



F.No.: 2-70/2025/VRL/Spatial-Zonation

Dated: 06.02.2026

E-TENDER NOTICE

e-tender for Equipping designated geospatial lab and execution of marine spatial zonation for sustainable mariculture planning along the Gujarat Coast (2340 km, 12 NM territorial sea space)

The Veraval Regional Station of ICAR-Central Marine Fisheries Research Institute (ICAR-CMFRI) invites composite e-tender through e-procurement from eligible firms/agencies for equipping designated geospatial lab and execution of marine spatial zonation for sustainable mariculture planning and development along the Gujarat Coast (2340 km), including procurement, processing, digitization, survey application, hardware & software supply, installation along with its necessary fixtures, accessories and allied works/services as per details in the Annexures. Individual components may be bid separately; however, consolidated, all-inclusive pricing per component is mandatory as detailed in Annexure-VII. The Invited e-Tender for equipping designated geospatial laboratory space and associated services to be executed at ICAR-CMFRI, Veraval Regional Station, Matsya Bhavan, Bidiya Plot, Veraval-362 269, Gujarat.

| | |
|------------------------------------|---|
| Tender Number | F.No. 2-70/2025/VRL/Spatial-Zonation |
| Publishing Date | 06th February 2026, 05:00 PM |
| Bid Submission End Date | 26th February 2026, 03:00 PM |
| Date, Time & Venue of Bid Opening | 27th February 2026, 03:00 PM at Veraval Regional Station of ICAR-CMFRI, Matsya Bhavan, Bhidiya, Veraval, Gujarat |
| Type of Tender | Two Bid System (Technical & Financial) |
| Bid Validity | 60 days from the date of Technical Bid opening |
| EMD | Rs. 5,50,000/- (Demand Draft/Banker's Cheque in favour of ICAR UNIT CMFRI, payable at Kochi) |
| Performance Security | 5% of the total contract value |
| Validity of SD/PB | 90 days after expiry of the contract |
| Submission of Bids | Online via Gem portal from 06 th Feb 2026 to 26th Feb 2026 (before closing time) |
| Description of Work/Supply/Service | Equipping designated geospatial lab and execution of marine spatial zonation for sustainable mariculture planning and development along the Gujarat Coast (2340 km, 12 NM territorial sea space), including procurement, processing, digitization, survey application, hardware & software supply, installation along with its necessary fixtures, accessories and allied works/services as per details in the Annexures. |

Annexure-I

SCHEDE OF SUPPLIES, WORK, SPECIFICATIONS AND SCOPE

This Annexure defines the comprehensive scope of supplies, works, services, infrastructure, instruments, data, and tools, and capacity-building support activities to be undertaken under the project for development of GIS and Remote Sensing based spatial Coastal Zoning, Planning through integrated mapping for the coastline of Gujarat, covering physical, ecological, oceanographic, socio-economic, and infrastructural dimensions. The scope encompasses data procurement, digitization, analysis, field surveys, system deployment, capacity building, and validation support.

A. GIS & Remote Sensing-Based Zoning Tools and Software

A1. Physical and Hydrographic Charts (2340 km coast)

The project shall include the procurement and integration of high-resolution physical and hydrographic charts covering the entire 2340 km coastline of Gujarat with 12 nautical miles of transit trajectory, inclusive of newly accreted or geomorphologically altered coastline segments.

The baseline spatial datasets shall comprehensively represent:

- Nearshore and offshore bathymetry and depth contours
- Seabed morphology, sediment type, and substrate characteristics
- Tidal regimes, tidal streams, and current patterns
- Shoreline configuration, coastal geomorphology, erosion/accretion zones
- Navigational features including channels, ports, jetties, and maritime infrastructure
- Coastal protection structures and anthropogenic interventions

All charts shall be:

- Acquired from authoritative and licensed sources
- Cleared for institutional and project use
- Delivered in both raster and vector formats, including GeoTIFF, SHP, and other related vector files.
- Accompanied by complete metadata, projection details, datum information, accuracy statements, and usage constraints
- Harmonized to national and international geospatial standards (OGC/ISO compliant)

A2. Digitization of Geospatial Charts (13 coastal districts; 12 NM corridor)

Digitization at enlarged scales; spatial gridding suitable for 12 nautical mile territorial waters. Conversion of legacy charts and hardcopy sources to georeferenced digital datasets; topology checks; scale harmonization (1:25,000 to 1:50,000 target scales); creation of fishery-management grids; QA/QC and metadata documentation.

A3. Oceanographic Satellite Data Processing

This component shall include the acquisition, processing, analysis, integration, and publication of multi-source satellite and geospatial datasets covering the entire coastline of Gujarat (2340 km) along with an inland coastal influence buffer extending 5 km to 10 km from the shoreline, as required for comprehensive coastal planning and decision-making.

A3.a. Satellite Data Acquisition and Processing

Multi-parameter, multi-temporal satellite datasets representing physical, chemical, and biological oceanographic parameters shall be collected and processed for Gujarat's territorial waters. The scope includes:

- Radiometric, atmospheric, and geometric correction
- Sensor calibration and cross-sensor normalization
- Noise filtering, cloud masking, and gap filling
- Temporal compositing (monthly, seasonal, and annual products)
- Generation of spatial indicators such as:
 - Sea Surface Temperature (SST)
 - Salinity proxies
 - pH
 - Chlorophyll-a concentration
 - Turbidity and suspended sediment indices
 - Primary productivity and coastal water quality indicators
 - Current Velocity

All outputs shall be georeferenced, spatially explicit, and validated using in-situ observations and historical datasets. Current velocity to be modelled for the sea space under examination

A3.b. Coastal Buffer and Land-Sea Interface Mapping (5 - 10 km Corridor)

In addition to offshore datasets, comprehensive geospatial mapping shall be undertaken across the entire coastal stretch, covering a 5 km to 10 km inland buffer zone from the High Tide Line (HTL) to capture land-sea interaction dynamics critical for zonation and regulatory decision-making. This includes detailed extraction, digitization, and validation of: Road networks (national highways, state highways, district roads, coastal access roads), Railway infrastructure, Drainage and hydrological networks, including rivers, creeks, canals, stormwater drains, and outfalls, Coastal protection structures, embankments, and flood-control assets.

