shall be disbursed upon submission of inception report, 30% will be disbursed upon submission of draft report, and remaining 30% will be paid after submission of final report and all other deliverables mentioned in section 7 of ToR.

Apart from the above, submission of the following will be taken into account during the selection process:

- a. A full technical and financial proposal along with the budget breakdown.
- b. A copy of Company Registration
- c. A copy of VAT certificate (obligatory)
- d. A copy of tax clearance for last fiscal year from Inland Revenue Office; and
- e. All proposed professionals must sign the copy of clearly mentioning their proposed position in this assignment.

10. DURATION AND TIMELINE

The consultant is expected to complete the task within two months of the commencement of the assignment which is anticipated to be effective from 28 September 2022 and will be completed by 27 November 2022.

11. EVALUATION CRITERIA

All received proposal/CVs shall be reviewed following different indicators. These will be but not limited to sound understanding of the assignment, competent methodology, consistency, coherence and compliance, experience, and efficient budget planning.

12. INVITATION FOR THE LETTER OF INTEREST

Practical Action Nepal Office requests consulting firms (registered in VAT) to submit (i) an application highlighting the letter of interest (LoI) (ii) brief technical proposal along with your proposed methodology (not more than 7 pages) (iii) recently updated CV, and (iv) a financial proposal with detail cost breakdown to conduct the proposed work to following address on or before 17:00 hrs., 21st September 2022 in separate envelope properly marked with the proposal type sealed. The outer envelope should be marked as **"To identify potential sites for solar irrigation"**.

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Practical Action believes in and follows through a fair and competitive process to recruit the consultant in all of its assignment to ensure quality assurance.

**BIG
CHANGE**
starts small