## 1. TEXT OF ADVERTISEMENT

**Government of Himachal Pradesh**
**Department of Forest**
**Integrated Development Project of Source Sustainability and Climate Resilient Rain Fed Agriculture.**
**Forest Road, Solan-173212, H.P.**

### INVITATION FOR EXPRESSION OF INTEREST

IDP, Solan H.P. invites sealed Request for Expression of Interest (REoI) from Indian consulting agencies for Selection of a Consultant [Firm] to Design, Develop, Implement and Maintain, and an Online, Web-based, Modular and Scalable Project Management Information System [PMIS] and Provide Technical Assistance to Monitor and Manage the IDP

The REoI Document containing the details of qualification criteria, submission requirement, brief objective & scope of work and evaluation criteria etc. can be downloaded from the project website www.hpidp.org

Last date for submission of REoI is 14.8.2020 upto 11:00 hrs.

**Executive Director**
**Integrated Development Project,**
**Forest Road, Solan-173212 (H.P.)**

**Government of Himachal Pradesh**
**Department of Forest**
**Integrated Development Project of Source Sustainability and Climate Resilient Rain Fed Agriculture.**
**Forest Road, Solan-173212, H.P.**

Dear,

Integrated Development Project of Source Sustainability and Climate Resilient Rain Fed Agriculture. Solan, H.P. invites sealed Request for Expression of Interest (REoI) from Indian consulting agencies for Selection of a Consultant [Firm] to Design, Develop, Implement and Maintain an Online, Web-based, Modular and Scalable Project Management Information System [PMIS] and Provide Technical Assistance to Monitor and Manage the IDP

The interested consultants (Firm) may provide information indicating that they are qualified to perform the services. Consultants (Firm) may associate with other firms to enhance their qualification, but should indicate clearly whether the association is in the form of a joint venture and/or a sub consultancy. In case of a joint venture, all the partners in the joint venture shall be jointly and severally liable for the entire contract, if selected.

The REoI Document containing the details of qualification criteria, submission requirement, brief objective & scope of work as per Term of Reference and evaluation criteria etc. can be downloaded from the project website www.hpidp.org

Further details, if any, may be obtained from Executive Director, Integrated Development Project, Forest Road, Solan-173212 during working hours

You may submit your responses in sealed envelopes physically, by post /courier or through e-mail: idpsolan@gmail.com to the undersigned latest by 14/08/2020 upto 11.00 AM.

Queries if any may be referred in writing to the Executive Director at the above mentioned address or Telephone No. 01792 -223004 or at E-mail: idpsolan@gmail.com

Note: Chief Project Director, IDP Solan or any of its designated officer reserves the right to cancel this request for REoI and/or invite afresh with or without amendments, without liability or any obligation for such request for REoI and without assigning any reason. Information provided at this stage is indicative and IDP reserves the right to amend/add further details in the REoI.

**Executive Director,**
**Integrated Development Project,**
**Forest Road, Solan-173212 (H.P.)**

**COUNTRY: INDIA**

**Loan No./Credit No./Grant No.: IN 9041**

**Assignment Title:** Selection of a Consultant [Firm] to Design, Develop, Implement and Maintain, and an Online, Web-based, Modular and Scalable Project Management Information System [PMIS] and Provide Technical Assistance to Monitor and Manage the IDP

Reference No. (as per Procurement Plan): IN-HPFD-150968-CS-QCBS

1. Integrated Development Project for Source Sustainability and Climate Resilient Raid Fed Agriculture, Solan, H.P. (IDP) has been approved for financing from the International Development and Reconstruction Bank (World Bank). The total size of the project is US $ 100 Million (approx. INR 700 Crores). The Borrower intends to apply a portion of funds to eligible payments under the contract (to be signed) for consultancy for Project Management Information System (PMIS)
2. The Project intends to consider only those consultants (Firm) that have the requisite capability and competency, in terms of required qualifications, technical strengths, expertise in service sector, experience of carrying out similar project and financial stability to address the requirements of this project and to provide the proposed services.
3. The short listing criteria are:
   (i) The Consulting firm must have experience of minimum five years in consulting filed;
   (ii) Must have successfully completed at least 3 assignments to Design, Develop, Implement and Maintain, and an Online, Web-based, Modular and Scalable Project Management Information System [PMIS] and Provide Technical Assistance to Monitor and Manage the Project. (Letter of award from employer/ project completion certificate is to submitted);
   (iii) Must have successfully completed at least 1 assignments of similar nature in EAP/Govt. Project/Semi Govt. Projects (Letter of award from employer/ project completion certificate is to submitted);
   (iv) Preference will be given to those firms who have experience of working in Himalayan Projects.
4. The attention of interested Consultants is drawn to Section III, paragraphs,3.14, 3.16, and 3.17 of the World Bank's "Procurement Regulations for IPF Borrowers: Procurement in Investment Project Financing (Goods, Works, Non-consulting and Consulting Services), July 2016 setting forth the World Bank's policy on conflict of interest.
5. Consultants may associate with other firms to enhance their qualifications, but should indicate clearly whether the association is in the form of a joint venture and/or a sub-consultancy. In the case of a joint venture, all the partners in the joint venture shall be jointly and severally liable for the entire contract, if selected.
6. A Consultant will be selected in accordance with the Selection Based on the Quality and Cost Based Selection (QCBS) method set out in the World Bank Procurement Regulations for IPF Borrowers: Procurement in Investment Project Financing (Goods, Works, Non-consulting and Consulting Services), July 2016

7. The detailed Project Description/Activities, area and ToR can be downloaded from the project website www.hpidp.org.in

8. REoI submission and opening:
   (i) REoI submission shall be placed inside a sealed envelope clearly marked "REoI for PMIS" addressed to Chief Project Director, Integrated Development Project, Forest Raod, Solan-173212 (H.P.) alongwith the name and address of the consultation (Firm), and with a warning " DO NOT OPEN UNTIL 14th August, 2020, Time: 11.00 hours (IST).
   (ii) REoI can be submitted physically to the address, by post/courier .
   (iii) The REoI can also be submitted through scanned copies of the relevant documents through e-mail: idpsolan@gmail.com.
   (iv) The Project will not be responsible for postal delay for any reason (s).

| **Critical Dates** | **Date** | **Time** |
|---|---|---|
| Publishing Date | 24.07.2020 | |
| Document Download Start Date | 24.07.2020 | 12.00 hrs |
| Document Download End Date | 13.08.2020 | 10.00 hrs |
| REoI Submission End Date | 14.08.2020 | 11.00 hrs |

9. Request for Proposal (RFP) Document will be subsequently issued to the short listed consultants only.

**Executive Director,**
**Integrated Development Project,**
**Forest Road, Solan-173212 (H.P.)**

**FORMAT – 1**

**APPLICANT'S REQUEST FOR EXPRESSION OF INTEREST**

To,

Chief Project Director,
Integrated Development Project,
Forest Road Solan-173212 (H.P.)

**Sub:** **Submission of Request for Expression of Interest for registration as contractor under IDP.**

Dear,

In response to the Invitation for Expressions of Interest (EoI) published on _____ for the above purpose, we would like to express interest to Design, Develop, Implement and Maintain, and an Online, Web-based, Modular and Scalable Project Management Information System [PMIS] and Provide Technical Assistance to Monitor and Manage the IDP

As instructed, we attach the following documents in separately sealed envelopes:

1. General information about the firm/company ( Format-1)
2. Detail of implementation experience (Format-2)
3. Experience in related field (Format-3)

Sincerely Yours,
Signature of the applicant
[Full name of applicant]
Stamp.....
Date:
Encl.: As above.
Note: This is to be furnished on the letter head of the organization.

**FORMAT-2**

**GENERAL INFORMATION ABOUT THE CONSULTANT (FIRM)**

| | | |
|---|---|---|
| 1. | Name of the consultancy firm/Company | |
| 2. | Address of the consultancy firm/Company | |
| 3 | Status of the firm/company (Public Ltd/Pvt. Ltd/Parternership firm/Any other | |
| 4 | Details of Incorporation of the firm/Company | |
| 5 | Detail of Commencement of Business | |
| 6 | Permanent Account Number (PAN) | |
| 7 | GST Identification Number | |
| 8 | Name and Designation of the contact person | |
| 9 | Telephone No. with STD/Mobile Number | |
| 10 | E-Mail of the contact person | |
| 11 | Website of the firm/company | |

Signature of the applicant
Full name of applicant

Stamp & Date

**FORMAT-3**

**Format-: Details of Implementation Experience:**

| Sr. No. | Name of Client | Address | Type of client (Govt/Semi Govt/Private) | Order value of project | Duration of the assignment | Brief description of the project | Whether internal or externally aided project |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Signature of the applicant
Full name of applicant

Stamp & Date

**FORMAT – 4**

| **Experience in Related Fields** | | | | |
|---|---|---|---|---|
| Overview of the past experience in all aspects. | | | | |
| **S. No** | **Items** | Number of Assignments during last 5 years | Order Value of each assignment in Lakh of Rs. (Enclose copy of each order) | Mention the name of Client/ Organization (Enclosed completion certificates |
| **1** | Experience of assignments of similar nature | | | |
| **1.1** | Experience in carrying out similar assignments in Government/Semi Govt | | | |
| **1.2** | Experience in carrying out Similar assignments in Private sector. | | | |
| | | | Signature of the applicant<br>Full name of applicant<br><br>Stamp & Date | |

**INDIA – Integrated Development Project for Source Sustainability and Climate Resilient Rain-fed Agriculture (IDP)**

**Terms of Reference for Selection of a Consultant [Firm] to Design, Develop, Implement and Maintain, and an Online, Web-based, Modular and Scalable Project Management Information System [PMIS] and Provide Technical Assistance to Monitor and Manage the IDP**

## *1. BACKGROUND*

The Government of Himachal Pradesh (GoHP) is preparing the Integrated Development Project for Source Sustainability and Climate Resilient Rain-fed Agriculture (IDP) in selected Gram Panchayats (GP) in the State, with financing from the World Bank. IDP carries forward the ideas and learnings of HP Mid Himalayan Watershed Development Project (HPMHWDP) which was completed in 2017. Project details are available at : http://www.hpidp.org/project-description.php.

Project Development Objective [PDO]

The PDO is to improve upstream watershed management and increase agricultural water productivity in selected Gram Panchayats in Himachal Pradesh.