A3.c. Point of Interest (PoI) and Critical Asset Mapping

Identification, geocoding, and periodic updating of key Points of Interest (PoIs) and critical coastal assets, including but not limited to:

- Fishing harbors, landing centers, and jetties
- Ports, industrial clusters, SEZs, and logistics hubs
- Coastal settlements, tourism assets, and heritage sites
- Environmentally sensitive areas, wetlands, mangroves, and CRZ-regulated zones
- Disaster management assets, shelters, and evacuation infrastructure

These datasets shall be regularly updated to reflect infrastructure expansion, environmental changes, and policy requirements, ensuring long-term relevance for decision-support applications.

A.3.d. Integration into Decision Support Maps

All processed satellite-derived products, corridor datasets, infrastructure layers, and PoIs shall be:

- Harmonized to a common spatial reference framework
- Integrated into GIS-based analytical and suitability models
- Linked with zonation rules, regulatory constraints, and multi-criteria decision analysis (MCDA) workflows
- Structured to support scenario analysis, risk assessment, and planning interventions

A.3.e. Data Publishing, Tiling, and Visualization

The complete geospatial repository shall be:

- Published through a centralized GIS platform
- Converted into optimized tile layers (XYZ/WMTS/Vector Tiles) using standardized base maps
- Configured for seamless visualization, querying, and overlay at multiple zoom levels
- Enabled for role-based access to support planners, administrators, and field agencies

All datasets shall be delivered with OGC-compliant services, metadata, version control, and documentation to ensure interoperability, scalability, and sustained operational use within the Decision Support System.

A4. Advanced GIS Workstations & Geospatial Lab Infrastructure

Supply, installation, and commissioning of four (04) GIS high configuration workstations (2 Desktops and 2 Laptops) Include HVAC control (2 units), UPS/high-power backup, stabilizers, network modems/routers, data storage, ergonomic cabins, digital displays, cabling, safety fixtures, and accessories.

A5. GIS Software Licenses

Floating licenses for GIS and analytical tools (e.g., Erdas/MapInfo/AHP/GSM/G-mAP or equivalent) which includes Spatial analysis, 3d analysis, geoprocessing analysis, query analysis, raster and vector analysis, ai/ml tools, and remote sensing toolkits. Licenses shall support at least 5 concurrent users with maintenance/support for 36 months. The provided software must have the following technical compliant.

| Category | Functionalities |
|----------------------------|---|
| Core GIS Operations | Buffer, Clip, Erase, Intersect, Union, Dissolve, Spatial Join, Relate, Summarize, Polyline-to-Polygon, Polygon Auto-numbering, Overlay analysis, Proximity analysis, Spatial query, Attribute query |

| | |
|---------------------------------------|---|
| Spatial Data Editing | Create/Edit Point, Line, Polygon; Topology corrections; Geometry editing; Attribute editing; Split/Merge; Snap operations; Coordinate system transformations |
| Data Import/Export | Support for DWG, DXF, DGN, SHP, Coverage, MIF, GML, KML, GPX, GeoJSON, MBTiles, H4/H5, CEOS, RDBMS via ODBC (PostgreSQL, Oracle, SQL Server, MS Access) |
| Geoprocessing | Raster & vector operations; Contouring; Slope/Aspect; Flow direction; Watershed delineation; Network analysis; Terrain analysis; Volume & variance analysis |
| Image Processing | classification; Image segmentation; Resolution merge; Layer stacking; Radiometric correction; Georeferencing; Mosaicking; Filtering (High/Low pass, FFT, Laplacian); Enhancement (Histogram equalization, Logarithmic, Gaussian, Square root) |
| Indices | NDVI, NDBI, NBRI |
| Oceanography | Ingesting ENC Maps and datasets |
| AI/ML-based Object Extraction | Built-in object identification & pattern recognition, text analytics, audio analytics, video analytics |
| Raster Analysis | Flood simulation, inundation mapping, heat mapping; Digital terrain analysis; Raster algebra; Raster statistics; Raster Clip; Raster mosaic |
| Metadata & Data Management | Layer organization, symbolization, style management, legends, metadata embedding, multi-format saving & publishing |
| Licensing Requirements | Open licensing model without hardware dependency; |

A6. In-situ Oceanographic Data Collection Equipment

The bidder shall supply, deploy, and make operational a comprehensive set of in-situ oceanographic data collection instruments for acquisition of physical, chemical, and geomorphological parameters in coastal, nearshore, estuarine, and marine environments. The equipment shall be suitable for baseline data generation, periodic monitoring, ground-truthing, and validation of remote sensing and model-derived datasets.

The scope shall mandatorily include the following instruments:

a) Current Meter / Acoustic Doppler Current Profilers (ADCPs)

Portable or deployable ADCPs/current meters capable of measuring current speed, direction, and vertical flow profiles across the water column under varying tidal and hydrodynamic conditions. The instruments shall support short-term deployments and real-time or logged data acquisition.

Technical Specifications

- Operating Frequencies: 600 kHz and/or 1200 kHz
- Maximum Profiling Range:
 - 1200 kHz: ≥ 25 m
 - 600 kHz: ≥ 100 m
- Bottom Tracking Range:
 - 1200 kHz: ≥ 35 m
 - 600 kHz: ≥ 100 m
- Maximum Depth Detection: ≥ 120 m (600 kHz)

- Velocity Accuracy: $\pm 0.25\%$ of measured value ± 0.2 cm/s
- Velocity Range: ± 5 m/s (default), extendable to ± 20 m/s
- Data Output Rate: 1–2 Hz (minimum)
- Beam Angle: 20° (typical)
- Integrated Sensors:
 - Temperature
 - Pressure
 - Tilt
 - Acoustic depth
 - Compass
 - Embedded GPS
- Communication Interfaces: RS-232 / USB / Bluetooth
- Data Logging: Internal memory with export capability
- Deployment Type: Boat-mounted / Bottom-mounted / Portable

b) Multi-Parameter Water Quality Sondes / Probes / Kits

In-situ water quality sondes/probes capable of measuring, at a minimum, Dissolved Oxygen (DO), pH, temperature, salinity, conductivity, and turbidity. The instruments shall be suitable for marine, brackish, and estuarine waters and shall support geo-referenced data logging.

