

# Call for Quotation/Application for Consultancy Service

**Title: IT Technical Consultancy for Sea Turtle Conservation through:**

- (1) Development and Deployment of a Bycatch Reporting Application for Fishers
- (2) Pilot Testing of an AI-based Sea Turtle Photo Identification System at Con Dao National Park

## 1. Background

The International Union for Conservation of Nature (IUCN) Vietnam and its partners are supporting marine biodiversity conservation and sea turtle protection initiatives in Vietnam through community engagement, fisheries collaboration, and the application of innovative technologies.

Illegal capture, incidental bycatch, and insufficient monitoring data continue to pose significant challenges for marine species conservation in Vietnam. In parallel, traditional sea turtle tagging methods using metal tags require substantial long-term operational effort and may have limitations in data consistency, recapture rates, and scalability.

To strengthen monitoring effectiveness and improve data collection systems, IUCN Vietnam seeks a qualified consulting team/service provider to:

1. Further develop and scale up an open mobile-based bycatch reporting/monitoring application sea turtles for fishers; and
2. Pilot an AI-assisted Sea Turtle Photo Identification (Photo ID) system at Con Dao National Park as a potential non-invasive complementary or alternative method to conventional metal tagging.

The IT technical consultancy will contribute to strengthening marine conservation monitoring systems, improving fisher participation, and promoting the application of digital technologies in biodiversity conservation in Vietnam.

## Project Reference:

- (1) Protecting Viet Nam's sea turtles and empowering small-scale fishers for a sustainable future (RfP Reference: P05302)**

The project aims to work hand-in-hand with small-scale fishers and local authorities to tackle bycatch and promote sustainable fisheries management. By combining local knowledge with accessible technology, we hope to protect endangered species and strengthen the livelihoods of the communities that depend on them. Project will pilot this initiative in Gia Lai (old Binh Dinh) Province, working with 15–40 small-scale fishing boats, fisheries managers, and conservation organisations.

The project will strengthen community participation in marine biodiversity conservation by reducing turtle bycatch through a volunteer observer network, assessing migratory species to inform mobile marine protected areas, and promoting awareness and education. The initiative contributes directly to Vietnam's commitments under national endangered species protection laws and aligns with global biodiversity and sustainability goals (CBD, SDG 14: Life Below Water) by safeguarding critical marine habitats and fostering resilient coastal communities.

## **(2) Sea Turtle Conservation and Reduction of Fisheries Bycatch through Volunteer Network Establishment (RfP Reference: P05121)**

The project aims to strengthen the conservation of marine biodiversity, particularly sea turtles and their habitats, through community engagement, scientific research, fisheries collaboration, and environmental education.

Through the specific objectives project will (1) Promote community-based sea turtle conservation through improved management of nesting beaches and feeding grounds, active volunteer engagement, and strengthened collaboration with local Marine Protected Areas (MPAs) and National Parks; (2) Reduce sea turtle bycatch and mortality in fisheries by establishing and supporting a volunteer observer network operating at sea; (3) Assess the distribution, movement, and diversity of migratory marine species, including sea turtles and marine mammals, to inform the proposal and development of mobile marine protected areas; (4) Conduct awareness-raising activities and environmental education programs to enhance public understanding and support for marine ecosystems and sea turtle conservation.

### **Position Details**

- Title: IT Technical Consultant
- Category: National Individual Consultant (Vietnamese)
- Duration: 70 working days, spread over 07 months (June – Dec 2026)
- Payment Modality: Delivery-based (against accepted deliverables)

### **About IUCN**

The International Union for Conservation of Nature (IUCN) is a global membership Union uniquely composed of both government and civil society organisations. It provides public, private, and non-governmental entities with the tools and knowledge needed to advance sustainable development and biodiversity conservation. IUCN combines the latest science with traditional knowledge and stakeholder engagement to support effective and equitable environmental governance.

More information: [www.iucn.org](http://www.iucn.org)

## **2. Objectives**

### **Component 1 – Bycatch/Monitoring Reporting Application**

The objectives of this component are to:

- Improve and expand the existing open mobile application for reporting incidental capture (bycatch) and monitoring of sea turtles and marine wildlife.
- Improve accessibility and usability for fishers operating in low connectivity environments.
- Strengthen local ownership through technical transfer, training, and data management handover to local authorities and IUCN.
- Improve reporting efficiency and promote long-term user adoption among fishers.

### **Component 2 – Sea Turtle Photo Identification System**

The objectives of this component are to:

- Develop and pilot an AI-assisted sea turtle photo identification system using image-based individual recognition.
- Assess the feasibility of Photo ID as a complementary or future alternative to traditional metal tagging methods.
- Establish a standardised image collection workflow and database for long-term sea turtle monitoring.
- Strengthen technical capacity for park rangers and volunteers in digital monitoring approaches.