Selected high level objectives and Results Framework Indictors are tabulated below and further details are available in Annex A of the TOR.

| *Objective* | *Indicators* |
|---|---|
| To improve upstream watershed management in selected Gram Panchayats (GPs) in Himachal Pradesh | Land area under sustainable landscape management practices |
| | Area managed for improved soil |
| | Number of reforms recommended by the institutional assessments that are implemented |
| To increase agricultural water productivity in selected Gram Panchayats (GPs) in Himachal Pradesh | Share of participating farmers adopting climate smart agriculture practices |
| | Share of participating farmers adopting climate smart practices that are female |
| | New farm area brought under higher efficiency irrigation through project support in targeted GPs |
| | Share of participating farmers who give a rating of "Satisfied" or above on process and realized benefits of project interventions |
| | Share of participating female farmers who give a rating of "Satisfied" or above on process and realized benefits of project interventions |

Project Components

The project components are as below:

*Component 1: Sustainable Land and Water Resource Management*

This component promotes participatory and sustainable land and water management through financing the planning and implementation of upstream investments in selected micro-catchments. Site-specific Gram Panchayat resource management plans (GP-RMPs) will be prepared within each micro-catchment to specify detailed activities by location and GP. In parallel to the GP-RMPs, a network of hydrological monitoring stations will be established within the watershed to monitor the quality and quantity of water on a continuous basis, to assess the potential impact of project interventions, whilst laying the foundation for future water budgeting, and hydrological modelling to identify the highest priority sites for future activities. Hydrological watershed modelling in conjunction with landscape analysis can help identify the most critical sites to prioritize investments to ensure the greatest impact for source sustainability and water quality. The main implementers and beneficiaries will be Himachal Pradesh Forest Department (HPFD) staff and relevant community organizations such as sub-groups of the GP user groups set up (or strengthened, where appropriate) under the project. This support will lead to improved forest cover (and hence carbon capture), increased water and sediment regulation, reduced erosion, and improved community participation (including women, youth, and disadvantaged groups) in and benefits from sustainable land and water management that are expected to serve as a model for other states through the Lighthouse India approach (see Component 3).

*Component 2: Improved Agricultural Productivity and Value Addition*

This component would support interventions in downstream areas where the primary (existing or potential) water use is for irrigation in agriculture. It would seek to augment the use of irrigation as a principle strategy for shifting from low-value cereal production to climate resilient crop varieties, higher-value fruit and vegetable production but would do so with a focus on increasing climate resilience and water productivity to maximize the financial returns for water use. The project will seek to leverage additional support from other government programs and projects, particularly that of the agriculture, horticulture, and animal husbandry departments. Key interventions include infrastructure to increase high-productivity water utilization (drip and sprinkler irrigation) – essential elements of CSA – plus the necessary primary and secondary distribution systems. This component will also support the identification and development of agricultural value chains. In addition to improving local livelihoods, the proposed activities will reduce pressure on forests and contribute to increased carbon sequestration and reduced erosion.

*Component 3: Institutional Capacity Building for Integrated Watershed Management*

The long-term objective of this component is two-fold: firstly, to support a more comprehensive and holistic approach to managing the state's water resources while recognizing competing uses both within HP and downstream in other states, in particular Punjab; secondly to facilitate better alignment of institutional mandates for Integrated Watershed Management (IWM) and strengthen the HPFD's institutional structure and capacity for improved service delivery. In the short term, this component will focus on building the institutional capacity of the HPFD as the key government institution responsible for managing roughly two-thirds of the state's land area and identifying possible future reforms through a comprehensive IWM institutional assessment. It will also produce and share knowledge on these critical topics through a Lighthouse India approach.

Project Areas

The project shall cover 428 selected GPs of 32 Development Blocks of the 10 districts of Himachal Pradesh viz; Shimla, Solan, Sirmour, Bilaspur, Hamirpur, Mandi, Kullu, Chamba, Kangra and Una.

These will cover three out of the four major agro-climatic zones of the State, i.e., Shivalik hills, Mid hills & the High hills.

The GPs were selected on the basis of the following criteria: inclusion of GPs which have been de-notified from the protected area network (PAN) and wild life areas, extent of degradation, acuteness of water scarcity, declared backward GPs, cluster of contiguous GPs etc. The State has also identified a list of backward Gram Panchayats, some of which also shall be included in the Project area.

Key Stakeholders/Beneficiaries

*Local Communities*: The key stakeholder and beneficiaries of the project include Gram Panchayats, farmers, farmer's groups and cooperatives including women's groups, and pastoralists and transhumant herders. The women, below poverty line (BPL), scheduled caste (SC) and scheduled tribe (ST) population comprises the vulnerable/ disadvantaged section of the local communities. The stakeholders are primarily engaged in agriculture and horticulture with supplementation from livestock-based activities. The transhumant population includes Gaddis and Gujjars who are totally dependent on forests for rearing their livestock.

*Government Departments***.** The key nodal agency for implementing IDP is the HP Forest Department. A Project Management Unit [PMU] has been set up in the HP Forestry Department [PMU, HPFD] to implement and execute the IDP. The Project will get technical support from other line departments viz; Agriculture Department [AD], Animal Husbandry Department [AHD], Horticulture Department [HD], Rural Development Department [RD] and Panchayati Raj Department [PRD], etc. who will be the main stakeholders from the State.

Monitoring and Evaluation [M & E] Plan of IDP

IDP has envisaged a comprehensive M&E plan, consisting mainly of an independent project evaluation, independent process monitoring, community monitoring, Project Management Information System (PMIS), training of project staff, and project completion report. Each of the activities may be conducted by different agencies. This ToR is for the design, development, deployment, implementation and maintenance of an on-line, web-based, modular and scalable PMIS.

It may be noted that the PMIS will be the main MIS reporting platform of the project through dynamic capturing of data and robust reporting at the state (PMU, HPFD), district (DPO), block (APO) and village/community levels. The PMIS would primarily include a smartphone and a desktop/laptop browser application to gather and input the project interventions, farmer-level data (collected through community monitoring), any other M&E data, and other relevant secondary data and to visualize the data, including using GIS, and produce standard and customized reports to inform the PMU, HPFD and other stakeholders on the project's implementation progress and bottlenecks.

## 3. *OBJECTIVES OF THE ASSIGNMENT*

The overall objective of this assignment is to design, develop, deploy, implement and maintain an on-line, web-based, modular and scalable M&E/PMIS [*mobile compatible, disabled and handicap friendly*] for use of multiple key stakeholders using a development technology that is easy, secure, allows future hosting over government cloud servers (NIC) and is transferrable with knowledge and source code, as well as to provide technical support to the PMU, HPFD to monitor and manage the IDP project.

Broadly, this also includes the following activities:

i. Design the MIS support system, i.e., the M&E indicators, targets, questionnaires, and protocols at all levels of the project (PMU, HPFD; DPO; APO; community/farmer level);
ii. Provide training to project staff at all levels on the PMIS and MIS support system;
iii. Integrate PMIS with GIS applications for Geo-tagging of project activities (geospatial Meta data) and geospatial analysis of data generated during the implementation process to track implementation progress; and
iv. Updation/upgradation of the MIS architecture as a result of any changes in project components or implementation arrangements by the IDP in the near future.

## 4. *SCOPE OF SERVICES, TASKS [COMPONENTS] AND EXPECTED DELIVRABLES*

The minimum scope of the system modules is defined in Annex C of the TOR. A detailed list of tasks to be carried out by the consultant as part of this assignment is given below.

### 4.1 PMIS

The Consultant is expected to propose suitable solutions for a scalable and modular PMIS system along with alternative options of overall architecture, based on the feedback and learning from other similar projects. The options along with pros and cons will particularly relate to available technologies and platforms and their comparison (options to be subjected to a review by the Project Technical Review Committee set up for this purpose). The PMIS platform and modules should be able to capture data both in online (connected to internet/intranet) and offline mode that will also eventually update/appraise project RF as listed in Annex A of the TOR. In case of offline mode, the data would be captured on local multi-modal devices [e.g. laptop, mobile phone, tablets, etc.] using an app and synchronized with centralized cloud server when connected to internet/intranet. The PMIS platform should be able to sync data captured from various devices onto the HPFD/SDC (State Data Center) server/cloud and also transfer specific data back to the various devices.

This entails, amongst others, fulfilling satisfactorily, the below five stages:

**Stage 1:** Understanding the scope of services and submitting an Inception Report with detailed workplan for carrying out the assignment.
**Stage 2:** Development of System Requirement Specification [SRS] and development of solution architecture.
**Stage 3:** System development, deployment, hosting and testing.
**Stage 4:** Training to key stakeholders/users of the system as per Para 3.ii of the TOR, and submission of operational /technical/user manuals.
**Stage 5:** Providing handholding support to users of the PMIS and maintenance of the PMIS.

The above stages may be broken down to include, amongst others, the following activities to be carried out by the selected consultant:

i. Submit an inception report acceptable to the PMU, HPFD outlining a detailed approach, methodology and work plan for the assignment.
ii. Upon acceptance of the Inception Report by the PMU, HPFD, conduct requirements gathering session[s] with project stakeholders and PMIS users (staff at the PMU, HPFD and selected districts, community resource persons and extension officers) and prepare functional specification for the PMIS. It is imperative that the selected Consultant consider institutional expertise while defining the needs of the system.
iii. Based on the requirements gathering exercise as above, design and develop the system architecture and prepare a comprehensive Software Requirement Specifications (SRS) document, including the specifications of smartphones and user interfaces, the protocols for data transmission to the backend servers, the specifications of the back-end servers to handle the expected user load, and the software platforms that will be used for hosting the PMIS.
iv. Design, develop, deploy, implement and maintain the PMIS.
v. Prepare a user test management plan and conduct user testing to refine and improve the user interface of the smartphone and web browser interfaces and reports expected to be generated by the system for use by project stakeholders to plan, monitor and manage IDP.
vi. Maintain the software, conduct periodic bug fixes, and add and modify functionality for a period of 36 months, as and when required.
vii. Prepare user manuals for various users of the project MIS and MIS support system, and train the users on the successful usage of the software.
viii. Prepare an operational manual inclusive of understanding of application, business and database layers. The operational manual must include database architecture and guidelines to understand functionalities of various procedures and triggers at database layer.
ix. Host the backend software and install the app on smartphones; run periodic software maintenance scripts on the backend servers.
x. Prepare a deployment and support plan for bug fixes and ongoing maintenance.
xi. Prepare and implement software maintenance and upgrade plans / system maintenance manual.
xii. Prepare a transition plan to migrate the management of the PMIS to the HPFD [facilitated by the PMU, HPFD] by the end of the project.