Technical Specifications

- Measurement Temperature Range: 0°C to 50°C (32°F to 122°F)
- Sensor Technology:
 - Electrochemical (pH)
 - Amperometric (EC/TDS)
- Probe Type: Multi-sensor integrated probe
- Materials:
 - Stainless steel electrodes
 - Glass pH sensor
 - Polypropylene housing
- Data Logging: Internal memory with time & GPS tagging
- Power: Battery operated / rechargeable
- Deployment: Handheld / Fixed station

c) Eco-Sounder / Bathymetry Gauge

Single-beam or equivalent eco-sounder suitable for shallow-water bathymetric measurements and seabed profiling in coastal and nearshore zones.

Technical Specifications

- Channels: 1 or 2 frequency agile channels
- Frequency Range: 10 kHz to 250 kHz
- Depth Range: 0.5 m to 6,000 m
- Protection Rating: IP67 (minimum)
- Construction: Ruggedized, shock-proof
- Compatibility: Wide range of transducers

d) Sediment Sampling Equipment

Sediment corers and grab samplers suitable for collection of seabed and suspended sediment samples for sedimentological and environmental analysis.

Technical Specifications

- Sampler Type: Grab / Core
- Material: Stainless Steel (SS304 or higher)
- Operation Mode: Manual
- Sampling Capacity: ≥ 5 kg
- Diameter: Approx. 4 inch
- Rod Length: ≥ 1.5 m
- Surface Finish: Mirror finish
- Application: Marine sediment sampling, environmental studies

e) Handheld GPS / GNSS Units

Handheld GPS/GNSS devices with adequate horizontal positional accuracy for precise geo-referencing of all in-situ observations, sampling points, transects, and monitoring locations.

Technical Specifications

- Satellite Systems Supported:
 - GPS
 - GLONASS
 - BEIDOU
 - QZSS
- Horizontal Accuracy: ≤ 1 m (open sky)
- Display: ≥ 3.2 -inch TFT backlit screen
- Measurement Modes:
 - Area measurement
 - Distance measurement
 - Slope measurement
- Waterproof & Dustproof Rating: Minimum IP65
- Battery: Rechargeable
- Accessories:
 - Wrist strap
 - Charging cable

f) Ground-Truthing Kits

Field ground-truthing kits for validation of satellite and aerial data, including field accessories, sample containers, photographic documentation tools, and standardized data recording formats.

The bidder shall also provide all required calibration standards, reference solutions, consumables, spare sensors, batteries, cables, and accessories necessary for accurate operation and routine field deployment of the instruments throughout the project period.

The bidder shall ensure that all equipment:

- Is new and of proven performance,
- Conforms to relevant national and international standards,
- Is compatible with GIS and coastal data management systems, and
- Supports integration with geoportals and decision-support systems.

The bidder shall submit technical specifications, calibration certificates, compliance statements, and operation manuals as part of the technical bid. Any deviation from the specified requirements shall be clearly indicated in the compliance matrix.

A7. Socio-Infrastructural Survey

The bidder shall undertake to develop and provide the customized mobile app for comprehensive socio-infrastructural surveys covering coastal communities and associated infrastructure within the project area, in order to generate structured, verifiable, and geo-referenced datasets to support planning, regulatory compliance, and decision-support systems under coastal management frameworks.

The scope of work shall include household and community-level enumeration using scientifically designed and structured questionnaires mobile app which can be seamlessly integrated with proposed GIS software, where data can be directly seen as soon as the survey is completed. The surveys shall capture demographic, socio-economic, occupational, and livelihood-related attributes of coastal populations, with specific emphasis on fisheries-dependent and allied coastal communities.

The bidder shall conduct sample set of physical and spatial surveys of coastal infrastructure, including but not limited to:

- Fish landing centres and harbours,
- Cold storage and cold chain facilities,
- Fish markets, processing units, and storage yards,
- Associated access infrastructure such as approach roads, utilities, and service facilities.

The surveys shall include access and tenure assessment, documenting ownership, usage rights, customary access, seasonal usage patterns, and institutional or regulatory controls applicable to coastal resources and infrastructure.

The bidder shall also undertake stakeholder identification and preference profiling, covering key stakeholder groups such as fishers, vendors, processors, cooperatives, local bodies, and relevant line departments. The profiling shall capture needs, constraints, perceptions, and preferences relevant to coastal resource use, infrastructure development, and policy interventions.

All socio-infrastructural data shall be collected using standardized survey instruments, supported by field verification, geo-tagged observations, and photographic documentation wherever applicable. Data collection shall be carried out in compliance with applicable ethical standards and confidentiality requirements.

The scope shall further include data entry, validation, cleaning, coding, and anonymization of all collected survey data to ensure data quality, privacy protection, and readiness for analysis. The final datasets shall be delivered in formats compatible with GIS platforms, coastal geoportals, and decision-support systems.

The bidder shall submit survey methodologies, mobile app details, questionnaire formats, sampling design, and data management protocols for approval prior to commencement of field activities. All outputs shall conform to the requirements of relevant coastal regulatory, fisheries, and socio-economic monitoring frameworks.

Here is the questionnaire which need to be collected.

Section A: General Information (Enumeration Details)

| Sl. No | Question / Indicator | Response Type | Enumerator Notes |
|--------|----------------------------------|----------------|---|
| A1 | Survey ID / Household ID | Alphanumeric | Unique identifier |
| A2 | Date of Survey | Date | DD/MM/YYYY |
| A3 | Enumerator Name | Text | |
| A4 | Village / Ward / Hamlet | Text | |
| A5 | Coastal Stretch / Landing Centre | Text | If applicable |
| A6 | GPS Coordinates (Lat, Long) | Numeric / Auto | Mandatory |
| A7 | Type of Respondent | MCQ | Household / Individual / Facility / Institution |

Section B: Demographic Profile

| Sl. No | Question / Indicator | Response Type | Enumerator Notes |
|--------|----------------------|---------------|-----------------------------------|
| B1 | Age Group | MCQ | <18 / 18–30 / 31–45 / 46–60 / >60 |
| B2 | Gender | MCQ | Male / Female / Other |
| B3 | Education Level | MCQ | Illiterate to Postgraduate |
| B4 | Household Size | Numeric | No. of members |

Section C: Livelihood and Occupation

| Sl. No | Question / Indicator | Response Type | Enumerator Notes |
|--------|--|---------------|----------------------------|
| C1 | Primary Occupation | MCQ | Fisheries / Allied / Other |
| C2 | Secondary Occupation | Text | |
| C3 | Average Working Days per Month | Numeric | |
| C4 | Seasonal Dependence on Coastal Resources | MCQ | High / Medium / Low |