### **3. Description of the Assignment**

The consultant will coordinate and oversee the implementation of key IT operational activities related to the Bycatch App and Photo ID system, including their integration with the Sea Turtle Conservation website and database platform. The consultant will work closely with National Parks, Marine Protected Areas (MPAs), and local communities to ensure effective stakeholder engagement and smooth implementation of project activities. Responsibilities will also include supporting and organising community outreach and communication activities, capacity-building trainings, technical review meetings, and final evaluation workshops to strengthen collaboration and improve conservation outcomes.

**4. Scope of Work:** The IT technical consultant will be responsible for technical development, field deployment support, system optimisation, capacity building, technical documentation, and handover.

#### **4.1 Component 1 – Bycatch Reporting Application**

The IT technical consultant shall:

##### **Application Development and Improvement**

- Improve and optimise the existing mobile application for reporting bycatch incidents and marine wildlife sightings.
- Ensure the application supports offline-first functionality with automatic synchronisation when internet connectivity becomes available.

- Improve user interface and user experience (UI/UX) to ensure ease of use for fishers with limited technical familiarity.
- Optimise application performance for standard Android mobile devices commonly used in fishing communities.
- Improve data validation and reporting workflows.
- Integrate image upload, GPS location recording, and timestamp features where appropriate.

### **Data Management and Administration**

- Develop or improve an admin management system with clear user roles and permissions for IUCN and relevant authorities.
- Ensure secure data storage, backup, synchronisation, and export functions.
- Prepare technical documentation for database management and system administration.
- Support technical transfer and handover of admin rights to IUCN and relevant local authorities.

### **Capacity Building and Deployment**

- Conduct Training of Trainers (TOT) sessions for Fisheries Sub-Departments and Fisheries Associations.
- Support fisher training sessions through community meetings and project activities.
- Provide technical support during pilot implementation.
- Continuously improve the application based on feedback from fishers and local authorities.
- Support pilot deployment primarily in Gia Lai Province and potentially additional locations subject to project conditions.

### **Monitoring and Evaluation**

- Monitor user adoption and reporting performance.
- Prepare a pilot implementation assessment and recommendations for scaling up.

## **4.2 Component 2 – Sea Turtle Photo Identification System**

IT technical consultant:

### **System Development**

- Develop a mobile application for sea turtle image collection by park rangers and volunteers;
- Develop a web-based upload and image management platform;
- Develop an admin dashboard for image management, validation, and user administration;
- Develop an AI-based re-identification (re-ID) algorithm for individual turtle recognition;
- Design the system to support future scalability and database expansion.

## **Standard Operating Procedure (SOP)**

- Develop a standardised SOP for sea turtle photography;
- Define image quality standards, image angles, metadata requirements, and file naming conventions;
- Ensure all protocols comply with animal welfare standards and minimise disturbance to nesting turtles;
- Develop guidance materials for field implementation.

## **Training and Field Deployment**

- Conduct training for national park staff and sea turtle volunteers on image collection protocols and system operation.
- Support image data collection during the 2026 nesting season at Bay Canh Island, Con Dao National Park.
- Provide technical support during field implementation and troubleshooting.

## **Data Analysis and Evaluation**

- Analyse collected image data and evaluate system feasibility and accuracy.
- Assess opportunities, limitations, and operational considerations for the Photo ID application in long-term monitoring.
- Compare Photo ID performance with conventional tagging approaches.
- Conduct technical handover and operational training for national park staff.

## **6. Expected Deliverables**

### **Component 1 – Bycatch Reporting Application**

The IT technical consultant shall deliver:

1. Stable mobile application ready for pilot deployment and scaling.
2. Admin dashboard with role-based access management.
3. Technical documentation and system architecture documentation.
4. User manuals and training materials.
5. Training completion report.
6. Pilot implementation report.
7. Final evaluation and recommendations report.
8. Full transfer of source code, database structure, and admin rights.
9. Minimum three-month post-deployment technical support period.

### **Component 2 – Sea Turtle Photo ID System**

The IT technical consultant shall deliver:

1. Mobile application for image collection.
2. Web-based upload and image management platform.
3. Admin dashboard and database management system.

4. AI-assisted individual recognition system.
5. Standard Operating Procedure (SOP) for sea turtle photography.
6. Technical and user manuals.
7. Training materials and training completion report.
8. Feasibility assessment report on Photo ID methodology.
9. Final technical report including algorithm performance assessment.
10. Full system deployment and technical handover package.
11. Source code and technical documentation.

