

## Terms of Reference

### CONSTRUCTION SUPERVISION CONSULTANTS

(CS-01A)

#### 1. BACKGROUND

##### 1.1. Project Rationale

1. Despite the importance of agriculture in the livelihood of Himachal Pradesh's large rural population, there is a distinct agricultural development gap between the northern (or temperate horticulture areas) and southern (or subtropical horticulture areas) parts of Himachal Pradesh. Subtropical horticulture farmers earn only an equivalent of ₹ 52,095 per year while temperate horticulture farmers earn about 13 times more. Temperate horticulture in northern Himachal Pradesh has been dominated by the production of apple, which is the most important fruit crop for the state accounting for 79% of the state's fruit production in 2017–2018.

2. The state recognizes the need to diversify horticulture production because apple production fluctuates due to weather and changing markets. It also offers opportunities for subtropical farmers to access off-season markets for other fruits and vegetables, thus reducing income disparity between the northern and southern parts of Himachal Pradesh. The State Government of Himachal Pradesh requested the Asian Development Bank (ADB) to support the development of horticulture in the subtropical areas of the state and reduce the income gap between farmers in subtropical and temperate horticulture regions.

##### 1.2. Project Scope, Impact and Outcome

3. The Himachal Pradesh Subtropical Horticulture, Irrigation, and Value Addition (HPSHIVA) Project aims to increase the income and climate resilience of at least 20,000 farm households in seven districts (Bilaspur, Hamirpur, Kangra, Mandi, Solan, Sirmour and Una) of subtropical areas of Himachal Pradesh. The project will have the following outcome: agriculture income and climate resilience of targeted farming households in subtropical areas of Himachal Pradesh improved.<sup>1</sup> The project will expand irrigation to farmers, increase subtropical horticulture production and its climate resilience, and raise the profitability of subtropical horticulture production through value chain development of targeted commodities.

##### 1.3. Project Outputs and Activities

4. The HPSHIVA Project will have the following three outputs:

- **Output 1: Sustainably-operated irrigated areas expanded.** This output focuses on increasing sustainability and climate change resilience of irrigation systems from the source of water supply to the field. The water management and on-farm irrigation will be improved through six key activities: (i) rehabilitating existing function and non-functional irrigation schemes;<sup>22</sup> (ii) building new irrigation schemes incorporating supervised control and data acquisition (SCADA) technology; (iii) designing drip irrigation system, including the use of solar pumping; (iv) finalizing the Irrigation Water User Association Act and manual to enable the water user associations (WUA) to be involved in the irrigation project design and construction, monitor water flow, allocate water, and regulate water

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<sup>1</sup> State Steering Committee. 2018. *Strategies for Doubling Farmers Income in Himachal Pradesh*. Himachal Pradesh.

distribution; (v) establishing and strengthening WUAs to undertake farm-level irrigation water management with increased involvement of women; and (vi) strengthening capacity of Jal Shakti Bibhag (JSV ) in climate resilient irrigation scheme design and water management. During the project year 1 and 2, about 4,000 ha will be irrigated through 197 schemes (56 functional, 32 non-functional and 109 new schemes) and managed by about 278 WUAs (or clusters).<sup>24</sup> The rest 4,000 ha will be irrigated in the project year 3 and 4 through about 200 additional schemes. Output 1 will be implemented by Jal Shakti Vibhag(JSV).

- **Output 2: Climate resilient subtropical horticultural production systems adopted.** This output focuses on supporting about 20,000 subtropical horticulture farmer households to adopt climate resilient practices in their 8,000 ha of land. About 80% of beneficiaries are marginal, small, and medium farmers (footnote 3), and at least 30% of beneficiary households will be represented by women<sup>26</sup>. The subtropical horticulture production (guava, litchi, orange, pecan, persimmon, plum and pomegranate) in the state will be increased by: (i) organizing beneficiary farmers into the community horticulture producer and marketing association (CHPMA) at the cluster level<sup>27</sup> and the CHPMA cooperative society at the district level<sup>28</sup>; (ii) identifying focus crop(s) per cluster, considering crop potentials, climate change projections, soil health, and market demand; (iii) supporting land preparation, including plot layout, bed height raise, soil nutrient management, and pest and disease management;<sup>29</sup> (iv) providing agriculture input and farm equipment in the initial years; (v) providing communal, solar fencing of all the horticulture clusters to protect from animal predation; (vi) providing disease-free planting materials (or at least quality planting materials) for the crop selected by a cluster; (vii) installing and operating drip irrigation system (following the design done under output 1); (viii) introducing intercropping and beekeeping to beneficiary farmers; (ix) modernizing public and private subtropical horticulture nursery facilities and training the Department of Horticulture (DOH) staff in the implementation of a nursery certification program;<sup>30</sup> (x) establishing a geographic information system-based land resource database; (xi) studying carbon benefits from horticulture farming, including preparing recommendations on a potential benefit sharing mechanism for CHPMA members; and (xii) providing modern extension services to farmers.