Section D: Infrastructure Usage and Accessibility

| Sl. No | Question / Indicator | Response Type | Enumerator Notes |
|--------|--|---------------|--|
| D1 | Nearest Fish Landing Centre Used | Text | |
| D2 | Distance to Landing Centre (km) | Numeric | |
| D3 | Mode of Transport | MCQ | |
| D4 | Facilities Available at Landing Centre | Multi-select | Auction / Ice / Water / Sanitation / Power |
| D5 | Access to Cold Chain Facilities | Yes / No | |
| D6 | Type of Cold Chain | MCQ | Ice / Cold Storage / Reefer |
| D7 | Nearest Fish Market Used | Text | |
| D8 | Distance to Market (km) | Numeric | |

Section E: Access, Tenure, and Usage Rights

| Sl. No | Question / Indicator | Response Type | Enumerator Notes |
|--------|--|---------------|--|
| E1 | Nature of Access to Coastal / Marine Resources | MCQ | Customary / Lease / Permit / Informal |
| E2 | Infrastructure Ownership Type | MCQ | Government / Cooperative / Private / Community |
| E3 | Conflict Related to Access or Usage | Yes / No | |
| E4 | Brief Description of Conflict | Text | If applicable |

Section F: Environmental and Regulatory Awareness

| Sl. No | Question / Indicator | Response Type | Enumerator Notes |
|--------|---|---------------|-------------------------------------|
| F1 | Awareness of CRZ / Coastal Regulations | MCQ | Aware / Partially Aware / Not Aware |
| F2 | Observed Changes in Coastal Environment | Multi-select | Erosion / Catch Decline / Pollution |
| F3 | Impact of Regulations on Livelihood | MCQ | Positive / Neutral / Negative |

Section G: Stakeholder Preferences and Needs

| Sl. No | Question / Indicator | Response Type | Enumerator Notes |
|--------|---|------------------------|------------------|
| G1 | Priority Infrastructure Needs | Ranking / Multi-select | |
| G2 | Preferred Government / Agency Support | MCQ | |
| G3 | Willingness to Participate in Consultations | Yes / No | |

Section H: Additional Observations

| Sl. No | Question / Indicator | Response Type | Enumerator Notes |
|--------|-------------------------------|---------------|------------------|
| H1 | Key Issues / Challenges Faced | Text | Open-ended |
| H2 | Suggestions for Improvement | Text | Open-ended |

A.8. Trainings & Knowledge Transfer

The bidder shall design, organize, and conduct structured training programmes, workshops, and capacity-building sessions for project staff to operate the GIS software and mobile app.

The training and capacity-building activities shall aim to enhance technical understanding, operational skills, regulatory awareness, and effective participation in project-related processes, including data collection, monitoring, analysis, compliance, and decision-making under coastal and marine management frameworks.

The scope shall include planning and delivery of both classroom-based software training and field-oriented sessions using mobile app, as appropriate, covering relevant thematic areas identified by the Client. The bidder shall prepare training modules, presentations, handouts, and reference materials in suitable formats and languages for effective dissemination.



Principal Investigator,
Veraval Regional Centre of CMFRI,
MatsyaBhavan, Bhidiya, Veraval

Annexure - II

INSTRUCTIONS TO BIDDERS

1. The tender is in Two Bid System. These bids are to be uploaded to online modes only.
2. Tenders are required to be submitted with Earnest Money deposit (EMD) amounting to **Rs. 5,50,000/- the EMD must be deposited in off line with the Scientist-in-Charge, Veraval Regional Station of ICAR-CMFRI, Matsya Bhavan, Bhidiya, Veraval well before closing date & time for submission of bids, in the form of a demand Draft drawn in favour of ICAR UNIT CMFRI payable at Kochi from any of the scheduled commercial Bank**, failing which the bid is liable to be rejected. No conditional bid will be accepted. The EMD will be refunded to the unsuccessful bidders as soon as practicable after a decision has been taken on the Tender and to the successful bidders after furnishing the required security deposit for the contract. If Bidder has valid startup India and MSME both certificate than EMD will be exempted and Bidder need to submit the EMD Exemption letter along with proof of EMD Exemption certificates which has asked.
3. The tender must be uploaded to the online portal only and shall be accompanied with all other necessary documents in the prescribed formats. Financial quotes must be comprehensive and all-inclusive for each component (Annexure -VII, VII-A and VII-B), covering procurement, licensing, fabrication/installation, logistics, manpower, training, calibration, insurance, taxes/duties, and incidental expenses. must be strictly all-inclusive and shall cover all associated costs including procurement, fabrication, packaging, transportation, loading and unloading, manpower, on-site deployment, marine logistics, installation, demonstration, and any other incidental or statutory expenses. The consolidated final amount to be charged has to be indicated in India Rupees both in words and figures in the prescribed proforma of Bill of Quantity (BOQ) and there shall be no correction or overtyping etc. The offers with any corrections/deviation in prices in words/figures shall be summarily ignored. The conditional offer (S) shall, in no case, be accepted.
4. The work shall normally be awarded to a single firm whose consolidated bid value is lowest meeting all scopes of work and fulfilling all the term and conditions of the tender. Technical bid will be given first preference for evaluation. The Finance Bid will be opened only for those bidders who will be technically qualified in technical bid. The CMFRI reserves the right to reject all or any of the quotations, and decision Director, CMFRI in the matter shall be final/binding. The quotations lower than the existing statutory minimum wages as per Central Govt. rate or State Govt. rate whichever is higher for the corresponding categories shall be summarily rejected.