### 4.1.1 Inception Report and Requirements Assessment

The Consultant is expected to undertake other requirements assessment for all of the above activities in consultation with PMU, HPFD, DPOs, and other key stakeholders. As part of requirements assessment, consultant would necessarily need to undertake an assessment of pre-existing systems managed by the HPFD to identify potential hosting, management, and interoperability arrangements. The Inception Report must have a reflection of technical document (system requirement specifications) rather than replicate the firm's technical proposal, and should include the following aspects of project management of IDP:

i. *Project Progress Monitoring*: Suggested formats or approach to capture Project Implementation Plan [PIP][1]. The Inception Report should have inclusiveness of the following four phases of the project management cycle :

[1] The PIP is still under development but will be available at the following URL *: http://www.hpidp.org/*. The Project Appraisal Document is available at http://www.hpidp.org/uploads/reports/1584701631.pdf.

a. Phase I: Pre planning Phase
b. Phase II: Planning Phase
c. Phase III: Implementation Phase – until project closure
d. Phase IV: Mid Term Review [MTR] – to incorporate possible changes in project design, if necessitated

Activities to be achieved during the above phases include input/output formats and organisation hierarchy work flow inclusive of approval and log management scenarios.

ii. *Financial Management:* Methodology of integration with GOHP's Financial Management System [FMS]. The inception report should have clarity on whether PMIS will have a fully functional stand-alone FMS or will have integration with existing State Government Financial Management System, or any technical guidelines/formats to manually input the financial expenses, and if so, at what frequency. Guideline or formats for budget preparation, annual work plan, financial work flow, approval mechanism at various stakeholders (Financial department) and project organisation hierarchy level will need to be captured.

iii. *Results Framework [RF] and Key Performance Indicators [KPIs]*: The Inception Report must include the approach to integrate RF/KPI as mentioned in the Project Appraisal Document, with the PMIS. For example, it must:

a. have clarity about the Participatory Rural Appraisal (PRA) exercise or third party baseline integration to support the PMU, HPFD in planning the village level interventions or activities.
b. include the work flow to integrate the RF indicators with GIS system. Guidelines and formats on GIS layers, attributes required to capture the baseline data, and outcomes to be achieved using GIS data.
c. detail the approach or work flow to integrate the RF with other sections of the project as well as compliance departments (if applicable) such as MGNREGA.

iv. *Social and Environment Framework:* The inception report must include the approach (input or output based) to integrate social/environment indicators in PMIS, and guidelines/formats/work flow to integrate the social and environment checklist or indicators. These include the indicators highlighted in the Environmental and Social Commitment Plan (ESCP) and their timelines as well as incorporating provisions of the environmental and social management framework (ESMF) through the project and the investments being implemented at village/community levels.

v. *Procurement Management*: Process/work flow, methodology, formats to record procurement plans, preparation milestones, implementation milestones, physical and financial progress of all sub-investments under IDP.

vi. *Mid Term Review [MTR]* : The report must include the approach to handle PIP-level change management, budget reshuffling (within project components), integration of data (Process monitoring) or impact evaluation (third party) reports with PMIS during midterm project review.

vii. *Existing IFMS*: The report must have methodology of integration with the exiting Integrated Forest Management System [http://ifms.hp.gov.in/].

All mentioned work flows, formats, guidelines, check list or indicators must be part of inception report and must be agreed with the Project Technical Review Committee set up under IDP for this purpose, before initiating system requirement specifications and database designing.

### 4.1.2 System Architecture and SRS Document

After the requirement assessment, the consultant is expected to define the system architecture and corresponding hardware and software requirements taking into account, amongst others, the implementation of GIS. The conceptual model/design of the PMIS would include detailed project implementation and MIS design incorporating sources and destination of data, performance areas and indicators, collection, recording, aggregation and transmission procedures, data formats and reports, periodicity, etc. On the basis of the system architecture and design, a comprehensive Software Requirement Specifications (SRS) would be prepared.

The SRS shall incorporate a deployment plan, support plan, training plan, test management plan, transition plan, and other details required. The SRS should also include a detailed plan for how the system will integrate with the existing Integrated Financial Management System (IFMS). The platform will be hosted by the PMU, HPFD, but the SRS should include a cost-benefit analysis of hosting it on the cloud. The whole platform will be geo-tagged for each beneficiary household, beneficiary producer group, and infrastructure asset, as well as service providers.

The specifications of the PMIS would be performance-based so as to allow the PMIS to perform the following functions. The PMIS should be able to:

- *Facilitate and co-ordinate the collection of raw data and perform sets of relationship, integration, consolidation and data cleaning using statistics***.** The data to be captured will include the core defined progress indicators as per the RF of the project and in addition other KPIs that will be defined through requirements discussions with the project teams. The results framework is available in Annex A of the TOR. The system will also input key project progress activities at all levels of implementation.
- *Capture data through a data entry app, smartphone / tablet and a desktop/laptop browser application* to gather and input the project interventions launched, farmer-level data on farmer characteristics, the interventions adopted by project beneficiaries, and relevant secondary data, viz., government agriculture census data. The data entry application has to be simple and quick to perform for field staff to be able to enter data efficiently and easily with few errors.
- *Transfer the gathered data into a back-end server***.** The server may be hosted by the PMU, HPFD at the start of the assignment but must be transferred to an appropriate HPFD hosting facility before the current project closing date, i.e., before 31 March 2025.
- *Generate reports as per requirement from the key stakeholders, including Monthly Progress Reports [MPR] and Exception Reports***.** Have reports for users at the PMU, HPFD, DPO, APO and village community levels that measure the indicators aggregated at the state, district, and block levels, respectively, and ensure secure access of selected reports to users of different access credentials. The data will be geotagged and rendered visually on GIS maps as part of the reports.
- *Ensure that overall development technology* is easy, secure, allows future hosting over government cloud servers (NIC) and transferrable with knowledge and source code to the existing IT department of the PMU, HPFD. The programming language, technology platforms, and database will be Microsoft-based .NET framework, Java Script, Microsoft SQL Server, Arc Map Viewer and Android SDK. However, the consultant is free to propose another technology for development.

4.1.3 Development of Application Software

Based on the SRS, the Consultant is expected to undertake development of application software in close coordination with the PMU, HPFD team, DPOs, and other stakeholders. It is expected that the first step in this would be to clearly develop and finalize the proposed flow steps with the various stakeholders. The software application would be tested, have a trial-run, pilot-tested, and installed in a phased manner in tune with the installation of hardware at different levels and the stages of implementation of the PMIS. The Consultant is also expected to prepare and share the test case reports with the PMU, HPFD during the annual maintenance period. The development of application software should also include regular security audits of the data to ensure that bugs are handled early on. The Consultant is expected to validate the setup of hardware, software, network, connectivity, and tools as outlined by them. Likewise, the Consultant is expected to carry out data migration, where necessary, along with data cleansing/validation and system testing on migrated data. The Consultant is expected to carry out system setup and on-site performance testing. On successful testing, the Consultant is expected to develop stabilization criteria and prepare a handover plan.

*4.1.4 Training*

The Consultant is expected to train the MIS / IT experts within PMU, HPFD ("operations team") on the MIS application functionalities, its various features and user functionalities. The consultant will provide complete details of the technical specifications, detailed design documents, list of third party tools used and licenses, source codes of all work packages/applications deployed, version control procedures, user manuals etc. The Consultant is expected to develop detailed manuals (Operational, User and Training) and train key persons in the installation and management of the software. The Consultant is also expected to provide training of key staff in the use of application software at various levels, including PMU, HPFD, APO and DPO staff indicated below.

**User Profile**

| | **User Type** | **Tentative Number of users** | **Tentative Number of users to be trained** |
|---|---|---|---|
| 1 | Project state management unit users | 15 | 15 |
| 2 | District Project Office users | 60 | 60 |
| 3 | Assistant project Office users (including extension officers) | 156 | 156 |

4.1.5 Hosting and Maintenance of PMIS

The portal and the database developed will be hosted by the PMU, HPFD. The Consultant is expected to coordinate with the PMU, HPFD for infrastructural support, including hosting on server/cloud and domain management and security issues. All portal applications need to be certified by a third party cyber security audit firm that has been empaneled by the Indian Computer Emergency Response Team (CERT-in) under the Ministry of Electronics and Information Technology before transitioning to the HPFD/SDC (State Data Center) server/cloud. The platform should have data portability such that it can be linked with other Government departments and external partners in a secure manner; and this should either be done on a regular basis, or before handover of the PMIS to the PMU, HPFD. After the

completion of initial four phases mentioned at para 4.1.4 of the TOR, the Consultant is expected to provide handholding and maintenance support for the period of the annual maintenance contract.

The Consultant is expected to provide an Annual Maintenance Contract (AMC)(also known as warranty support for the customized software) service for a period of 36 months, which will include bug fixing and enhancements, if any. The Consultant will provide a half-yearly report on handholding and maintenance provided during the prior six months. The Consultant is also expected to define post implementation maintenance process, change management procedures, and associated arrangements for the MIS application and provide onsite/offsite support. This would include capacity building and handholding of local IT team as follows :

i. *Field implementation support:* The Consultant is expected to provide implementation support at the center for a minimum period of 36 months till the system is stabilized. During this period, technical personnel as per team composition and qualification required of the TOR (see "Person months required" column of Table 6.1 Key Experts and Table 6.2 Non key Experts) will be available to support the PMU, HPFD, and one Programmer (1 Number) will be placed on site.
ii. *Central Helpdesk Including Toll Free Helpline Number[s]:* The Consultant is expected to define guidelines and procedures for setting up helpdesk support at the PMU, HPFD and also provide online help within the application.
iii. *Local IT Cell*: Help identify Resource Allocation as necessary from Project for setting up of local IT cell.
iv. Providing support as Website Content Manager and Technical Manager to PMU, HPFD and its other stakeholders in knowledge areas, such as Website Technology, Website Testing, Usability, e-accessibility, Performance, Security, Guidelines for Indian Govt. websites and Content Management System
v. Providing support in developing new modules, reports, integration with third party evaluation data (if any during project period), using application program interface (API's) and to ensure security scrutiny checklist with reference to government hosting requirements.
vi. Website Quality Manual for STQC (Standardization Testing and Quality) Certification and GIGW (Guidelines for Indian Government websites) Compliance
vii. UAT (User Acceptance Testing)
viii. Content updating and monitoring on daily basis
ix. Website / PMIS web portal Analytics tool to measure website performance
x. Tracking Website Uptime/Downtime
xi. Interaction and coordination with PMU on regular basis regarding technical Issues/changes and changes/requirement implementation
xii. Providing IT support related to network, hardware and software applications
xiii. Designing, implementation, and maintenance of network / cloud infrastructure
xiv. Coordinating with vendors for the commissioning of procured hardware and software
xv. Coordinating with State for IT-related issues
xvi. Any other task related to technical support and co-ordination

4.1.6 Reporting Formats/Checklists/Templates

The Consultant is expected to design formats/checklists/templates acceptable to the PMU, HPFD, to be used for project implementation, monitoring reporting, resource planning, basic business operations, decision support and facilitate generation of both MPRs (Monthly Project Reports) and exception reports at different levels. Apart from the standard and query-based reports, an interface for generation of ad hoc reports, acceptable to the PMU, HPFD, shall also be provided.

### 4.1.7 Handover and Transition

The Consultant would be responsible for effective handing over of all relevant materials to the PMU, HPFD and expected to define change management procedures associated with the enhancement or modifications of system components that have been developed.

## *4.2 Design of M&E / PMIS System*

*Tasks*

1. Review the Project Implementation Plan to understand the project activities and Results Framework indicators and conduct detailed indicator design workshop with relevant PMU, HPFD and DPO staff to finalize the list of input, output, and outcome indicators (RF and KPIs).
2. Design monitoring questionnaires and detailed M&E implementation arrangements to collect, analyze, and report the data required to measure all project indicators.
3. Provide training on the M&E implementation arrangements to key project staff at all levels.

### 4.2.1 Finalize KPIs/Monitoring Indicators and Targets for IDP

The Consultant will review the detailed project description (Annex A), project Results Framework (RF) indicators and Key Performance Indicators (KPIs) (Annex B), and the project implementation plan and, in close consultation with the PMU, HPFD and selected DPO staff, develop input, output, and additional outcome indicators at PMU, HPFD, DPO,APO and village community level, including semi-annual and cumulative targets. Indicators should be gender-disaggregated wherever possible.