More specifically, for the extension service program improvement, the following activities will be implemented: (i) the improvement of training materials (or packages of practice); (ii) exploration of new techniques and knowledge exchange by establishing partnership with international and national universities or research institutes; (iii) training motivated farmers as demonstration farmers to lead the farmer-to-farmer training; (iv) the establishment of a center of excellence (for subtropical horticulture) as a state knowledge hub; (v) capacity enhancement of DOH staff for public-private partnership, climate resilient agriculture, and on-farm irrigation; and (vi) the enhancement of beneficiary farmers' connection to information and communication technologies, and other agri-technology systems that provide real-time farm advisories.<sup>31</sup> Output 2 will be implemented by the Department of Horticulture (DOH).

- **Output 3: Market access for subtropical horticulture farmers developed.** This output focuses on increasing profitability of subtropical farming in the state. This will be achieved through: (i) forming a CHPMA apex institution at the state level as a farmer producer company (FPC) to lead agribusiness development; (ii) training the FPC in facilitation and negotiation skills, business plan development, financial management and services, and branding; (iii) supporting the FPC to develop and implement the branding and agribusiness promotion strategy; (iv) designing and constructing value-addition facilities at the CHPMA cooperative and public levels; and (v) supporting the CHPMA

and state government to operate these facilities to generate or increase CHPMA's profits. Output 3 will be implemented by the DOH.

#### 1.4. Project Implementation Arrangement

5. The HPSHIVA Project will be implemented under the following implementation arrangements:

- **Executing Agency (EA):** DOH as the Executing Agency (EA) on behalf of the Government of Himachal Pradesh for overall project execution of the HPSHIVA Project;
- **Project Management Unit (PMU):** A Joint HPSHIVA Project Management Unit of DOH and JSV is established under the DOH and responsible for the overall project management activities of the Project; and
- **Project Implementation Units (PIUs):** Both DoH and JSV are Project Implementation Units (PIUs) responsible for day-to-day project administration and implementation of the project activities either directly or through engagement of contractors/service providers under their respective jurisdictions.

#### 1.5. Civil works to be covered under this construction supervision consultancy

6. The construction supervision consultants will cover all the civil work scope of the project that will be implemented in the first 30 months. During this period of the project implementation, the project will implement the following packages of civil works.

Package	Title/Scope	Project Implementation Unit	Estimated Construction Period
JSV-lift irrigation-CW01	Lift Irrigation – Solan	JSV	18 months (Tentative 20/1/2023 to 20/7/2024)
JSV-lift irrigation-CW02	Lift Irrigation – Sirmour	JSV	18 months (Tentative 20/1/2023 to 20/7/2024)
JSV-lift irrigation-CW03	Lift Irrigation – Harmirpur 1	JSV	18 months (Tentative 20/1/2023 to 20/7/2024)
JSV-lift irrigation-CW04	Lift Irrigation – Harmirpur 2	JSV	18 months (Tentative 20/1/2023 to 20/7/2024)
JSV-lift irrigation-CW05	Lift Irrigation – Bilaspur 1	JSV	18 months (Tentative 20/1/2023 to 20/7/2024)
JSV-lift irrigation-CW06	Lift Irrigation – Bilaspur 2	JSV	18 months (Tentative 20/1/2023 to 20/7/2024)
JSV-lift irrigation-CW07	Lift Irrigation – Mandi 1	JSV	18 months (Tentative 20/1/2023 to 20/7/2024)
JSV-lift irrigation-CW08	Lift Irrigation – Mandi 2	JSV	18 months (Tentative 20/1/2023 to 20/7/2024)
JSV-lift irrigation-CW09	Lift Irrigation – Kangra 1	JSV	18 months (Tentative 20/1/2023 to 20/7/2024)

Package	Title/Scope	Project Implementation Unit	Estimated Construction Period
JSV-lift irrigation-CW10	Lift Irrigation – Kangra 2	JSV	18 months (Tentative 20/1/2023 to 20/7/2024)
JSV-lift irrigation-CW11	Lift Irrigation – Una	JSV	18 months (Tentative 20/1/2023 to 20/7/2024)
DOH-Field Preparation-CW12A	Field Preparation Work – 1	DOH	18 months (from date of commencement of contract for each of the 11 Lots all of which are expected to be implemented simultaneously covering the initially planned 4000 Ha)
DOH-Drip Irrigation-CW13A	Drip Irrigation with solar pumping and modular tanks (field-level irrigation) – 1	DOH	18 months (from date of commencement of contract for each of the multiple Lots of which are expected to be implemented simultaneously covering the initially planned 4000 Ha))
DOH- Animal Proof Solar Fencing-CW14A	Animal proof solar fencing – 1	DOH	18 months (from date of commencement of contract for each of the 11 Lots all of which are expected to be implemented simultaneously covering the initially planned 4000 Ha))
DOH-Center of Excellence-CW15	Construction of Horticulture Center of Excellence	DOH	12 months (from the date of commencement of the contract)

7. The above listed infrastructure elements (CW12A, CW13A and CW14A) are subdivided into 11 segments (either as Lots or Contracts) which would be awarded as separate implementable contracts (Note: JSV's CW packages are already divided into 11 packages following this, and CW15 will construct one building located in one specific area that will be decided later). The geographical coverage of these 11 segments are listed below:

S. No	District & Block - segment wise	Area (ha)	Clusters
1	Solan	261	18
	Kunihar	121	8

	Nalagarh	140	10
2	<b>Sirmour</b>	<b>192</b>	<b>16</b>
	Nahan	110	10
	Paonta Sahib	82	6
3	<b>Hamirpur (1)</b>	<b>216</b>	<b>13</b>
	Bamsan	26	2
	Bhoranj	125	6
	Bijhar	65	5
4	<b>Hamirpur (2)</b>	<b>417</b>	<b>32</b>
	Hamirpur	81	5
	Nadaun	245	19
	Sujanpur	91	8
5	<b>Bilaspur (1)</b>	<b>351</b>	<b>28</b>
	Ghumarwin	227	21
	Sadar-Bilaspur	123	7
6	<b>Bilaspur (2)</b>	<b>258</b>	<b>11</b>
	Jhandutta	188	8
	Swarghat	70	3
7	<b>Mandi (1)</b>	<b>896</b>	<b>87</b>
	Chauntara	101	6
	Dharampur	676	68
	Gopalpur	119	13
8	<b>Mandi (2)</b>	<b>220</b>	<b>16</b>
	Drang	2	2
	Gohar/Balh	138	8
	Sadar	25	2
	Sundernagar	55	4
9	<b>Kangra (1)</b>	<b>406</b>	<b>35</b>
	Baijnath	49	6
	Bhawarna	102	7
	Lambagaon	49	6
	Panchrukhi	88	10
	Sullah	119	6
10	<b>Kangra (2)</b>	<b>510</b>	<b>7</b>
	Dehra & Paragpur	510	7
11	<b>Una</b>	<b>274</b>	<b>15</b>
	Bangana	274	15
	<b>Grand Total</b>	<b>4000</b>	<b>278</b>

## 2. OBJECTIVE OF THE ASSIGNMENT

8. The objectives of this consulting service are to assist PMU and PIUs (DoH and JSV) to carry out oversight and supervision of construction works undertaken so as to ensure that all works are delivered on time and with the desired quantity and quality parameters including adherence to all applicable environment, social and other health related safeguards. **DOH and JSV are referred as the Employer.** More specifically, the objectives of this construction supervision consultancy are the following:

- a) To monitor the pre-construction activities of the contractor;
- b) To supervise contractor's project implementation activities to ensure complete compliance with the drawings, technical specifications, and various stipulations contained in the contract documents, including the adequacy of the contractor's input materials, labor, equipment;
- c) To ensure the execution and completion of work in high standards and within the specified time schedule;
- d) To establish efficient procedures for verifying contractor performance and reporting progress and problems in a timely manner;
- e) To support resolution of contraction issues;
- f) To attend the third party inspections as necessary;
- g) To assist in preparing planned maintenance procedures;
- h) To regularly monitor safety of the works, property and personnel;
- i) Jointly with the Employer, to record the work measurement, certify the contractor's claim and assist in issuance of completion certificates; and
- j) To assist the Employer in taking remedial actions to avoid slippages, cost overruns, delays by the contractor
- k) To demonstrate the efficacy of contract supervision and efficient construction supervision by deployment of personnel who are experienced in modern methods of construction supervision and contract management;
- l) To ensure safety during construction and adherence to all Environment Management Regulations prescribed under the Contract

### 3. SCOPE OF SERVICES

#### 3.1. General

- Prepare the construction supervision manual, including an electronic or computer-based management and reporting system, for the purpose of covering the scope of services, in consultation with the Employer;
- Maintain records, working/as-built drawings, test data, details of various correspondence and diaries in the formats agreed with the Employer;
- Review & approve a Quality Assurance Plan jointly developed by the Contractor, Consultant and Client and recommendation to monitor project quality. A **risk based construction supervision approach** is required to be developed and adopted for the execution of the tasks under this assignment for ensuring optimum utilization of allocated resources. The final Quality Assurance Plan agreed upon in this regard should be based on this risk based construction supervision approach with appropriate sharing of work between the Consultant, DoH staff and JSV staff so as to ensure that quality, output and integrity of services and deliverables are fully achieved with any compromises.
- Scrutinize the construction methods proposed by the Contractor to ensure that these are satisfactory with particular reference to the technical requirements, project implementation schedule and environmental aspects as well as safety of works, personnel and the general public.
- Witness testing of materials, concrete, welds and alignment of equipment (all as required) at site and advise of improvements if necessary.
- Ensure the Contractors' compliance with staff resources as per the IEE/EMP/Bid
- Assist the Employer in implementation of grievance redress mechanism, and advise the Employer on appropriate actions to redress complaints, if any, in a timely manner and document resolutions properly
- Inform the Employer promptly in case any significant impacts surface, which were not identified in the IEE and EMP, and develop necessary corrective actions and ensure implementation by the Contractors

- Conduct Quality Review meetings on a monthly basis to assess quality, schedule, safety etc. and advise corrective action if any