5. The successful bidder shall have to deposit 3% of the total bid amount (quoted for full period) as performance security and within the time frame indicated by the CMFRI. Exemptions for SMEs and startups will be as per the stipulated guidelines by the Govt. of India.
6. No interest on Performance security and Earnest Money deposits shall be paid by the CMFRI to the tenderer.
7. The firm is being permitted to give tenders in consideration of the stipulations on his part that after submitting his tenders, he will not resile from his offer or modify the terms and conditions thereof. If the tenderer fails to observe and comply with the forgoing stipulation the aforesaid amount of EMD will be forfeited by the Institute. In the event of the offer made by the tenderer not being accepted, the amount of earnest money deposited by the tenderer will be refunded to him after he has applied for the same.
8. The performance Security shall be valid till all contractual obligations are fulfilled by the firm. The same shall stand forfeited in case of cancellation of the contract for any breach of contract or for any deficiency in the performance noticed during the currency of the contract.
9. The tenderer is liable to be ignored if complete information as required is not given therein or if the particulars asked for in the schedules to the tenders is not fully filled in. Individual signing the tenders or other documents connected with the contract may specify whether he signs it in the capacity of (i) a sole proprietor of the Firm or constituted attorney of such sole proprietor, or (ii) a partner of the firm if it be partnership in which case he must have authority to refer to arbitration dispute concerning the business of the partnership whether by virtue of the partnership agreement or power of attorney or (iii) constituted attorney of the firm if it is a company.
10. In case of Partnership firms, where no authority has been given to any partner to execute the contract/agreement concerning the business of the Partnership, the tenders and all other related documents must be signed by every partner of the Firm. A person signing the tenders form or any other documents forming part of the contract on behalf of another shall be deemed to warranty that he has Authority to bind such other and if, on enquiry it appears that the person so signing had no authority to do so, the Institute shall without prejudice to other Civil and Criminal remedies cancel the contract and hold the signatory liable for all costs and damages. Each page of the tender and schedules to the tenderer and annexure, if any, signed by the tenderer.

11. Acceptance by the CMFRI will be communicated by fax/Telegram, letter or any other form of communication, Formal letter of the acceptance and work order of the Tenders will be forwarded as soon as possible, but the earlier instruction in the FAX/Telegram/Letter etc. should be acted upon immediately.



Principal Investigator,
Veraval Regional Centre of CMFRI,
MatsyaBhavan, Bhidiya, Veraval

Annexure - III

TERMS AND CONDITIONS OF THE CONTRACT

(A). Terms of Reference (ToR) and conditions for material supply/work execution:

1. **Delivery & Commissioning:** Hardware, software, and lab infrastructure must be installed, commissioned, and tested on-site with acceptance sign-off by PI, CMFRI.
2. **Data Standards:** CRS WGS84 (EPSG:4326) for ocean-wide layers; projected CRS UTM Zone 43/44N or India-specific equal-area projections for analysis; target scales 1:25,000-1:50,000 for coastal zonation grids; full ISO 19115 metadata.
3. **Quality Assurance:** Provide QA/QC protocols for digitization, satellite data processing, and field measurements; calibration certificates for instruments; validation reports contrasting satellite-derived indices with in-situ measurements.
4. **Deliverables (As per Annexure – VII) :** GIS database (vector/raster), zonation maps (PDF/GeoTIFF), site suitability index layers, MCDA/AHP model documentation, field survey app datasets, socio-infrastructure datasets (anonymized), training manuals, and final technical report.
5. **Training:** At least 3 training sessions covering workflows (data ingestion, processing, modeling, validation, reporting).
6. **IP Ownership & Confidentiality:** All IP generated or improved under the contract shall be owned by ICAR-CMFRI; suppliers must maintain confidentiality and are barred from third-party disclosure.
7. **Bid Format:** Quote single consolidated lump-sum price component-wise in the BOQ; conditional/optional/multi-part pricing will be treated as non-responsive.
8. **Opening & Evaluation:** Technical Bid will be evaluated first; only technically qualified bids will have Financial Bid opened.
9. **Subcontracting:** Allowed for specialized tasks with prior written approval; primary bidder remains responsible for deliverables and quality.
10. **Termination:** CMFRI may terminate the contract with a 15-day notice in case of shortcomings or deficiencies; decision of Director, CMFRI is final and binding.
11. **Extension:** Subject to satisfactory performance, the contract may be extended on same rates, terms, and conditions.

12. Performance Security: 3% of total bid amount; forfeiture in case of breach or deficiency in performance.
13. Liability & Insurance: Bidder to ensure safety of personnel/equipment; marine operations insurance recommended; CMFRI bears no liability for bidder's staff.
14. Compliance: All operations must comply with national/state regulations for marine surveys, safety, and data handling.
15. Handover: Final data, models, documentation, and licenses (institutional) to be handed over; revoke any user-bound licenses post-handover as per terms.

(B). Terms of Reference (ToR) and conditions for financial quote by the bidder.

In view of the sensitivity of the tendered material supply/work, the following terms and conditions were given below for better understanding the scope of work and costs for the following must be included along with the **final price** quoting in BOQ. Refer Annexure-I, and Annexure -VII.

Annexure-IV

ELIGIBILITY CRITERIA

| S. No. | Empanelment criteria | Supporting documents | Compliance (Yes/ No) |
|--------|--|--|----------------------|
| 1 | The bidder should be a Company registered in India under the Companies Act 1956 or a partnership registered under the India Partnership Act 1932 with their registered office in India or Proprietary / LLP registered with the relevant competent authority. | Certificate of Incorporation/Registration and Attested copy of the Memorandum or Articles of Association | |
| 2 | The bidder should be operating in the field of GIS software development provided GIS software solutions for a minimum of last three years and must have completed minimum 5 assignments of GIS websites/ portals/ application development for Private/ Central Govt./PSU/State Government. | Copy of Work Order, Customer satisfaction certificate should be attached. | |
| 3 | The bidder shall have an annual turnover of at least Rs. 200 Lakhs in the last three financial years (i.e. 2024-2025, 2023-2024, 2022-2023) obtained through Geospatial and allied software development. | Audited Financial Statements and Annual Report and Certified statement from the current Statutory Auditors of the bidder | |
| 4 | The bidder should not currently have been blacklisted by any Government Agency under a declaration of ineligibility for fraudulent or corrupt practices ineffective performance. | Certified statement from the Authorized or Signatory of the bidder | |
| 5 | Bidder has an operational dedicated software development center in India | Certified statement from the authorized signatory of the bidder. | |
| 6 | The bidder shall be an Indian OEM. If the bidder is not an Indian OEM, a valid OEM authorization certificate from an Indian OEM for the quoted software must be submitted along with the bid. | Certified patent certificate or MAF from OEM certificate | |
| 7 | Bidder must completed enterprise GIS project which includes satellite data providing, DGPS survey, Product Deliver, Mobile and Web GIS application customization, AI/ML tool development, auto feature extraction and change detection using GeoAI | Copy of work order/work completion | |

| | | | |
|----|--|--|--|
| 8 | Bidder must have experience in onsite GIS resource deployment | Copy of work order/work completion certificate | |
| 9 | The bidder should have positive net worth during the past three (3) years | CA Certificate | |
| 10 | The bidder should have a) ISO 9001:2015 Certification in IT/ ICT/ Application Development / GIS related activities /Cloud Services and Spatial Decision Support System; b) ISO 27001:2013 Certification in Geographic Information System, Cloud Services, Applications Development, Mobile Application Development Or The bidder should have CMMI Level 3 or higher certification | Copy of ISO certificates or CMMI Certificate | |
| 11 | The bidder should have more than 40 staff | HR Certificate | |
| 12 | The bidder should have completed one Enterprise GIS project | Copies of Work Order & Completion Certificate/ Invoices | |