### 4.2.2 Design Monitoring Questionnaires and M&E Implementation Arrangements

The Consultant is expected to design questionnaires that necessarily lead to capturing the values of the RF indicators and all other indicators developed under activity 4.2.1 (above) at six monthly intervals through the PMIS and generating MPR and exception reports in agreed formats. The Consultant shall also develop a detailed M&E workflow (Integration with GIS/PMIS) specifying the roles and responsibilities of project staff and community resource persons in collecting project monitoring data, entering these data into the PMIS, verifying these data, and reporting the project monitoring data at all levels of the project (e.g., PMU, HPFD, DPO, APO, village/community/farmer level). The Consultant will describe the detailed M&E workflow in an MIS support system manual, including questionnaires and protocols at all levels of the project (e.g., PMU, DPO, APO, community/farmer level). The manual will include a detailed work plan and budget.

### 4.2.3 Training on M&E Implementation arrangements

The Consultant will train key project staff at all levels in the relevant M&E procedures using the MIS support system manual.

## *5. DURATION OF THE ASSIGNMENT*

This duration of the assignment is 48 months from contract signature date. This includes design, development, and deployment phase of 12 months and an operation and maintenance (AMC) period of

36 months. AMC will be provided for a period of 36 months after satisfactory completion of the design, development, and deployment phase [first year], and Programmers are likely to be employed for a period of 24 man-months during the AMC period of 36 months.

## *6. TEAM COMPOSITION AND QUALIFICATION REQUIREMENTS FOR THE KEY EXPERTS (AND ANY OTHER REQUIREMENTS WHICH WILL BE USED FOR EVALUATING THE KEY EXPERTS UNDER DATA SHEET 21.1 OF THE ITC)*

The PMU will assess the demonstrated experience and capacity of interested consulting firms applying for this assignment. The assignment requires a firm with experience in design, development, deployment, operations and maintenance of Project Management Information Systems including Application development.

The selected Firm will be expected to deploy sufficient amount of manpower required to successfully deliver the assignment. An indicative manpower requirement for the assignment duration of a total of 48 months [including 36 months AMC] must include Key Experts of suitable qualifications and experience for the key positions as tabulated below. It may be noted that key experts are expected to work out of PMU, HPFD for effective coordination, from time to time.

6.1 Table (Key Experts)

| **Key Position** | **Name of the Position, Number of Positions and Expected Role** | **Minimum Qualification and Desired Experience** | **Person Months required [including 36 months AMC]** |
|---|---|---|---|
| K1 | Project Team Leader – 1 Number<br><br>*This position is expected to be partly home / office based and partly field based.*<br><br>*The Project Team Leader is expected to perform the role of a Solution Architect.*<br><br>*Supervise the consulting team and ensure that inputs and activities are of high quality.*<br><br>*Preparation of the scheduling and planning of project implementation*<br><br>*Coordination of entire assignment*<br><br>*Represent the Firm in meetings* | Post graduate in IT/Computer Science from recognized University.<br><br>Minimum 10- 14 years of work experience in leading teams for designing, operating and/or managing large scale multi-location systems in multi-vendor environment. This should include amongst others, the following:<br><br>Should have demonstrated expertise of 8 years in developing and maintaining program monitoring/ management systems, preferably web based, for externally aided projects.<br><br>Minimum experience of 8 years of having managed a division/an independent team of minimum 20 team members | 11 [inclusive 3 months during AMC] |

| Key Position | Name of the Position, Number of Positions and Expected Role | Minimum Qualification and Desired Experience | Person Months required [including 36 months AMC] |
|---|---|---|---|
| | | Minimum experience of 5 years in providing MIS based solution architecture integrated with GIS based system. | |
| K2 | Senior IT Specialist – 1 Number<br><br>*This position is expected to be partly home / office based and partly field based.*<br><br>*The Senior IT Specialist is expected to perform the role of designing and complying the various application and business level layers in close coordination with project team lead and database administrator.*<br>*Supervise the consulting team (including non -key experts) and ensure that inputs and activities are of high quality.* | Advanced degree in Computer Science or IT from recognized University.<br><br>Minimum 5- 10 years of work experience in designing, operating and/or managing large scale multi-location systems in multi-vendor environment.<br><br>Should have expertise in development of web based systems for large projects and designing suitable solutions for a scalable and modular MIS system along with alternative options of overall architecture.<br>Should have expertise in developing GIS based framework for gathering, managing, and analysing geo spatial Meta data integrated with ICT / MIS based solutions. | 13 [inclusive 3 months during AMC] |
| *K3* | Sr. Database Administrator - 1-Number<br><br>*The Senior database administrator is expected to perform the role of designing & compiling the database layers and designing the database architecture in close coordination with project team lead, Sr. software specialist, GIS and Android developers.*<br><br>*Guiding the consulting team (non - key experts and application developers) to ensure relational* | Advanced degree in Computer Science or IT or related discipline from recognized University. Minimum 5- 10 years of work experience in designing, developing and/or managing large scale database systems.<br><br>Should have expertise in defining data warehouse tool requirements on database types and query/reporting requirements including their frequency and distribution list, availability on reports portal, | 13 [inclusive 3 months during AMC] |

| Key Position | Name of the Position, Number of Positions and Expected Role | Minimum Qualification and Desired Experience | Person Months required [including 36 months AMC] |
|---|---|---|---|
| | *database integrity and integration with business layers, API's and other required third party tools (GIS / Android framework).*<br>*This position is expected to be part of AMC Period of 36 months.* | data security management including schedule of authorization, access control etc. Should have expertise in GIS based application development, develop framework for gathering, managing, and analyzing geo spatial meta data integrated with ICT based solutions. | |
| K – 4 | Android Application developer - 1 Number<br><br>*The Android developer is expected to perform the role of designing application (APP) architecture (Application and business layers) in close coordination with project team lead, Sr. software specialist, GIS and database administrator.*<br><br>*Guiding the consulting team (non - key experts and application developers) to ensure integration at web based business layers, API's and other required third party tools (GIS Arc map / viewer etc.).* | Advanced degree in Computer Science or IT from recognized University. Minimum 5- 7 years of work experience in designing, operating and/or managing android based applications. Must be expert level proficiency in JAVA. Must have experience in Android studio, SDK, API's and other required tools. Must have expertise in cross –platform solutions (Google – Apple – Windows). Should have expertise in GIS (Google or any other GIS applications) based mobile interface - integration designing. Must have developed 2-3 mobile based applications of either of platforms. Android based would be preferred. | 5 |
| TOTAL | | | 42 |

Proposed list of non-key experts expected to satisfactorily perform this assignment is as per table below. Some of these experts such as Programmers will mandatorily be part of team proposed and the remaining non-key experts are optional, and their need will be assessed based on the work-plan proposed by the consultant.

6.2 Table (Non Key Experts)

| Name of the Position, Number of Positions and Expected Role | Minimum Qualification and Desired Experience | Person Months required [including 36 months AMC] |
|---|---|---|
| Non-Key Experts: | *Programmers*: | 72 Months [inclusive 24 |

| | | |
|---|---|---|
| Programmers/End User Trainers/Knowledge Management/IT administrator/Other experts | Graduate with Computer Engineering qualification or Science graduate with PG Diploma in Information Technology or equivalent from recognized University.<br><br>Minimum 2- 5 years of work experience in software development. Should be well versed with programming languages, i.e. java, C++, .NET framework, web development and server side technologies. Should have expertise in database types and query/reporting requirements including their frequency and distribution list, availability on reports portal etc. | months during AMC] |

## 7. *REPORTING REQUIREMENTS AND TIME SCHEDULE FOR DELIVERABLES*

The expected reporting requirements with deliverables and likely payment schedule is tabulated below. All reports should be submitted to the Chief Project Director, IDP for review and feedback and recommendations of the Technical Review Committee. Feedback on the submissions of the Consultant shall be provided within 5 to 10 calendar days of submission. All reports will be delivered to Chief Project Director, HP Integratd Development project, Forest Road, Solan, H.P. - 173212 The final report should have the revision and recommendations incorporated.

| **S. No./ Stage** | **Deliverables (Reports Detailing Activities to be Performed)** | **Number of Copies and Format [Hard Copy/Soft Copy in PDF/Word] Formats** | **Time Schedule from the date of signing contract (T)** | **Deliverable Linked to Payment [Yes/No]** | **% of the contract amount to be paid** |
|---|---|---|---|---|---|
| Stage 1 | Inception report acceptable to PMU HPFD outlining understanding of user requirements, approach, methodology and detailed work-plan to be done in stages 2, 3 | 2 numbers of hard Copy<br>1 Soft Copy (Word / PDF) | T + 1 month | Yes | 10% upon acceptance of the Inception Report by the PMU, HPFD |

| S. No./ Stage | Deliverables (Reports Detailing Activities to be Performed) | Number of Copies and Format [Hard Copy/Soft Copy in PDF/Word] Formats | Time Schedule from the date of signing contract (T) | Deliverable Linked to Payment [Yes/No] | % of the contract amount to be paid |
|---|---|---|---|---|---|
| | and 4 of this table<br>Prepare a detailed M&E workflow specifying the roles and responsibilities of project staff and community resource persons. | | | | |
| Stage 2 | Report on System Requirement Specifications [SRS] including draft PMIS design, acceptable to PMU, HPFD<br><br>The report should contain, at the minimum, the following details:<br><br>▪ Development of Solution Architecture<br>▪ Development of SRS<br>▪ Draft MIS design document (incorporating performance areas, indicators, Result Framework, sources and destination of data collection, recording, aggregation/ filtering and transmission procedures and instruments, periodicity, etc.)<br>▪ Details of | 2 numbers of hard Copy<br>1 Soft Copy (Word / PDF) | T + 2 months | Yes | 10% upon acceptance of the SRS Report by the PMU, HPFD |

| S. No./ Stage | Deliverables (Reports Detailing Activities to be Performed) | Number of Copies and Format [Hard Copy/Soft Copy in PDF/Word] Formats | Time Schedule from the date of signing contract (T) | Deliverable Linked to Payment [Yes/No] | % of the contract amount to be paid |
|---|---|---|---|---|---|
| | presentation made to the PMU, HPFD of MIS platform prototype, gist of discussions and details of feedback received from PMU, HPFD, and document decision on the way forward. | | | | |
| Stage 3 | Development, deployment and hosting of PMIS application and android application on server, play store, mobile / tablets / smartphone.<br><br>Report / support plans on deployment and hosting PMIS including various reporting formats, acceptable to PMU, HPFD<br><br>The development, deployment and test case report should contain at the minimum, the following details:<br><br>▪ Software development<br>▪ Plans proposed for system maintenance along with inputs/manuals required, such as deployment plan, | 2 numbers of hard Copy<br>1 Soft Copy (Word / PDF)<br><br>Source Code in encrypted HDD / CD / USB | T + 8 months | Yes | 30% upon acceptance of the development, deployment and test case report by the PMU, HPFD |

| S. No./ Stage | Deliverables (Reports Detailing Activities to be Performed) | Number of Copies and Format [Hard Copy/Soft Copy in PDF/Word] Formats | Time Schedule from the date of signing contract (T) | Deliverable Linked to Payment [Yes/No] | % of the contract amount to be paid |
|---|---|---|---|---|---|
| | support plan, training plan with proposed training manual, strategy and training materials, and test management plan<br>▪ Deployment of application software using the source code in encrypted HDD/USB or DVD media provided to the project and instructions along with a operational manual (after doing necessary pilot cloud hosting testing);<br>▪ Test case report including identifications of bug (coding / logic errors), descriptions, timelines to resolve the bugs. Details of testing of the software on live data and generation of sample performance reports, modification as needed<br>▪ Detailed MIS support system manual specifying the roles and responsibilities of project staff and | | | | |