### **3.2. Construction Supervision**

- Overseeing the Contractor's supervision of the construction activities as per predetermined inspection test plan with identified hold points.
- Review and approve construction schedules proposed and periodically updated by the Contractors.
- Regularly monitor physical and financial progress, and take appropriate action to expedite progress if necessary, so that the time for completion set forth in the contract will be duly respected by the Contractor
- Review adequacy of Contractor's manpower and other resources for execution of site work as per approved schedules.
- Ensure adherence to a) drawings & documents issued for Construction, b) Specifications c) Approved quality assurance plan d) Relevant Standards
- Monitor site activities with respect to the latest approved schedules
- Review Contractor's work plans for ensuing week/month

### **3.3. Reporting**

- Report the progress of work on a daily and/or weekly basis in a format approved by or agreed with the Employer. Strongly recommend to follow an electronic or computer-based management and reporting system agreed with the Employer
- Submitting a brief monthly progress report, which will include project progress, areas of concern, critical issues and actions taken, progress - physical & financial, look-ahead, summary of quality control tests, quality issues, safety issues and items that require prompt attention and actions by the Employer and/or relevant authorities. The report should be succinct with key information (ideally limited to 5 pages) and submitted within 7 days of the end of each month.
- Submitting a detailed quarterly progress report which summarizes the component wise progress vis-a-vis targets, problems encountered (technical , contractual, administrative & financial) and recommendations to overcome, expenditure statement along with S-Curve, variation orders proposed / approved, status of time extensions and claims raised by the contractors if any , status of IEEP/EMP, safety measures, traffic diversions during construction if required, removal of encroachments / encumbrances etc. , mobilization of manpower / equipment / machineries, status of construction materials like aggregates , steel, cement, bitumen etc. The report should contain the minutes of monthly progress meetings held by Team Leader / Authorized Representative of Consultant
- Submitting input to the environmental and social safeguard and GESI monitoring reports every 6 months (bi-annual and annual)
- Preparing contract completion reports. The respective contract completion reports shall summarize all relevant issues pertaining to the contract in the format acceptable to the Employer. In general, the reports shall incorporate summaries of the methods of construction, the construction supervision performed, reference to as-built drawings of the construction, problems encountered and solutions undertaken, and recommendations for future projects of similar nature

### **3.4. Safety Management**

- Review the safety training and implementation programs developed by the Contractors, make appropriate changes if necessary, to ensure that comprehensive project safety program is in place and the programs are cleared by the Employer
- Monitor Contractor's adherence to the safety training and implementation program cleared by the Employer

- Regular inspection of work areas to monitor that contractor's practice good house-keeping and participate in overall site cleanliness programs.
- Monitor safety records / statistics
- Conduct safety review meetings
- Monitor regular disposal of construction debris, trash and waste by the contractor's at proper off-site locations
- Witness the Contractor conduct regular toolbox meetings as part of safety plan.
- Monitor and apprehend any potential unsafe conditions or practices and provide guidance on safe work. However, the respective Contractors will be wholly responsible for safety of persons, equipment, material, facilities and structures under his scope. Remind the Contractors that the Employer and the supervision company will not be responsible in any way for any damages or loss due to any accident/ mishap during the execution of the project
- Notify immediately both the Employer and the Contractor of any infringement or violation
- In case the coronavirus disease (COVID-19) is an issue during the construction phase, the Consultant shall:
  - a) Conduct awareness activities to the Contractors concerning prevention and mitigation of COVID-19 at the construction sites.
  - b) Immediately report to the Employer if a person infected with COVID-19 is confirmed at the construction sites.
  - c) Prepare 'COVID-19 Mitigation Measures Matrix,' which will be submitted together with Quarterly Progress Report.

### **3.5. Contractor's Bill Certification**

- Review work completed & quantity measurements (as considered necessary)
- Certification of invoices
- Certify progress payments as per Contractual terms of payment
- Assist the Employer to workout/fix rates for extra works
- Manage change orders
- Resolve scope changes and extra claims
- Certify final completion and final payment
- Provide assistance to the Employer concerning variations and claims which are to be ordered/issued at the initiative of the Employer. Advise the Employer on resolution of any dispute with the Contractor in relation to variations and claims

### **3.6. Assistance during Works Commissioning Services, Defects Liability Period and Hand Over/Take Over by the Employer**

- Issue taking over final certificate and assist in co-ordination with users for taking over of the facility.
- Organize to obtain guarantees and warranties from the manufacturer/ Contractors/ installers
- Punch list closeout

### **3.7. As-Built Drawings**

- Follow-up, expedite contractor and provide assistance, as necessart, for the preparation of 'as-built' drawings for all the works contracts elements (covered under this scope) to reflect the As-Built status. The As-Built drawings, prepared by the contractor, and reviewed and cleared by the supervision company will be submitted to the Employer for a future use upon final completion of the project
- Verify the 'as-built' drawings as true record of the works as constructed



#### 4. QUALIFICATIONS OF THE FIRM AND KEY STAFF

##### 4.1. Qualification required for the construction supervision company

9. The supervision company shall have at least 10 years of experience in the consulting business of engineering infrastructure design, project management and construction supervision of works on general infrastructure projects and at least 3 years of specific experience on irrigation schemes (both Lift Irrigation and Drip Irrigation) including implementation of water resources based SCADA projects.