Annexure-V

TECHNICAL BID (Format)

Refer: Annexure-I & Annexure-IV for complete details

NOTE:

ALL NECESSARY DOCUMENTS IN SUPPORT OF THE DETAILS FOR THE WORK CONTRACT MUST ACCOMPANY THAT TECHNICAL BID. THE BID IS LIABLE TO BE REJECTED IN CASE DOCUMENTS ARE NOT SUBMITTED IN THE TECHNICAL BID. DOCUMENTS ARE IN COMPLETE IN CASE ANY CERTIFICATION/REGISTRATION HAS ALREADY EXPIRED BUT IS YET TO BE RENEWED. ONLY ESSENTIAL AND NECESSARY VALID DOCUMENTS ARE TO BE ATTACHED WITH THE TECHNICAL BID. PLEASE AVOID ENCLSOING OF EXTRANEOUS AND IRRELEVANT DOCUMENTS WHICH UNNECESSARY CAUSES CONFUSION WHICH MAY RESULTS IN DISQUALIFICATION OF THE BID IN SHEER CONFUSION.

Following sections to be covered:

- a. Organization profile on letterhead.
- b. Team composition with CVs and roles/responsibilities.
- c. Detailed methodology: data sources, processing pipelines, model, validation plan, escalation matrix, training plan, solution architecture etc..
- d. Workplan and Gantt chart for milestones.
- e. Hardware specifications and lab layout drawings; power & HVAC plan.
- f. Software license details and support plan.
- g. Risk management and safety SOPs for marine operations.

Technical Qualification:

| Sl No | Specific experience of the bidder relevant to the assignment / job | 100 Marks | Proofs to be submitted |
|-------|---|-----------|---|
| 1 | The bidder must have more than INR 2 Cr as average annual turnover in last 3 financial years ending 31.03.2025. The annual turnover shall be from 75 Lakhs – 5 marks 1.5 Cr – 7 marks 2 Cr – 10 marks | 10 marks | Audit reports to be submitted certified by CA |
| 2 | The Bidder with following certifications: a. Valid CMMI Level 3 Certification in Application | 10 Marks | Certificate copies to be enclosed. |

| | | | |
|---|--|----------|---|
| | <p>Development, Cloud Services, Machine Learning and Artificial Intelligence = 5 marks</p> <p>b. Valid ISO 27001:2013 Certification in Geographic Information System, Cloud Software Development, Mobile Application Development = 3 Marks</p> <p>c. Valid ISO 9001:2008/2015 Certification in IT/ ICT/ Software Development / GIS related activities /Cloud hosting and Spatial Decision Support System = 2 Marks</p> | | (Any of the required components should be mentioned in the certificate) |
| 3 | <p>The Bidder must have experience in providing GIS manpower of more than Rs. 25 Lakhs for Govt. Dept.s/ PSUs:</p> <p>a. 1 project =5 marks</p> <p>b. 2 or more projects = 10 marks</p> | 10 marks | Work orders/ Agreements/ Completion Certificates |
| 4 | <p>The Bidder must have experience in development of Web- GIS system, mobile application, Desktop Application on Open Source Technologies for Govt. Dept.s/ PSUs</p> <p>a. 1 project = 5 marks</p> <p>b. 2 projects = 10 marks</p> | 10 marks | Work orders/ Agreements / Completion Certificates |
| 5 | <p>The Bidder must have experience in implementing GeoAI projects more than 50 Lakhs for Govt. Dept.s/ PSUs:</p> <p>a. 1 project value of 50 Lakhs =3 marks</p> <p>b. 2 or more projects of 50 Lakhs = 5 marks</p> <p>c. 1 Project value of 300 Lakhs = 10 Marks</p> | 10 marks | Work orders/ Agreements / Completion Certificates |

| | | | |
|---|--|----------|--|
| 6 | Technical Proposal including technology, product, application, Ai tools experience | 50 marks | |
|---|--|----------|--|

Note: The minimum score to get qualified for financial opening is 70 marks which is mandatory.

Annexure -VI
(Essential certificate given by the bidder as a part of Technical Bid)

To
The Director,
ICAR-CMFRI, Kochi-18.

It is confirmed that I/We have fully understood the scope of work and all other requirements for components A1-A9, B, and C as per the prescribed specifications and supply conditions for CMFRI Veraval Regional Station. I/We agree to the terms and conditions of the contract and undertake that the documents enclosed are genuine. We are not blacklisted by any Government organization. This offer is valid for 90 days from the date of opening of the Bid.

For detail understanding the scope of work.

1. I/We hereby agree to the terms and conditions of the contract as detailed in the tender document.
2. We undertake that the documents enclosed herewith are genuine and no material/facts have been concealed or suppressed.
3. We are not blacklisted by any Government organization.
4. We also understand that the contract is liable to be cancelled if found to be obtained through fraudulent means or by concealment of information/facts.

This offer is made to be valid for acceptance by CMFRI within 90 days from the date of opening of the Bid.