| S. No./ Stage | Deliverables (Reports Detailing Activities to be Performed) | Number of Copies and Format [Hard Copy/Soft Copy in PDF/Word] Formats | Time Schedule from the date of signing contract (T) | Deliverable Linked to Payment [Yes/No] | % of the contract amount to be paid |
|---|---|---|---|---|---|
| | community resource persons in collecting project monitoring data, entering these data into the PMIS, verifying these data, and reporting the project monitoring data at all levels of the project (e.g., PMU, DPO, APO, community/farmer level). The MIS support system manual should include a detailed guideline to integrate with PMIS / GIS modules, planning / implementation of project activities / interventions, work plan and budget. | | | | |
| Stage 4 | Report on [Para 3.1.5] training delivered as per agreed training plan and strategy, with annexes consisting of [i] user and training manuals acceptable to PMU, HPFD, and, [ii] operations manual including the final software design document acceptable to PMU, HPFD; and [iii] final system maintenance manual acceptable to PMU, HPFD. | 2 numbers of hard Copy<br>1 Soft Copy (Word / PDF) | T + 10 months | Yes | 10% upon acceptance of manuals (User, Operation & system maintenance) and trainings delivered as per para 3.1.5 (Agreed training plan and strategy) |

| S. No./ Stage | Deliverables (Reports Detailing Activities to be Performed) | Number of Copies and Format [Hard Copy/Soft Copy in PDF/Word] Formats | Time Schedule from the date of signing contract (T) | Deliverable Linked to Payment [Yes/No] | % of the contract amount to be paid |
|---|---|---|---|---|---|
| | This training report should include at the minimum:<br>▪ Training at various levels as per plan and feedback from users submitted (2-3 number of trainings to all levels of PMIS officials on operating functionalities of the software (User Manual).1-2 number of trainings on the operational functionalities to core IT or MIS team members (Operational Manual))<br>▪ Training materials used for trainings<br>▪ Final Software design document and application software acceptable to Project technical review committee.<br>▪ Final system maintenance manual acceptable to the Project Technical Review Committee | | | | |
| Stage 5 | During the period of AMC [36 months], half-yearly reports on handholding and | 2 numbers of hard Copy<br>1 Soft Copy | 36 months from the acceptance of the test case reports, manuals, | | 40 % [6% + 6% + 6% + 6% + 6% + 4%] |

| S. No./ Stage | Deliverables (Reports Detailing Activities to be Performed) | Number of Copies and Format [Hard Copy/Soft Copy in PDF/Word] Formats | Time Schedule from the date of signing contract (T) | Deliverable Linked to Payment [Yes/No] | % of the contract amount to be paid |
|---|---|---|---|---|---|
| | maintenance provided during the prior six months in accordance with system maintenance manual acceptable to the PMU, HPFD<br><br>List of 3rd party tools being used and licenses : The consultant will also handover final source code of the application along with relevant documents. Project will be the absolute owner of the software and will have all intellectual property rights [IPR] related to the software and the consultant shall not replicate or reproduce or use without the consent of the owner. | (Word / PDF) | application source code, deployment / hosting resources by the Technical Review Committee (Stage 3) and full stream operationalization of the application, after the completion of first year of operations for the application. | | of the contract as below :<br><br>6 % for first half-yearly report for 0-6 months of AMC period<br><br>6 % for second half-yearly report for $7^{th}$-12 months of AMC period<br><br>6 % for third half-yearly report for $13^{th}$-$18^{th}$ months of AMC period<br><br>6 % for fourth half-yearly report for $19^{th}$-$24^{th}$ months of AMC period<br><br>6 % for fifth half-yearly report for $25^{th}$-$30^{th}$ months of AMC period<br><br>6 % of 31st-$36^{th}$ months of AMC |

| S. No./ Stage | Deliverables (Reports Detailing Activities to be Performed) | Number of Copies and Format [Hard Copy/Soft Copy in PDF/Word] Formats | Time Schedule from the date of signing contract (T) | Deliverable Linked to Payment [Yes/No] | % of the contract amount to be paid |
|---|---|---|---|---|---|
| | | | | | period<br><br>4% upon handover of list of 3rd party tools being used and licenses, final source code of the application and any other relevant documents needed by the PMU, HPFD to maintain the system. |

## *8. CLIENT'S INPUT AND COUNTERPART PERSONNEL*

The counterpart personnel, inputs and facilities to be made available by the PMU, HPFD to the selected Consultant are listed below:

- The PMU will purchase the smartphones required for field-level data collection and made these available on a timely basis.
- The PMU will provide infrastructural support, including hosting on server/cloud and domain management and security issues.
- The PMU, HPFD will provide Project PIP, grant manuals, financial management manuals, MIS architecture documents and MS Excel based prototypes etc. and all other relevant documents, under its control and copyright, for reference by the Consultant.
- The PMU shall provide access to relevant staff of the PMU, District Project Office and Assistant Project Office.
- The PMU MIS / M&E Specialist shall provide other relevant documents and organize regular feedback sessions where interaction between the concerned officials and the consultant will be undertaken.
- All project documents, which are not classified documents, will be made available to the consultant for the purpose of assignment.

- PMU will facilitate cooperation from the concerned departments of HP Government such as HD, AHD, RD, PRD, Financed Department, NIC team of Government of Himachal Pradesh, etc.
- The PMU, HPFD shall provide coordination for activities like user training, acceptance testing and deployment
- The PMU, HPFD shall provide at its premises, provide or assign a room for use of the Consultant free of cost, upon request.
- The PMU, HPFD shall provide conference halls, meeting rooms, rest rooms etc. as may be required during the assignment for the purpose of presentation, submission of reports, workshops, brainstorming sessions and meetings.

The Consultant is expected to make its own arrangements for stationery, printing of documents/reports, laptops/personal mobile devices/internet connectivity/data cards, etc. and any other items considered essential for discharging responsibilities for to ensure timely and satisfactory completion of the assignment.

The consultant is encouraged to visit the project area and familiarize themselves, at their own cost, before submitting the proposal.

## *9. COMPOSITION OF REVIEW COMMITTEE TO MONITOR CONSULTANTS WORK*

The Consultant shall work as part of the PMU under the supervision and guidance of a Chief Project Director (CPD) and Executive Director (ED), IDP, Solan for timely and satisfactory completion of the assignment in order to achieve the PDO.

The Consultant shall report to the ED, IDP for day to day management/ progress.

The Chief Project Director (CPD) or authority designated by the CPD shall be responsible for review and monitoring the progress of the assignment.

The performance of the consultant would be judged on the basis of work done against the agreed work plan outlined in the Inception Report approved by the PMU, HPFD. The consultant will generate deliverable/reports as per Para 5 of the TOR. A Project Technical Review Committee under the Chairmanship of the Chief Project Director, consisting of thematic specialists from within and outside IDP, as deemed appropriate, shall be constituted to undertake a review of the work produced by the consultant from time to time. The likely composition of this team is as follows:

| | | |
|---|---|---|
| i. | Dy. Director (Admin.), IDP, Solan | Member |
| ii. | Dy. Controller (F&A.), IDP, Solan | Member |
| iii. | Dy. Director (Planning), IDP, Solan | Member |
| iv. | Executive Engineer, IDP, Solan | Member |
| v. | Subject Matter Specialist (Agriculture), IDP | Member |
| vi. | Subject Matter Specialist (AH), IDP | Member |
| vii. | Subject Matter Specialist (Social), IDP | Member |
| viii. | Subject Matter Specialist (Environment), IDP | Member |
| ix. | Subject Matter Specialist (IT / GIS), IDP | Member |
| x. | Representative of State Data Center (NIC) | Member |

## *10. OWNERSHIP*

The HPFD shall be the owner of all the reports, data, and materials pertaining to the delivery of this assignment. The consultant will have no right of claim to the assignment or its outputs and shall not use or replicate any report or the contents of the documents without the explicit prior written consent of the PMU, HPFD. Any background documents, including statistics and data obtained by the consultant during the execution of this ToR, shall be transferred back to the PMU, HPFD upon completion of the assignment. Final version of the application software would also be delivered to the PMU, HPFD along with the source code at every stage.

*Annex A*

**Key Interventions/activities (to be updated during inception phase):**

**Component-1: Source Sustainability / Sustainable Land and Water Resource Management**

**1. Biological and Engineering Measures**

**1.1 Plantations**

a. Conservation plantations
- Three tier plantations: trees, shrubs and herbs/grasses
- Two tier plantations: Trees and herbs

b. Enrichment plantations
- 400, 500, 600, 700, or 800 plants per hectare

c. Plantation along drainage lines
- Two tier plantation of Bamboo, water loving species and grasses.

**1.2 Lantana eradication**

1.3 **Contour trenching** (for moisture conservation) along with grass seed sowing/ planting
- Contour trenches
- Grass seeds/seedling sowing/planting

**1.4 Drainage lines Treatment**
- Dry Stone barriers along with vegetative measures
- Crate wire barriers along with vegetative barriers

**1.5 Water Harvesting and Irrigation**
- Renovation and rehabilitation of traditional water sources
- Ponds
- Tanks
  - New
  - Repair of existing non functional
- Gravity Check Dams (Cement Concrete, Masonry, Earthen)
- Minor Irrigation Schemes
  - Gravity
  - Lift

**1.6 Impact Evaluation**
- Silt Observatory Posts

**Component-2: Improved Agricultural Productivity and Value Addition:**

**2.1 INSTITUTIONAL STRENGTHENING**

**2.1.1 FARM TRAINING**
- Capacity Building
- Farming Camps
- Livestock Shows

**2.2 AGRICULTURE**
- Land Development Programme
- Rainfed Crop Demonstration(Rabi)
- Rainfed Crop Demonstration(Kharif)
- Rainfed Crop Demonstration PULSES
- High Value Crops Demonstrations
- Diversification – Vegetable and Spices
- Diversification – Medicinal, Aromatic Plants & Floriculture

- Promotion of Organic farming – Vermicomposting
- Zero Based Natural Farming
- Agro Forestry(notional 100Plts/ha)
- Homestead Horticulture
- Pre & Post Harvest Technologies

**2.3 FODDER**

- Manger Construction
- Chaff Cutters
- Fodder Augmentation
- Fodder Conservation

**2.4 LIVESTOCK**

- Veterinary Health Treatment Camps
- Promotion of Climate Resilient Indigenous Breeds
- Renovation of Cattle shed

**2.5 TRIBAL ACTION PLAN**

- Training and Exposure Visits
- Deworming of Flocks
- Flock Management
- Genetic Improvement – (Rams, Bucks, etc.)

**2.6 AGRIBUSINESSES**

**2.6.1 Support to Crop Based Subprojects**

- Nursery raising
- Hydroponics
- Protected Agriculture
- Mushroom farming
- HVC Processing
- Floriculture
- Apiculture

**2.6.2 Support to Livestock Based Subprojects**

- Goat
- Sheep
- Dairy
- Poultry
- Piggy
- Fishery

**2.6.3 Support to NTFP Based Subprojects**

**2.6.4 ENHANCING MARKET ACCESSIBILITY**

- Foot Bridges/ Ropeways etc.