10. The supervision company should have successfully completed at least one contract in India within the last 7 years with a contract value of INR 10 Crores or more in construction supervision of engineering infrastructure works. Preference will be given to the supervision company that has supervised successfully completed works on irrigation, water resource management, drainage, etc. Further, the scope of the single construction supervision contract executed must have involved deployment of large number of field construction supervision staff at various district and block level locations where construction work was executed simultaneously.

11. The supervision company shall have staff with appropriate experience and expertise in design and construction supervision of general infrastructure projects as well as experience on irrigation schemes (both lift irrigation and drip irrigation) including implementation of water resources based SCADA projects.

##### 4.2. Qualification required for the supervision staff

12. It is estimated that **150** Person-months of Key Professional Staff and **503** person months of Other Non-Key Professional staff are anticipated to be required for this assignment over a **30** calendar month contract period. It is envisaged that the Key Professional Staff would be engaged in technical and managerial oversight and technical and management supervision of the Other Non-Key Professional Staff and would be responsible for their performance.

13. The Employer expects that all the proposed key professionals should be available during implementation of the contract, as per their approved scheduled deployment. The Employer will not consider substitutions of the key professionals during contract implementation except under exceptional circumstances. Particular attention will be given in the evaluation of proposals on the methodology of how the consultant team mobilizes to provide support to DoH/JSV.

14. Deployment of the full complement of staff would not necessarily be at the same time and will be need based and staggered according to need over the 30 month period.

##### 4.3. Key Professional Staff (whose CV will be evaluated):

15. All the key professional staff will be contracted and requested to provide input over 30 months of a calendar period. The following list of key staff and conditions shall be met for the personnel to be assigned to the relevant position of the project:

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Key Professional Staff	Minimum No. of Staff Required	Person-months	Minimum academic qualifications	Minimum experience
Team Leader/Chief Supervision Engineer	1	30	Graduate degree in Civil Engineering with Post Graduate qualifications in Water Resources Engineering / Hydraulics / Irrigation and/or related fields.	<p>Minimum 20 years' experience in infrastructure projects, including min. 15 years' experience in supervision and contract management of irrigation and agriculture/horticulture development projects/contracts with at least one successfully completed project supervision performance as Team Leader.</p> <p>Experience in investment projects, financed by international financial insititons, is preferred. Familiarity with ADB and/or World Bank processes is an asset. Experience in hilly region projects will be preferred.</p>
Design Review Engineer	1	22.5	Graduate degree in Civil Engineering / Water Resources Engineering / Hydraulics / Irrigation and/or related fields with Tertiary Level qualifications/certifications /training in CAD	<p>Minimum 10 years' experience in design engineering work for infrastructure projects, including min. 5 years' experience in detailing of construction purpose drawings for site construction works related to civil engineering elements of irrigation and agriculture/horticulture development projects/contracts.</p> <p>Experience in investment projects, financed by international financial insititons, is preferred. Familiarity with ADB and/or World Bank processes is an asset. Experience in hilly region projects will be preferred.</p>
Civil Supervision Head	1	30	Graduate degree in Civil Engineering / Water Resources Engineering / Hydraulics / Irrigation and/or related fields	<p>Minimum 15 years' experience in infrastructure projects, including min. 10 years' experience in supervision and contract management related to <b>civil engineering elements</b> of Irrigation and Agro / Horticulture Development projects / contracts.</p> <p>Experience in investment projects, financed by international financial insititons, is preferred. Familiarity with ADB and/or World Bank processes is an asset. Experience in hilly region projects will be preferred.</p>
Irrigation Supervision Head	1	15	Graduate degree in Civil Engineering / Agricultural Engineering with Tertiary Level qualifications in Water Resources Engineering / Hydraulics / Irrigation and/or related fields	<p>Minimum 15 years' experience in Agro Development Projects, including min.10 years' experience in supervision and contract management related to <b>Irrigation Engineering elements (both Lift Irrigation and Drip Irrigation components)</b> of Irrigation and Agro / Horticulture Development projects / contracts.</p> <p>Experience in investment projects, financed by international financial insititons, is preferred. Familiarity with ADB and/or World Bank processes is an asset. Experience in hilly region projects will be preferred.</p>