Date:

Signature & Seal of the Tenderer
(Stamp/Seal of the Firm)

Annexure -VII
PROJECT DELIVERABLES (Bill of Quantity)

| Sl No | Description | QTY | Cost |
|--------------|---|------------|-------------|
| 1 | Physical and hydrographic charts supporting spatial data generation requirements, procurement for the 2340 km coast (2340 km new coast length) for the zoning regions | Lumpsum | |
| 2 | Digitization of geospatial charts for 13 coastal districts along 12 nautical mile transit trajectory with enlarged scales for the spatial zonation process, along with spatial gridding | Lumpsum | |
| 3 | Oceanographic (Physical, Chemical and Biological data sets) Satellite data processing for territorial waters off Gujarat and its allied data transformation works/activities etc. for the spatial zonation and its parameter mapping | Lumpsum | |
| 4 | Geospatial Lab Setup (Advanced dedicated Geographical Information Systems workstations (Tyron / Xeon processor or equivalent specification), workstation computers 4 numbers (2 high configuration and 2 support laptop/desktop systems) each with optimized specifications and advanced configuration along with its necessary accessories and safety fixtures, customised cabins spaces, digital display, other geospatial laboratory related requirement), HVAC controlling systems for workstations (heating, ventilation, and air conditioning) (4 no), data storage facility, high power backup facility, stabilizers, modems, necessary accessories, digital displays, fittings, and supporting fixtures, with space and necessary infrastructure and it's all allied requirements etc) - Refer Annexure - VII-A for detail | Lumpsum | |
| 5 | Geographic Information Software, Eriddes / MapInfo / AHP and other supporting analytical software related to spatial data analytics with users/ works/floating licensing etc.) | Lumpsum | |
| 6 | In-situ Oceanographic parameter (Physical, Chemical, and Biological) data collection equipment, (Digital current meter, water quality probes/digital kits/, Eco-sounder/bathymetry measuring equipment/depth gauges/corer/ grabs/GPS and other ground truthing related equipment) - Refer Annexure-VII-B for detail | Lumpsum | |
| 7 | Socio-infrastructure survey mobile app (Enumeration, physical survey etc) | Lumpsum | |
| | Total | | |

Annexure -VII-A
PROJECT DELIVERABLES (Bill of Quantity)

| Sl No | Description | Qty | Unit Price | Total Amount |
|---------------------|--|------------|-------------------|---------------------|
| 4.1 | High end work station (Intel® Xeon/i9 Processor, 16GB RAM, Nvidia RTX A1000, 4GB GDDR6, 27Inch Monitor, 1TB SSD, Wired Keyboard and Mouse, Windows 10 Pro) | 1 | | |
| 4.2 | Desktop Computer work stations (Intel® Core™ i5, 8GB RAM, 1TB HDD, 27 Inch Monitor, Wireless Driver, Intel AX211 Wi-Fi 6E 2x2, Bluetooth, Wired Keyboard and Mouse, Windows 10 Pro) | 2 | | |
| 4.3 | High Laptops (13th Gen Intel® Core™ i5, 8GB RAM 512GB HDD, 15 inch Screen, 1GB Graphics Card.) | 2 | | |
| 4.4 | Big size LCD display (Display size minimum 100 inch either single or dual block setup) | 1 | | |
| 4.5 | HVAC controlling systems for workstations : heating, ventilation, and air conditioning (AC 1.5 ton) - 1.5 ton inverter Split AC, 4-IN-1 Adjustable mode, Energy Efficient, High ambient Cooling-cools even at 52°C, Anti dust filter with Anti-microbial | 4 | | |
| 4.6 | Data storage devices/ Hard disk (Storage size > 10 TB, Transfer Speed > 3MBPS, Synology Diskstation) | 4 | | |
| 4.7 | Video Conferencing Camera - 4K High Definition Camera, USB 3.0 – Ideal for Meetings on Zoom, Google Meet, PC, Laptop, MacBook | 1 | | |
| 4.8 | Video Conferencing Micro Phone - Wireless Conference Speakerphone with Mute Feature, Loud Voice, Noise Reduction, 360°Pickup Up to 20ft | 1 | | |
| 4.9 | Internet modem - 5G supported model with more than 100 GBPS Speed | 2 | | |
| 4.1 | High Power Backup Facility - UPS + Inverter + Batteries (Minimum 15 Minutes Backup facility) | 1 | | |
| 4.12 | Infrastructure and allied requirement - Conference Table | 1 | | |
| 4.13 | Infrastructure and allied requirement -Executive chairs | 1 | | |
| 4.14 | Infrastructure and allied requirement -conference room chairs / working table chairs | 10 | | |
| 4.15 | Infrastructure and allied requirement -Working cubicles/ or working tables | 4 | | |
| 4.16 | Electric Wiring and fixtures | 1 | | |
| 4.17 | Infrastructure and allied requirement - Lab furnishing including color, light paneling and carpenter works | 1 | | |
| Total Amount | | | | |

Annexure – VII-B
PROJECT DELIVERABLES (Bill of Quantity)

| Sl No | Description | Qty | Unit Price | Total Amount |
|--------------|--|------------|-------------------|---------------------|
| 6.1 | Digital Current Meters / Acoustic Doppler Current Profilers (ADCPs): Portable or deployable ADCPs/current meters capable of measuring current speed, direction, and vertical flow profiles across the water column under varying tidal and hydrodynamic conditions. | 1 | | |
| 6.2 | Multi-Parameter Water Quality Sondes / Probes :The instruments shall be suitable for marine, brackish, and estuarine waters and shall support geo-referenced data logging. Minimum parameters to captures for Dissolved Oxygen (DO), pH, temperature, salinity, conductivity, and turbidity. | 1 | | |
| 6.3 | Eco-Sounder / Bathymetry Gauge: Channels: 1 or 2 frequency agile channels, Frequency Range: 10 kHz to 250 kHz, Depth Range: 0.5 m to 6,000 m, Protection Rating: IP67 (minimum) | 1 | | |
| 6.4 | Sediment Sampling Equipment : Sampler Type: Grab / Core, Material: Stainless Steel (SS304 or higher), Operation Mode: Manual, Sampling Capacity: \geq 5 kg, Diameter: Approx. 4 inch, Rod Length: \geq 1.5 m | 1 | | |
| 6.5 | Handheld GPS / GNSS Units :Horizontal Accuracy: \leq 1 m (open sky), Display: \geq 3.2-inch TFT backlit screen, Measurement Modes should be area, distance and slope measurement, Minimum IP65, Rechargeable. | 1 | | |
| 6.6 | Ground Truthing Kits : Field ground-truthing kits for validation of satellite and aerial data, including field accessories, sample containers, photographic documentation tools, and standardized data recording formats, spare sensors, batteries, and cables | 1 | | |
| | Total | | | |

Annexure – VIII
BILL OF QUANTITY (BOQ) - Guidance

- Quote consolidated lump-sum for each component of Annexure -VII, VIIA and VIIB.
- Prices must include licensing, installation, calibration, training, logistics, insurance, and incidental expenses.
- Prices must quote exclude of GST
- No corrections/overtyping in amounts; conditional/optional pricing will be rejected.
- Individual components may be evaluated independently; award may be made to single or multiple firms at CMFRI's discretion.