**Component-3: Institutional Capacity Building for Integrated Watershed Management and making policy trade-offs:**

3.1 **Information, Education & Communication (IEC)** for awareness about the project, access to information, terms of participation and overall transparency among all the

stakeholders. This will include preparation of Brochure, Pamphlets, Booklets, Banners, Hoardings etc

3.2 **Forming and strengthening local institutions**:

- Formation of specific user groups (Ugs) and common activity groups (CAGs) for the inclusiveness of vulnerable and disadvantaged groups – women, poor, transhumant, landless, small/ marginal farmers for particular activity as and when activity picks up
- Promote and support the federations (of SHGs, CAGs)
- Disburse incentive fund to the GPs selected based on their performance against certain select indicators.

**3.3 Human Resource Development:**

- Capacity Building of staff and Community by imparting training, workshops and exposure visits.

3.4 **Knowledge Management:** Under this component management of information system will be developed and implemented. This includes an integrated information and knowledge system for effective project implementation, physical and financial monitoring, assessment of key performance monitoring indicators, and consultancy support to the project.

3.5. **Convergence:**

To obtain wider impacts through joint strategies/actions and sharing of resources, shared values, responsibilities and gap filling with the ongoing Govt. schemes being implemented in Gram Panchayats (GPs) by various line departments e.g. Rashtriya Krishi Vikas Yojna (RKVY), MGNREGA etc.

**Component-4: Project Management:**

**Annex B**

**Results Framework**

**Project Development Objective:** To improve upstream watershed management and increase agricultural water productivity in selected Gram Panchayats in Himachal Pradesh.

## Project Development Objective (PDO) Indicators

| Indicator Name | DLI | Baseline | Intermediate Targets | | | | End Target |
|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | |
| **To improve upstream watershed management in selected Gram Panchayats (GPs) in Himachal Pradesh.** | | | | | | | |
| Land area under sustainable landscape management practices (CRI, Hectare(Ha)) | | 0.00 | 5,000.00 | 10,000.00 | 10,000.00 | 11,000.00 | 12,000.00 |
| **Description**: The indicator measures, in hectares, the land area for which new and/or improved sustainable landscape management practices have been introduced. Land is the terrestrial biologically productive system comprising soil, vegetation, and the associated ecological and hydrological processes; Adoption refers to change of practice or change in the use of a technology promoted or introduced by the project; Sustainable landscape management (SLM) practices refers to a combination of at least two technologies and approaches to increase land quality and restore degraded lands for example, agronomic, vegetative, structural, and management measures that, applied as a combination, increase the connectivity between protected areas, forest land, rangeland, and agriculture land.<br><br>**Frequency/Data Source/Methodology/Responsibility for Data Collection:** Continuous. PMIS. Land survey using GPS geo-fencing (Linked to GIS files). DPO and aggregated at PMU. Additionally ground-truthing in midterm and endterm evaluation by M&E Agency. | | | | | | | |
| Area managed for improved soil (Hectare(Ha)) | | 0.00 | 0.00 | 200.00 | 500.00 | 1,000.00 | 1,200.00 |
| **Description**: This is a supplemental indicator that will measure the area under all soil conservation investments, including physical investments (check dams, contour bunds, etc.) and improved farming practices that increase soil quality and/or reduce erosion.<br><br>**Frequency/Data Source/Methodology/Responsibility for Data Collection:** Continuous. PMIS. Land survey using GPS geo-fencing (Linked to GIS files). DPO and aggregated at PMU. Additionally ground-truthing in midterm and endterm evaluation by M&E Agency. | | | | | | | |
| Number of reforms recommended by the institutional assessments that are implemented (Number) | | 0.00 | 0.00 | 0.00 | 1.00 | 3.00 | 5.00 |
| **Description:** This indicator will measure progress towards institutional and policy reform based on the completion of reforms identified in the Forest Department Functional Review and the Integrated Watershed Management Institutional Review. These reforms may include inter alia the (a) development and implementation of a comprehensive HPFD IT and knowledge strategy that | | | | | | | |

| Indicator Name | DLI | Baseline | Intermediate Targets | | | | End Target |
|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | |
| integrates all relevant applications on a common geospatial platform and allows for watershed-level planning; (b) development and implementation of a comprehensive HPFD M&E system; (c) establishment of a centralized staff performance monitoring system; and (d) development of regulatory and management standards for pastures.<br><br>**Frequency/Data Source/Methodology/Responsibility for Data Collection:** Continuous. PMIS. As reported by PMU/HPFD. | | | | | | | |
| **To increase agricultural water productivity in selected Gram Panchayats (GPs) in Himachal Pradesh.** | | | | | | | |
| New farm area brought under higher efficiency irrigation through project support in targeted GPs (Hectare(Ha)) | | 0.00 | 0.00 | 50.00 | 100.00 | 150.00 | 200.00 |
| **Description:** This is an outcome-level PDO indicator that will measure the new farm area brought under higher efficiency irrigation systems in the GPs targeted by the project. Higher efficiency irrigation systems include drip, sprinkler, and other water storage, distribution, and delivery systems with efficiencies higher than traditional flood irrigation. This indicator measures the short-term (2 years) behavior-change outcome of greater adoption of higher efficiency irrigation systems, which will be influenced by project investments in improved extension and partial funding for group and household-level water infrastructure. In the medium term (by end of project, EOP), the combined adoption of these improved irrigation systems and higher-value crops is expected to lead to improved agricultural water productivity, and in the longer-term (beyond EOP) these outcomes are expected to lead to improved farmer incomes and greater climate resilience.<br><br>**Frequency/Data Source/Methodology/Responsibility for Data Collection:** Continuous. PMIS. Self-reported farm land data by farmers. APO and AEO will collect data; DPO monitors. Groundtruthed in mid-term and endline evaluation by M&E Agency. | | | | | | | |
| Share of participating farmers adopting climate smart agriculture practices (Percentage) | | 0.00 | 0.00 | 15.00 | 30.00 | 40.00 | 50.00 |
| **Description**: This is a medium-term outcome-level indicator that will measure behavior change by farmers project participants in terms of sufficient adoption of recommended CSA practices. This is driven by project investments in improved extension and access to finance for inputs required to adopt CSA technologies. "Project participants" is defined as all farmers that are provided with any Component 2 activity, including trainings, demonstrations, inputs, marketing, and grants. In the longer-term, it is expected that adoption of CSA practices will lead to increased agricultural water productivity, increased carbon sequestration, and increased climate resilience.<br><br>**Frequency/Data Source/Methodology/Responsibility for Data Collection:** 1 per rabi and 1 kharif in each year. PMIS. Mid-term and endline and possibly process monitoring. Sample basis. APO staff. Process monitoring agency is preferable. Midterm and endline evaluation by M&E Agency. | | | | | | | |
| Share of participating farmers adopting climate smart practices that are female (Percentage) | | 0.00 | 0.00 | 10.00 | 15.00 | 20.00 | 30.00 |
| **Frequency/Data Source/Methodology/Responsibility for Data Collection:** 1 per rabi and 1 kharif in each year. PMIS. Mid-term and endline and possibly process monitoring. Sample basis. APO staff. Process monitoring agency is preferable. Midterm and endline evaluation by M&E Agency. | | | | | | | |
| Share of participating farmers | | 0.00 | 0.00 | 30.00 | 50.00 | 70.00 | 75.00 |

| Indicator Name | DLI | Baseline | Intermediate Targets | | | | End Target |
|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | |
| who give a rating of "Satisfied" or above on process and realized benefits of project interventions (Percentage) | | | | | | | |
| **Description**: This is a citizen engagement indicator to measure beneficiaries' satisfaction with the project's interventions. This may be composite indicator derived from several ratings of inclusiveness and participation.<br><br>**Frequency/Data Source/Methodology/Responsibility for Data Collection:** Mid-term and endline. Mid-term and endline surveys. Sample survey. M&E Agency. | | | | | | | |
| Share of participating female farmers who give a rating of "Satisfied" or above on process and realized benefits of project interventions (Percentage) | | 0.00 | 0.00 | 30.00 | 50.00 | 70.00 | 75.00 |
| **Description:** This indicator will measure the level of satisfaction with the project of female beneficiaries. This may be composite indicator derived from several ratings of inclusiveness and participation<br><br>**Frequency/Data Source/Methodology/Responsibility for Data Collection:** Mid-term and endline. Mid-term and endline surveys. Sample survey. M&E Agency. | | | | | | | |

## Intermediate Results Indicators by Components

| Indicator Name | DLI | Baseline | Intermediate Targets | | | | End Target |
|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | |
| **Component 1. Sustainable Land and Water Resource Management** | | | | | | | |
| Survival rate of seedlings planted with project support (Percentage) | | 0.00 | 60.00 | 65.00 | 70.00 | 80.00 | 80.00 |
| **Description**: Survival rate of seedlings relates to the PDO objective to improve management of upstream forests and pasture areas in accordance with resource management plans because good seedling survival is a prerequisite for successful plantations. This is an outcome-level indicator that stems from project investments in improved nursery development, training, and grazing/fire management in plantations under Component 1 and capacity building for the HPFD and communities under Component 3. This indicator measures a short-term outcome directly attributable to the project that will lead to longer-term project impacts, including improved forest cover and carbon sequestration.<br>**Frequency/Data Source/Methodology/Responsibility for Data Collection:** Annually in March. PMIS. Census in each round; denominator is the number of plants planted in that scheme and will get replanted. APO. | | | | | | | |