Key Professional Staff	Minimum No. of Staff Required	Person-months	Minimum academic qualifications	Minimum experience
Electrical Supervision Head	1	15	Graduate degree in Electrical Engineering	<p>Minimum 15 years' experience in Electro / Mechanical aspects infrastructure projects, including min. 10 years' experience in supervision and contract management of <b>electro-mechanical engineering aspects (including traditional hydraulic equipment systems as well as solar power components and installations)</b> of Irrigation and/or Ago / Horticulture Development Projects/Contracts.</p> <p>Experience in investment projects, financed by international financial insitutions, is preferred. Familiarity with ADB and/or World Bank processes is an asset. Experience in hilly region projects will be preferred.</p>
SCADA Supervision Head	1	7.5	Graduate degree in Instrumentation Engineering / Electrical Engineering or related fields. Tertiary level qualifications in related fields is preferable.	<p>Minimum 10 years' experience in the design and supervision of <b>SCADA related aspects Water Sector / Irrigation Sector projects</b></p> <p>Experience in investment projects, financed by international financial insitutions, is preferred. Familiarity with ADB and/or World Bank processes is an asset. Experience in hilly region projects will be preferred.</p>
Horticulture Works Supervision Head	1	15	Graduate degree in Horticulture / Agriculture. Tertiary level qualifications in related fields is preferable.	<p>Minimum 10 years' experience in infrastructure projects, including min 5 years' experience in supervision and contract management of <b>Earthworks and Plant Bed Preparation and related activities for Agricultural / Horticultural Field Development projects / contracts</b> carried out over large tracts of agricultural lands and landscapes</p> <p>Experience in investment projects, financed by international financial insitutions, is preferred. Familiarity with ADB and/or World Bank processes is an asset. Experience in hilly region projects will be preferred.</p>
EHS Safeguards Officer	2	15	Master's degree in social sciences/ environmental sciences / health sciences	<p>Minimum 10 years' experience in <b>EHS (Environmental, Health and Safety) Safeguards aspects of infrastructure projects.</b></p> <p>Experience in investment projects, financed by international financial insitutions, is preferred. Familiarity with ADB and/or World Bank processes is an asset. Experience in hilly region projects will be preferred.</p>
<b>Total</b>	<b>9</b>	<b>150</b>		

## Himachal Pradesh Subtropical Horticulture, Irrigation, and Value Addition Project

### 4.4. Other Non-Key Professional Staff whose CV will not be evaluated:

16. CV's should be submitted in the supervision company's proposal and for approval of the Client before mobilization as and when required. The Client reserves the right to seek alternative staff with more appropriate qualifications if the proposed staff are considered not appropriate for the role.

17. All the non-key professional staff will be contracted and requested to provide input over 30 months of a calendar period. The following list of non-key staff and conditions shall be met for the personnel to be assigned to the relevant position of the project:

Other Non-Key Professional Staff	Minimum No. of Staff Required	Person-months	Minimum academic qualifications	Minimum experience
Field Supervisors Civil	5	150	Minimum Diploma in Civil Engineering.  Graduate Degree Civil Engineering will be preferred.	Minimum 3 years' experience in on site field supervision of civil engineering works preferably in Irrigation and Agro / Horticulture Development projects / contracts.  Experience in investment projects, financed by international financial insitutions, is preferred. Familiarity with ADB and/or World Bank processes is an asset. Experience in hilly region projects will be preferred.
Field Engineering Supervisors (JSV Contracts) Electrical	5	75	Minimum Diploma in Electrical or Mechanical Engineering.  Graduate Degree Electrical Engineering or Mechanical Engineering will be preferred.	Minimum 3 years' experience in on site field supervision of electro-mechanical engineering works preferably in Irrigation and Agro / Horticulture Development projects / contracts.  Experience in investment projects, financed by international financial insitutions, is preferred. Familiarity with ADB and/or World Bank processes is an asset. Experience in hilly region projects will be preferred.
Field Engineering Supervisors (DoH Contracts) Solar	5	75	Minimum Diploma in Electrical Engineering.  Graduate Degree Electrical Engineering will be preferred.  Training or certifications in Solar Engineering is required	Minimum 3 years' experience in on site field installation and/or supervision of solar related engineering works  Experience in investment projects, financed by international financial insitutions, is preferred. Familiarity with ADB and/or World Bank processes is an asset. Experience in hilly region projects will be preferred.

Other Non-Key Professional Staff	Minimum No. of Staff Required	Person-months	Minimum academic qualifications	Minimum experience
Field Irrigation Supervisors	5	75	Minimum Diploma in Civil Engineering / Mechanical Engineering / Agricultural Engineering or related subjects  Graduate Degree in relevant subject will be preferred.	Minimum 3 years' experience in on site field supervision of Irrigation Works (including both Lift Irrigation and Drip Irrigation)  Experience in investment projects, financed by international financial insititotons, is preferred. Familiarity with ADB and/or World Bank processes is an asset. Experience in hilly region projects will be preferred.
SCADA Field Supervisor	5	37.5	Minimum Graduate degree in Instrumentation Engineering / Electrical Engineering or related fields.	Minimum 5 years' experience in on site field supervision of SCADA installations  Experience in investment projects, financed by international financial insititotons, is preferred. Familiarity with ADB and/or World Bank processes is an asset. Experience in hilly region projects will be preferred.
Accountant	1	30	Minimum Graduate degree	Minimum of 5 years' experience in on site field related accounts work for consultancy contracts
CAD Draftsman	1	30	Minimum Diploma in Engineering or equivalent ITI or polytechnic certification	Minimum 5 years' experience in CAD related drafting work for engineering drawings related to construction works
Admin Officer	1	30	Minimum Graduate degree	Minimum 5 years' experience in on site field related administration work for consultancy contracts
		<b>502.5 Say 503</b>		