Annexure-IX

Time Line and Payment Terms

Project Timeline (Total Duration: 8 Weeks)

Phase 1-Inception & Planning (Week 1)

Deliverables

- Inception Report
- Detailed Execution Plan
- Finalization of spatial zonation framework
- Procurement planning for hardware, software, and in-situ equipment

Phase 2 -Execution, Digitization & Deployment (Weeks 2-4)

Deliverables

- Digitized geospatial charts for 13 coastal districts (12 NM extent)
- Satellite data processing outputs for physical, chemical, and biological parameters
- Delivery and installation of GIS Lab hardware & infrastructure
- Delivery and installation of licensed GIS & analytical software
- Delivery of in-situ oceanographic data collection equipment
- Beta version deployment of socio-infrastructure survey mobile app

Phase 3- Integration & Closure (Weeks 4-8)

Deliverables

- Integrated spatial zonation datasets
- Parameter-wise thematic maps & analytics
- Calibration of hardware, software, and field equipment
- Final Project Completion Report
- BOQ verification and sign-off from PI, CMFRI

Payment Terms

| Milestone | Payment % | Trigger Condition |
|--------------------|------------------|--|
| Milestone 1 | 30% | Submission and approval of Inception Report & Detailed Execution Plan – Week 1 |
| Milestone 2 | 50% | Delivery & installation of all equipment including: GIS software, GIS lab hardware, and in-situ oceanographic equipment – Week 6 |
| Milestone 3 | 20% | Completion of Week 8, submission of final deliverables, and BOQ-wise sign-off by PI, CMFRI |

Notes (Tender-Compliant)

1. Total project implementation duration shall not exceed **8 Weeks** from the date of award.
2. Payments shall be released only against certified deliverables and milestone approvals.
3. All deliverables shall conform to the approved BOQ and technical specifications.
4. The work shall normally be awarded to a single firm whose consolidated bid value is lowest meeting all scopes of work and fulfilling all the term and conditions of the tender. Technical bid will be given first preference for evaluation. The Finance Bid will be opened only for those bidders who will be technically qualified in technical bid. The CMFRI reserves the right to reject all or any of the quotations, and decision Director, CMFRI in the matter shall be final/binding. The quotations lower than the existing statutory minimum wages as per Central Govt. rate or State Govt. rate whichever is higher for the corresponding categories shall be summarily rejected.
5. The successful bidder shall have to deposit 5% of the total bid amount (quoted for full period) as performance security and within the time frame indicated by the CMFRI. Exemptions for SMEs and startups will be as per the stipulated guidelines by the Govt. of India.
6. No interest on Performance security and Earnest Money deposits shall be paid by the CMFRI to the tenderer.
7. The firm is being permitted to give tenders in consideration of the stipulations on his part that after submitting his tenders, he will not resile from his offer or modify the terms and conditions thereof. If the tenderer fails to observe and comply with the forgoing stipulation the aforesaid amount of EMD will be forfeited by the Institute. In the event of the offer made by the tenderer not being accepted, the amount of earnest money deposited by the tenderer will be refunded to him after he has applied for the same.
8. The performance Security shall be valid till all contractual obligations are fulfilled by the firm. The same shall stand forfeited in case of cancellation of the contract for any breach of contract or for any deficiency in the performance noticed during the currency of the contract.
9. The tenderer is liable to be ignored if complete information as required is not given therein or if the particulars asked for in the schedules to the tenders is not fully filled in. Individual signing the tenders or other documents connected with the contract may specify whether he signs it in the capacity of (i) a sole proprietor of the Firm or constituted attorney of such sole proprietor, or (ii) a partner of the firm if it be partnership in which case he must have authority to refer to arbitration dispute concerning the business of the partnership whether by virtue of the partnership agreement of power of attorney or (iii) constituted attorney of the firm if it is a company.
10. In case of Partnership firms, where no authority has been given to any partner to execute the contract/agreement concerning the business of the Partnership, the tenders and all other related documents must be signed by every partner of the Firm. A person signing the tenders form or any other documents forming part of the contract on behalf of another shall be deemed to warranty that he has Authority to bind such other and if, on enquiry it appears that the person so signing had no authority to do so, the Institute shall without prejudice to other Civil and Criminal remedies cancel the contract and hold the signatory liable for all costs and damages. Each page of the tender and schedules to the tenderer and annexure, if any, signed by the tenderer.

11. Acceptance by the CMFRI will be communicated by fax/Telegram, letter or any other form of communication, Formal letter of the acceptance and work order of the Tenders will be forwarded as soon as possible, but the earlier instruction in the FAX/Telegram/Letter etc. should be acted upon immediately.



Principal Investigator,
Veraval Regional Centre of CMFRI,
MatsyaBhavan, Bhidiya, Veraval

Annexure -X
Documents to be uploaded with the bids

| Sl. No. | Documents | File format |
|---------|--|------------------------|
| 1 | Profile on letter head* | PDF Format |
| 2 | Company Incorporation Certificate* | PDF Format |
| 3 | PAN Copy* | PDF Format |
| 4 | GST registration* | PDF Format |
| 5 | ITR/ Turnover of last 3 year* | PDF Format |
| 6 | Geo Portal and DSS Project Experience * | PDF Format |
| 7 | GeoAI Project Experience* | PDF Format |
| 8 | Agriculture/Aquaculture Project Experience | PDF Format |
| 9 | Manpower Supply Certificate* | PDF Format |
| 10 | GIS Product Supply Order* | PDF Format |
| 11 | Field App Supply Order | PDF Format |
| 12 | OEM Certificate/MAF* | PDF Format |
| 13 | Patent/Copyright Certificate for Make in India | PDF Format |
| 14 | HR Certification for Manpower* | PDF Format |
| 15 | Startup India DPIIT Certificate | PDF Format |
| 16 | MSME Certificate* | PDF Format |
| 17 | Labor Certificate | PDF Format |
| 18 | ISO 9001 Certificate | PDF Format |
| 19 | ISO 27001 Certificate | PDF Format |
| 20 | CMMI Level 3 Certificate | PDF Format |
| 21 | Annexure – V: Technical Proposal (SoW/SW compliances, Architecture, timeline, methodology and deliverables)* | PDF Format |
| 22 | Annexure - VI | PDF Format |
| 23 | Annexure – VII: BoQ* | PDF Format/ Xls format |
| 24 | Other documents if any | PDF Format |