| Indicator Name | DLI | Baseline | Intermediate Targets | | | | End Target |
|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | |
| Percentage of women signatories engaged in approving GP-RMPs (Percentage) | | 0.00 | 20.00 | 30.00 | 30.00 | 30.00 | 30.00 |
| **Description**: This indicator will measure the closure of a gender gap related to women's roles as planners and decision-makers related to natural resources in their communities. Percentage of women signatories will be monitored for every targeted GP."GP-RMP" refers to the Gram Panchayat Resource Management Plan, which will be the primary planning process used to inform project investments.<br>**Frequency/Data Source/Methodology/Responsibility for Data Collection:** Ongoing for GPRMPs (year 1). PMIS. Extension officers record from GPRMP Gram Sabha minutes. APO/DPO with PMU aggregating. | | | | | | | |
| **Component 2. Improved Agricultural Productivity and Value Addition** | | | | | | | |
| Farmers reached with agricultural assets or services (CRI, Number) | | 0.00 | 0.00 | 8,000.00 | 12,000.00 | 18,000.00 | 20,000.00 |
| **Description**: This indicator measures the number of farmers who were provided with agricultural assets or services as a result of World Bank project support. "Agriculture" or "Agricultural" includes: crops, livestock, capture fisheries, aquaculture, agroforestry, timber, and non-timber forest products. Assets include property, biological assets, and farm and processing equipment. Biological assets may include animal agriculture breeds (e.g., livestock, fisheries) and genetic material of livestock, crops, trees, and shrubs (including fiber and fuel crops). Services include research, extension, training, education, ICTs, inputs (e.g., fertilizers, pesticides, labor), production-related services (e.g., soil testing, animal health/veterinary services), phyto-sanitary and food safety services, agricultural marketing support services (e.g., price monitoring, export promotion), access to farm and post-harvest machinery and storage facilities, employment, irrigation and drainage, and finance. Farmers are people engaged in agricultural activities or members of an agriculture-related business (disaggregated by men and women) targeted by the project.<br>**Frequency/Data Source/Methodology/Responsibility for Data Collection:** Continuous. PMIS. Outreach by intervention of aggregated numbers per village per output will be recorded at individual level by gender, aggregated number of households. Extension officers of APO, aggregated at DPO and PMU. May be verified by mid-term and end-term evaluation. | | | | | | | |
| Farmers reached with agricultural assets or services - Female (CRI, Number) | | 0.00 | 0.00 | 1,000.00 | 3,000.00 | 4,280.00 | 4,280.00 |
| **Frequency/Data Source/Methodology/Responsibility for Data Collection:** Continuous. PMIS. Outreach by intervention of aggregated numbers per village per output will be recorded at individual level by gender, aggregated number of households. Extension officers of APO, aggregated at DPO and PMU. May be verified by mid-term and end-term evaluation. | | | | | | | |
| Farmers reached with agricultural extension or training – Male (Number) | | 0.00 | 0.00 | 0.00 | 2,000.00 | 5,000.00 | 10,000.00 |
| **Frequency/Data Source/Methodology/Responsibility for Data Collection:** Continuous. PMIS. Outreach by intervention of aggregated numbers per village per output will be recorded at individual level by gender, aggregated number of households. Extension officers of APO, aggregated at DPO and PMU. May be verified by mid-term and end-term evaluation. | | | | | | | |
| Farmers reached with agricultural extension or training – Female (Number) | | 0.00 | 0.00 | 0.00 | 1,000.00 | 2,000.00 | 3,000.00 |
| **Frequency/Data Source/Methodology/Responsibility for Data Collection:** Continuous. PMIS. Outreach by intervention of aggregated numbers per village per output will be recorded at individual level by gender, aggregated number of households. Extension officers of APO, aggregated at DPO and PMU. May be verified by mid-term and end-term evaluation. | | | | | | | |
| Farmers adopting improved | | 0.00 | 0.00 | 1,000.00 | 3,000.00 | 5,000.00 | 10,000.00 |

| Indicator Name | DLI | Baseline | Intermediate Targets | | | | End Target |
|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | |
| agricultural technology (CRI, Number) | | | | | | | |
| **Description**: This indicator measures the number of farmers (of agricultural products) who have adopted an improved agricultural technology promoted by operations supported by the World Bank. NB: "Agriculture" or "Agricultural" includes: crops, livestock, capture fisheries, aquaculture, agroforestry, timber and non-timber forest products.<br>Adoption refers to a change of practice or change in use of a technology that was introduced or promoted by the project.<br>Technology includes a change in practices compared to currently used practices or technologies (seed preparation, planting time, feeding schedule, feeding ingredients, postharvest storage/ processing, etc.). If the project introduces or promotes a technology package in which the benefit depends on the application of the entire package (e.g., a combination of inputs such as a new variety and advice on agronomic practices such as soil preparation, changes in seeding time, fertilizer schedule, plant protection, etc.), this counts as one technology.<br>Farmers are people engaged in farming of agricultural products or members of an agriculture related business (disaggregated by men and women) targeted by the project.<br>**Frequency/Data Source/Methodology/Responsibility for Data Collection:** 1 per rabi and 1 per kharif. PMIS and mid-term and endline evaluation survey. Possibly also process monitoring. Sample basis. APO staff. Process monitoring agency preferable. Also mid-term and end-term evaluation M&E Agency. | | | | | | | |
| Farmers adopting improved agricultural technology - Female (CRI, Number) | | 0.00 | 0.00 | 300.00 | 1,000.00 | 2,000.00 | 3,000.00 |
| **Frequency/Data Source/Methodology/Responsibility for Data Collection:** 1 per rabi and 1 per kharif. PMIS and mid-term and endline evaluation survey. Possibly also process monitoring. Sample basis. APO staff. Process monitoring agency preferable. Also mid-term and end-term evaluation M&E Agency. | | | | | | | |
| Farmers adopting improved agricultural technology - male (CRI, Number) | | 0.00 | 0.00 | 700.00 | 2,000.00 | 5,000.00 | 7,000.00 |
| **Frequency/Data Source/Methodology/Responsibility for Data Collection:** 1 per rabi and 1 per kharif. PMIS and mid-term and endline evaluation survey. Possibly also process monitoring. Sample basis. APO staff. Process monitoring agency preferable. Also mid-term and end-term evaluation M&E Agency. | | | | | | | |
| Area provided with new/improved irrigation or drainage services (CRI, Hectare(Ha)) | | 0.00 | 0.00 | 500.00 | 1,000.00 | 1,500.00 | 1,500.00 |
| **Description**:This indicator measures the total area of land provided with irrigation and drainage services under the project, including in (i) the area provided with new irrigation and drainage services,and (ii) the area provided with improved irrigation and drainage services, expressed in hectare (ha).<br>**Frequency/Data Source/Methodology/Responsibility for Data Collection:** Continuous. Self reported farm land data by farmers (census). APO and AEO will collect data; and aggregated DPO and PMU. Groundtruthed in mid-term and endline evaluation. | | | | | | | |
| Area provided with new irrigation or drainage services (CRI, Hectare(Ha)) | | 0.00 | 0.00 | 500.00 | 1,000.00 | 1,300.00 | 1,300.00 |
| **Frequency/Data Source/Methodology/Responsibility for Data Collection:** Continuous. Self reported farm land data by farmers (census). APO and AEO will collect data; and aggregated DPO and PMU. Groundtruthed in mid-term and endline evaluation. | | | | | | | |
| Area provided with improved irrigation or drainage | | 0.00 | 0.00 | 50.00 | 100.00 | 150.00 | 200.00 |

| Indicator Name | DLI | Baseline | Intermediate Targets | | | | End Target |
|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | |
| services (CRI, Hectare(Ha)) | | | | | | | |
| **Frequency/Data Source/Methodology/Responsibility for Data Collection:** Continuous. Self reported farm land data by farmers (census). APO and AEO will collect data; and aggregated DPO and PMU. Groundtruthed in mid-term and endline evaluation. | | | | | | | |
| Share of user groups for agriculture extension services with female treasurers (Percentage) | | 0.00 | 0.00 | 0.00 | 10.00 | 20.00 | 30.00 |
| **Description**: This is a gender indicator to track the closure of a key gender gap related to women's leadership.<br>**Frequency/Data Source/Methodology/Responsibility for Data Collection:** Continuous. PMIS. Inspection of registers (census). APO and AEO will collect data; and aggregated by DPO and PMU. Groundtruthed in mid-term and endline evaluation. | | | | | | | |
| **Component 3. Institutional capacity building for integrated watershed management** | | | | | | | |
| Technical staff of participating line departments trained on integrated watershed management (Number) | | 0.00 | 50.00 | 100.00 | 150.00 | 300.00 | 400.00 |
| **Description**: This is an output-level indicator measuring the number of technical staff of line departments participating in the project (including project staff) that have been trained by the project. Each person that has participated in any training supported by the project will be counted only once.<br>**Frequency/Data Source/Methodology/Responsibility for Data Collection:** Collected at each training. PMIS. Actual count in training (census). APO and AEO will collect data; and aggregated by DPO and PMU. Groundtruthed in mid-term and endline evaluation. | | | | | | | |

## Additional indicators to collect in PMIS

## KPIs to accompany RF indicators

| | RF Indicator | Additional KPIs related to the RF Indicator | Frequency |
|---|---|---|---|
| | | **PDO Indicators** | |
| | Land area under sustainable landscape management practices | Number of GPRMPs prepared<br>Number of GPRMPs approved by GS<br><br>Number of sub-watersheds (roughly 5,000 ha) with soil and water conservation investments under-construction<br>Number of sub-watersheds with soil and water conservation investments completed and handed over to community<br><br>Land area under watershed area<br>Land area under forestry/government land<br>Land area under lantana eradication<br>Land area under plantation in SWS<br>Land area by type of plantation by SWS<br>Land area under contour trenching<br><br>Land area by type of improved management practices<br>Land area by type of watershed structure<br>Land area by primary storage structures | Project data: Continuous/ongoing |
| | Area managed for improved soil (conservation~~?~~) | Number of farmers (or if feasible farm area) by type of improved farming practices that improve soil quality/reduce erosion | Project data: Continuous/ongoing |
| | Number of reforms recommended by the institutional assessments that are implemented | | Project data: Continuous/ongoing |
| | New farm area brought under higher efficiency irrigation through project support in targeted GPs | Number of female farmers using higher efficiency irrigation<br>Number of male farmers using higher efficiency irrigation | Biannual by Process Monitoring |
| | Share of participating farmers adopting climate smart agriculture practices | Practices include 1) irrigation 2) use of fodder including curtailing grazing and using manger 3) soil nutrient mgmt. (IPM and INM) 4) other no-regret interventions may be considered by WB<br>% of farmers adopting specific practices<br>% adopting at least one | Project data: Continuous/ongoing |

| | | | |
|---|---|---|---|
| | | % adopting non negotiable set of practices<br>Area brought under high value crops (HVC) (ha)<br>Change in cropping pattern | Biannual by Process Monitoring |
| | Share of participating farmers adopting climate smart agriculture practices that are female | % of female farmers adopting specific practices<br>% of female farmers adopting at least one<br>% of female farmers adopting non negotiable set of practices | Biannual by Process Monitoring |
| | Share of participating farmers who give a rating of "Satisfied" or above on process and realized benefits of project interventions | | Biannual by Process Monitoring |
| | Share of participating female farmers who give a rating of "Satisfied" or above on process and realized benefits of project interventions | | Biannual by Process Monitoring |
| **Intermediate Results Indicators** | | | |
| **Component 1** | | | |
| | Survival rate of seedlings planted with project support | Survival rate by plantation type<br>Total number of surviving plants by type | Annual Project data |
| | Percentage of women signatories engaged in approving GP-RMPs | Number of men and women who attend the GS meeting<br>Number of men and women who approved the GPRMP | Project data-continuous |
| **Component 2** | | | |
| | Farmers reached with agricultural assets or services | Number of farmers reached by type of asset or service | Project data-continuous |
| | Farmers reached with agricultural assets or services – Female | Number of female farmers reached by type of asset or service | Project data-continuous |
| | Farmers reached with agricultural extension or training – Male | Disaggregated by type of training (crop wise, production technology wise)<br>Post training test of knowledge<br>Post training intention to adopt practices | Project data-continuous after each training. |
| | Farmers reached with agricultural extension or training – Female | | Project data-continuous after each training. |
| | Farmers adopting improved agricultural technology | Number or % of male farmers adopting interventions by type<br>Number or % of male farmers adopting core set of interventions<br>Number or % of female farmers adopting interventions by type | Biannual by Process Monitoring |
| | Farmers adopting improved agricultural technology - Female | | Biannual by Process Monitoring |