## Himachal Pradesh Subtropical Horticulture, Irrigation, and Value Addition Project

18. The number of minimum number of staff per location is described below:

<b>Mininum Professional Staff</b>	<b>Other Non Key</b>	<b>Minimum Number Required</b>	<b>Person-Months</b>
Field Civil Supervisors		5	150
1. Solan		<i>The proposed 5 staff to be based at appropriate locations to be decided by the Consultant Firm</i>	<i>The individual allocations and distribution of person months between the 5 staff to be decided by the Consultant Firm</i>
2. Sirmour			
3. Hamirpur (1)			
4. Hamirpur (2)			
5. Bilaspur (2)			
6. Bilaspur (2)			
7. Mandi (1)			
8. Mandi (2)			
9. Kangra (1)			
10. Kangra (2)			
11. Una			
Field Electrical Engineering Supervisors (JSV Contracts)		5	75
1. Solan		<i>The proposed 5 staff to be based at appropriate locations to be decided by the Consultant Firm</i>	<i>The individual allocations and distribution of person months between the 5 staff to be decided by the Consultant Firm</i>
2. Sirmour			
3. Hamirpur (1)			
4. Hamirpur (2)			
5. Bilaspur (2)			
6. Bilaspur (2)			
7. Mandi (1)			
8. Mandi (2)			
9. Kangra (1)			
10. Kangra (2)			
11. Una			
Field Solar Engineering Supervisors (DoH Contracts)		5	75
1. Solan		<i>The proposed 5 staff to be based at appropriate locations to be decided by the Consultant Firm</i>	<i>The individual allocations and distribution of person months between the 5 staff to be decided by the Consultant Firm</i>
2. Sirmour			
3. Hamirpur (1)			
4. Hamirpur (2)			
5. Bilaspur (2)			
6. Bilaspur (2)			
7. Mandi (1)			
8. Mandi (2)			
9. Kangra (1)			
10. Kangra (2)			
11. Una			
Field Irrigation Supervisors		5	75
1. Solan		<i>The proposed 5 staff to be based at appropriate locations to be decided by the Consultant Firm</i>	<i>The individual allocations and distribution of person months between the 5 staff to be</i>
2. Sirmour			
3. Hamirpur (1)			
4. Hamirpur (2)			
5. Bilaspur (2)			
6. Bilaspur (2)			
7. Mandi (1)			
8. Mandi (2)			
9. Kangra (1)			

10. Kangra (2)		<i>decided by the Consultant Firm</i>
11. Una		
Field SCADA Supervisors	5	37.5
1. Solan	<i>The proposed 5 staff to be based at appropriate locations to be decided by the Consultant Firm</i>	<i>The individual allocations and distribution of person months between the 5 staff to be decided by the Consultant Firm</i>
2. Sirmour		
3. Hamirpur		
4. Bilaspur		
5. Mandi		
6. Kangra		
7. Una		
Accounts Officer	1	30
CAD Draftsman	1	30
Admin Officer	1	30
		<b>502.5</b> <b>Say 503</b>

19. Additional number of back-office staff may be deployed by the supervision firm based on the job assessment.

#### 4.5. Proposed Assignment Execution Methodology

20. Considering that the project sites are dispersed across 7 districts of Himachal Pradesh, including 11 major clusters, and that the central main project office is going to function from Shimla, it will be necessary for the supervision company's staff to be ready for frequent mobility to the various sites instead of a static location at specific sites. Keeping in view the optimum number of staff (both key and non-key) proposed for the assignment, construction supervision activities are required to be well planned and executed with intermittent inputs at the various sites for critical activities that need close supervision for ensuring adequate levels of quality. Therefore, it is envisaged that the Key Professional Staff (as well as the required office support staff) would be based and operate from Shimla (where the HPSHIVA PMU is currently located) by establishing the supervision company's main Project Office in Shimla (or to any other location where the HPSHIVA PMU may be relocated in future), and travel as and when required for oversight of field supervision and construction supervision management duties. Under this assignment, the Employer envisages that all work is to be principally carried out from the field in Himachal Pradesh and no Consultant Home Office work is envisaged (except for backstopping support as required).

21. The Non Key Professional Staff assigned to field supervision duties would be based at the district/block level sub-offices (including one office at Hamirpur which is the HQ of JSV) to be established under the contract and would be required to travel to the various construction sites within their allocated jurisdictions for day to day field construction supervision tasks as considered necessary.

22. Deployment of the full complement of staff would not necessarily be at the same time and will be need based and staggered according to need over the 30 month period. A **risk based construction supervision approach** is required to be developed and adopted for the execution of this assignment for ensuring optimum utilization of allocated resources. This would involve deployment of staff for supervision of key construction related activities (as

and when required) instead of full time deployment at a particular site for continuous supervision at the site during the period of deployment.

23. Both Key Professional Staff and Non Key Professional Staff (assigned to particular territories) would be responsible for construction supervision for both DoH-awarded contracts as well as JSV-awarded contracts in those territories. Therefore staff with appropriate qualifications and experience needs to be assigned for these duties which will respectively cover areas related to civil, irrigation, electrical/solar as well as instrumentation/SCADA depending on the characteristics of the respective contracts. When required, deployed staff should be ready to travel to sites in different districts/blocks, beyond their allocated jurisdictions.