| | | | |
|---|---|---|---|
| | Farmers adopting improved agricultural technology - Male | Number or % of female farmers adopting core set of interventions | Biannual by Process Monitoring |
| | Area provided with new/improved irrigation or drainage services | Pondage capacity (hectare-meters)<br>Pondage developed (hectare-meters)<br>Annual water harvested<br>Number of irrigation schemes<br>Midterm and end-term Evaluation should measure agricultural water productivity<br>Irrigation potential utilized/Gross irrigated area (ha)<br><br>Total Cultivable command Area (CCA) developed (in ha) | Project data-continuous |
| | Area provided with new irrigation or drainage services | | Biannual by Process Monitoring |
| | Area provided with improved irrigation or drainage services | | Biannual by APO & DPO offices |
| | Share of user groups for agriculture extension services with female treasurers | Number of user groups for agriculture extension services with female treasurers<br>Total number of user groups for agriculture extension services | Project data-continuous |
| | Knowledge of trainers and farmers | Percentage of farmers with adequate learning at the end of training programs<br>Percentage of farmers who intend to apply training on the farm<br>Percentage of trainers with adequate knowledge before starting training programs | Project – After trainers and farmers are trained |
| **Component 3** | | | |
| | Technical staff of participating line departments trained on integrated watershed management | Post-training test scores<br>% attendees who get minimum score | Project data-continuous |
| **Component 4** | | | |
| | | No. of Work Shop/ Meetings conducted (For Personals) | Biannual by APO, DPO & PMU offices |
| | | No. of Work Shop/ Meetings conducted (For Communities) | Biannual by APO, DPO & PMU offices |
| | | No. of training programs conducted (For Personals) | Biannual by APO, DPO & PMU offices |
| | | No. of training programs conducted (For Communities) | Biannual by APO, DPO & PMU offices |
| | | No. of Exposure Visits conducted (For Personals) | Biannual by DPO & PMU offices |
| | | No. of Exposure Visits conducted (For Communities ) | Biannual by APO & DPO offices |
| | | No. of International trainings conducted | Biannual by PMU office |
| | | Number of Women personnel/ beneficiaries | Biannual by APO, |

| | | | |
|---|---|---|---|
| | | trained | DPO & PMU offices |
| | | Achievement of learning objectives by short test | Biannual by Process Monitoring |
| | | No. of Work Shop/ Meetings conducted (For Personals) | Biannual by APO, DPO & PMU offices |
| | | Adherence to training guidelines (adequate resource materials, duration, training conditions, program coordination) | Process Monitoring |
| **Procurement Indicators** | | | |
| | | Percentage of PMU and DPO procurements that adhere to estimated costs with less than + 10 percent variance | Project data-continuous |
| | | percentage adherence to procurement cycle time (procurement cycle time is time taken from the date of invitation of bids/ RFQ to the date of contract award) | Project data-continuous |
| | | percentage purchase orders/contracts with adherence to stipulated payment terms | Project data-continuous |
| | | disclosure of procurement information, including but not limited to opportunities/formats and checklists/contract award notices/procurement post review reports, complaint handling mechanism, etc., on the project website | Project data-continuous |
| | | procuring entities have received at least one training in procurement as the first step to build procurement capacity | Project data-continuous |
| | | % physical progress for each contract | Project data-continuous |
| | | % financial progress for each contract | Project data-continuous |
| **ESMF Indicators (May be revised as per this TOR)** | | | |
| **A. Environmental** | | | |
| | | Change in water discharge in selected springs | Biannual by APO & DPO offices |
| | | Instances of Pest and Disease attacks | Annually by APO & DPO offices |
| | | Number of Farmers using bio-pesticides | Biannual by APO & DPO offices |
| | | Number of communities taking up conservation and source sustainability activities | Biannual by Process Monitoring |
| **B. Social** | | | |
| | | Number of grievances registered and resolved | Biannual by APO & DPO offices |
| | | Number of court case | Biannual by APO & DPO offices |
| | | Number of UGs/ PGs/ Federations formed | Biannual by APO & DPO offices |

| | | | |
|---|---|---|---|
| | | Number of women members in UGs/ PGs/ Federations | Biannual by APO & DPO offices |

**Annex C**

The core modules to be developed include but may not be limited to the following :

1. Android Application with offline version (in case no or poor communication services) to capture the following:
    a. Gram Panchayat Resource Management Plans (GPRMPs) which includes village basic information, user groups, beneficiaries / farmers, members of village institution or gram Sabha, village land use pattern & other related data (Template as suggested in Project Implementation Plan, PIP)
    b. Village level land use land cover (LULC) maps (boundaries, intervention site, longitude / latitude, area etc.) will be stored at GIS cell (local or cloud services) while android application will have provision to link with village basic information (GIS – MIS- APP Integration)
    c. consultative and participatory processes, participatory rural appraisal (PRA) data, geotagging of intervention site & boundaries, village level project agreements with provision to upload all the documents associated with all these steps.
    d. screening templates - compliance with social and environment framework (Eligibility screening, regulatory compliance screening, land management screening, social inclusion, labour management and citizen engagement)
    e. geotagging of project & farmer associated interventions, assets, services, technology adoptions and farming practices.
    f. details of village participatory processes, villager attendance and village plan approval mechanism / logs / minutes of meetings etc. with provision to upload photographs, videos, minutes of meetings, story lines (if any).
    g. dynamic feedback from beneficiaries during planning as well as implementation phase. (Project Indicator (Internal assessment) - Share of participating farmers who give a rating of "Satisfied" or above on process and realized benefits of project interventions (Percentage, gender disaggregated).
    h. Dynamic feedback (questionaire) from the technical staff of participating line departments trained on integrated watershed management or similar themes.
    i. district wise activity tracking (field visits, purpose, status, outcomes) by M&E field Staff.
    j. Submission of grant applications based on the work flow and forms to be identified in the Grants Manual and dashboard indicating grant application review process status
    k. Tracking of expenditures at the farmer, farmer group, village, APO and GP level, including uploading of receipts
    l. requisition to expert assistance, daily activity plan of District Project Office, Progress / status of the activities.
    m. village level training, workshop or seminar details, participant attendance with provision to upload photographs, videos, minutes of meetings, story lines (if any).
    n. tool to create training programs, track participants' unique (Gender disaggregated) registration, attendance, target groups (villager, PMU, DPO, APO External experts, other department staff etc.) and integration with PMIS dashboard to display all the data captured using android APP; each training participant should only be counted once in Results Framework monitoring.

2. Real-time Web based Project Management Information System (PMIS) to
    a. develop robust work flow based on organizational structure and other project stakeholders – approval mechanism, data validation, reporting and alert / Notification

system. Solution should include customization from administrator side to control the frequency, approval authorities, type and mode of notifications.

b. develop planning tool to identify the activities / intervention based on GPRMPs and PRA data. Tool will support the management to plan the project activities to achieve overall project indicators.
c. Provide technical support in integrate the backlog data generated in excel during the preparatory phase of the application.
d. Integrate and upgrade the Excel based prototype (existing MIS – if any) and android application (Scope as above to capture village PRA, plan preparation and implementation activities). Replica of modules developed (android application) for editing and validation purpose at various hierarchy level of process flow.
e. develop dashboards for various stakeholders at village, district, state level management.
f. dashboard for project indicators (PDO, Intermediate, KPIs) linked to the Result Framework and display progress against baseline over timeline.
g. compliance with all the templates suggested under environment and social framework (ESF), project implementation plan, and grants manual (GM).
h. procurement progress, relevant approvals, and management with reference to milestone achieved (percentage of physical progress at various steps of procurement road map based on methods and categories) and system-generated alerts for forthcoming timelines
i. contract management with reference to milestones achieved (percentage of physical progress on interventions identified for different components) and change detection with GIS based technology, such as publicly available remote sensing data (if applicable), and system-generated alerts for forthcoming as well as missed milestones.
j. Expenditure management to capture expenses against annual work plan activities (Procurement as well operational expenses). Consultant has to suggest best possible options to minimize any data duplicity. The present possible options; either integration with the existing government financial management system (IFMS) using API's or import / export or suggest guidelines / formats / strategy to develop full-fledged financial system with minimum efforts while minimizing duplicity.
k. capture the sequence of process from Project implementation, Annual work plan, procurement plan, annual budget, integration with Procurement STEP tool with details of contract award [e.g., date, parties to a contract, value, duration, public disclosure requirements, etc.] and expenditure incurred against each package in the procurement plan in STEP; and the same in the case of GPRMPs, IUFR generation, asset identification & management, physical & financial progress of the project and any other which might come out during initial stock gathering steps.
l. develop administrative level process work flow, user credential, approval and security logs for: - GPRMPs, project document, grants application and implementation, and manual (PIP, GM, ESIA) compliance etc. The process flow will also cover various line departments for convergence supporting as well as the entire project team. Documents management system will cover uploading and access of documents to various stakeholders, recording of minutes of meetings, journals, videos, pictures and publications, contract award notices, etc. This will be broadly defined as a part of knowledge management Repository. Indexing of documents for review, tracking and action status will be also part of the scope of activities. Consultant should highlight the best practices or innovation, i.e. Optical Character Recognition [OCR], in the design document that may help the client with document tracking, updating and follow up system. integrate project documents like (PIP) and other manuals (GM, Environment & Social Plans) in digital technology formats (e-books).

m. develop web services to integrate with android app, GIS database and other third party applications (if any during implementation stage).
n. GIS based dashboard system integrated into PMIS to visualize and track project activities and implementation status. The scope includes geo tagging of project implementations and analysis of geo spatial Meta data, with the aid of Google earth engine (raster files), remote sensing, change detection approach (pre and post images) and to include social and environment checklist during the project implementation etc. Geo tagging of training and capacity building activities at district, block and village level. This will enhance the performance monitoring of the program, training need assessments and planning using GIS based dashboard.
o. Develop public portal with access to key project documents, implementation dashboard, and citizen feedback system, including submission of grievances, as well as procurement related complaints [including format/form for lodging, tracking, resolution, reports for reporting]
p. share the process knowledge and entire development code / technology and system user manuals during development phase.
q. data migration from any existing excel based MIS templates or other application (Project data collection applications before PMIS).
r. document management system to capture all the project related documents in sequence along with options to upload and share (within line departments or public)
s. defining and establishing training modules to define Training cum trainers' profile, Mapping of training calendar and mechanism of training based on feedback and rating scenarios.
t. migrate baseline / project evaluation data (collected from third party consulting firms during Mid Term Review or any project evaluation, process monitoring) and to integrate with project relational database and utilize the same to identify and generate project core indicators.
u. Grievance Redressal system – either integration with the existing state grievance portal or complete workflow starting from lodging of grievance, addressing the issue to closure of the grievance with end to end monitoring system and dashboard report. Consultant may highlight any of the existing protocols using in any other similar funding projects.
v. reporting on the use of convergence funds to support project implementation where applicable (e.g., from MNREGA, line department, community). This will categorically identify and report the fund contribution from other departments as well as community while implementing various activities, i.e. construction of infrastructure at community level.
w. scope of future updating and upgradation of the PMIS integrated with GIS.
x. reporting of progress of the MIS architecture design and development at every stage. Every phase will undergo review by the core PMU, HPFD team in consultation with state IT department or NIC.
y. Handed over the source code of the solution designed and developed. Submission of technical manual on database architecture, design framework, business / presentation layers, coding language and user / system modules.
z. carrying out User Acceptance Test (UAT) and the certification of the MIS solution developed and incorporate necessary changes based on requirement.
aa. training and capacity building to the users and key stakeholders on functionality, coding and features of PMIS.
bb. Security scrutiny measures should be in compliance with requirements as notified by NIC or any other competent authority.

cc. during maintenance period, the consultant is to deploy at least one official mostly to be stationed at head office, Solan.