24. The Consultant is required to give due consideration to the above factors while formulating and presenting its assignment execution approach and methodology as well as staff deployment in the Technical Proposal to be submitted.

## **5. FACILITIES AND SUPPORT SERVICES TO BE PROVIDED BY THE SUPERVISOR COMPANY**

25. The Consultant will be responsible to include the provision of the following facilities and support services under the scope of the Consultant:

- a. Accommodation for all staff (both Key Professional Staff and Other Non-Key Professional Staff) deputed for execution of this contract;
- b. All Transport and Mobility Requirements for all staff (both Key Professional Staff and Other Professional Staff) deputed for execution of this contract;
- c. Establishment and Maintenance of a Main Project Office in Shimla as well as establishment of District Level Sub Project Offices/Field Offices as considered necessary including all communication and office equipment as well as office staff;
- d. It is envisaged that the Non Key Professional Staff/Field Level Supervision Staff would be appropriately based at the district/block level while the Key Professional Staff would operate out of the Project Office required to be established under the contract; and
- e. All Technical Support Services, Backstopping Services and Administrative Support Services to the Project Office level and Field Office level from the Consultant Firm's Head Office/Back Office as may be required for execution of the assignment.

## **6. FACILITIES AND SUPPORT SERVICES TO BE PROVIDED BY THE EMPLOYER**

26. The Employer will be responsible for the provision of the following facilities and support services:

- a. Access to all sites as well as introduction to all block level, district level and state level functionaries who are likely to play a role in the construction activities under this assignment;
- b. Provision of field level site offices that would be provided through the selected contractors of the respective DoH/JSV awarded works contracts;



- c. Provision of meeting room at the respective DoH and JSV state/district level offices for coordination meetings with the Employer as and when considered necessary;
- d. Support of nominated technical staff of DoH and JSV to work as a team with the supervision company's Staff (both at the field level and state level) in the satisfactory accomplishment of the mandated construction supervision activities for the Works Contracts under consideration. The actual division of work and attendant responsibilities will be agreed upon with the selected supervision company; and
- e. Any other support as may be considered necessary for smooth execution of the assignment.

## 7. REPORTING REQUIREMENTS

	Deliverable	Timeline
1	Non compliance event report / critical issue report	Immediately
2	Inception Report containing full details of deployment of supervision personnel and logistics (offices and travel arrangements) and brief overview of the methodology	Within 20 days after commencement of services
3	Construction Supervision Manual containing procedures for efficient time bound implementation, project monitoring and quality control.	Within 40 days after commencement of services
4	Monthly Progress Report summarizing issues and main findings	Within 7 days after the end of each month
5	Detailed Quarterly Progress Report, summarizing the component wise progress vis-a-vis targets, problems encountered (technical , contractual, administrative & financial) and recommendations to overcome, expenditure statement along with S-Curve, variation orders proposed / approved, status of time extensions and claims raised by the contractors if any , status of EMP, safety measures, traffic diversions during construction if required, removal of encroachments / encumbrances etc. , mobilization of manpower / equipment / machineries, status of construction materials like aggregates , steel, cement, bitumen etc. The report should contain the minutes of monthly progress meetings held by Team Leader / Authorized Representative of Consultant.  <b>All reports shall be contract wise / lot wise; financial progress shall also be contract wise / lot wise, and also be as a whole for the entire civil works component of the project</b>	Within 15 days after the end of each quarter
6	Input to environmental and social safeguard and GESI monitoring reports every 6 months (bi-annual and annual)	7 <sup>th</sup> month following the reporting month
7	Contract completion report. The respective contract completion reports shall summarize all relevant issues pertaining to the contract in the format acceptable to the Employer.	Within 30 days after issuance of completion certificate for each package

## 8. TYPE OF CONTRACT

27. A **Time Based Contract** (based on ADB's template for Time Based Contracts) would be offered for this proposed contract.

28. In view of the need to ensure prudent expenditure of limited resources, the mobilization and demobilization of Consultant's staff for field level duties will require Employer's written approval. The Employer reserves the right to request for temporary demobilization of staff (one or more) in case construction progress on one or more of the Works Contracts are impeded or unduly delayed for reasons and circumstances beyond control of the parties and the need for day to day construction supervision stands reduced.

## 9. HEALTH AND SAFETY CONCERNS

29. The supervision company is responsible for the health and safety of their staff in relation to the consulting services assignment and shall comply with the any specific requirements and regulations in relation to COVID-19.

30. The supervision company shall also include a Health and Safety COVID-19 Plan, in accordance with the relevant government regulations and guidelines on COVID-19 prevention and or in the absence thereof, to international good practice guidelines such as World Health Organization (WHO). 2020. [Considerations for public health and social measures in the workplace in the context of COVID-19](#). Geneva.

31. WHO guidelines are available here: <https://www.who.int/publications-detail/considerations-for-public-health-and-social-measures-in-the-workplace-in-the-context-of-covid-19>