## 6. Deliverables and Timeline

No	Deliverable	Format	Timeline
1	Inception meeting, technical design, workplan, SOP draft	Report and Workplan	June 2026
2	Beta version of mobile applications bycatch (app) and admin systems	App bycatch improved, and the Sea Turtle Photo ID App development	July 2026
3	Pilot implementation, field deployment, training, and data collection	Improvement report for ID photo and bycatch Apps	July - Sep 2026
4	Data analysis and preliminary assessment of the App Bycatch and Photo ID	Data and analysis report	Sep – Oct 2026
5	System refinement, final deployment, technical handover, and final reporting and recommendation for next steps for both App Bycatch and ID Photo	Final report with clear instructions	Oct – Dec 2026

## 7. Technical Requirements and Quality Standards

### General Requirements

The systems must:

- Ensure secure data storage and role-based access control.
- Include reliable backup and synchronisation mechanisms.
- Function effectively under weak internet connectivity.
- Be user-friendly for non-technical users;
- Be optimised for standard IOS/Android mobile devices;
- Ensure biological and user data confidentiality;
- Include clear technical documentation and maintenance guidance;
- Comply with applicable data management and sharing regulations.

### Specific Requirements for the Photo ID System

- Image collection procedures must minimise disturbance to sea turtles and comply with animal welfare principles.
- The application workflow should not interfere with ranger or volunteer operations during nesting monitoring activities.
- Image quality standards must be sufficient for AI model training and evaluation;
- The system should support future integration with existing monitoring databases where feasible.

## **8. Reporting and Coordination**

The IT technical consultant will work closely with:

- IUCN Vietnam.
- Con Dao National Park, IUCN Sea turtle Volunteer
- Gia Lai Fisheries Sub-Departments and Fisheries Associations.
- Local project partners and fishers.

The IT technical consultant shall:

- Participate in regular technical review meetings.
- Provide monthly progress updates.
- Submit draft deliverables for review and approval.
- Revise deliverables based on comments from IUCN and relevant partners.

All deliverables and technical outputs shall be submitted in English and Vietnamese unless otherwise agreed.

## **9. Required qualifications and experiences**

The IT technical consultant should demonstrate:

### **Educational Qualifications**

- Bachelor's degree or higher in Computer Science, Information Technology, Software Engineering, Artificial Intelligence, Data Science, or related fields.
- Additional certifications or specialised training in AI, mobile application development, cloud systems, or related technical areas will be considered an asset.

### **Technical Expertise**

- Proven experience in mobile application development, particularly using Flutter.
- Experience with AI/computer vision systems for image classification, object detection, pattern matching, animal re-identification, or biometric recognition systems.
- Experience developing AI-enabled tools for biodiversity monitoring, wildlife conservation, or ecological field operations.
- Experience in web development, database management, cloud synchronisation, and offline-first systems.

- Ability to independently manage end-to-end technical implementation, including system architecture, frontend/backend development, deployment, testing, documentation, and technical handover.

### **Relevant Project Experience**

- Experience in conservation technology, biodiversity monitoring, fisheries, or environmental projects.
- Experience working with NGOs, government agencies, or conservation programs.
- Experience in field deployment under remote or low-connectivity conditions is preferred.
- Ability to translate field conservation workflows into practical digital tools for non-technical users.

The IT technical consultant is encouraged to include expertise in:

- Mobile application development (particularly Flutter).
- Web development (particularly NextJS)
- AI/computer vision.
- Backend/database systems.
- UI/UX design.
- Technical training and field support.
- Interdisciplinary experience across technology, conservation, and field operations.

### **Duty Station**

Not required

### **Travel arrangement**

Travel required for this assignment based on the IUCN's workplan.

## **10. Proposal Submission Requirements**

Interested IT technical consultants should submit:

1. Technical proposal including methodology and implementation approach.
2. Proposed workplan and timeline.
3. CVs of key personnel.
4. Examples of similar projects completed.
5. Financial proposal including detailed budget breakdown.

## **11. Intellectual Property and Data Ownership**

All source codes, databases, technical documentation, training materials, reports, and project-related outputs developed under this consultancy shall become the property of IUCN unless otherwise agreed in writing.

The consultant shall not share, publish, or reuse project data without prior written approval from IUCN.

## 12. Application Process

### Eligibility Requirements:

- Be free of conflict of interest.
- Be a Vietnamese citizen (for national position).
- Be tax compliant.
- Not have been found guilty of environmental, financial, or ethical misconduct.

### Required Documents: Applicants must submit the following documents in PDF format:

- Letter of Expression of Interest (EOI), with proposed daily rate.
- CV ([using attached form](#)).
- Copy of Citizenship Certificate and Tax Registration.
- Signed Declaration Form (if applicable).

### Submission Details:

- Submission Deadline: *5 June 2026*
- Email Address:  
*hien.buithithu@iucn.org;nhung.phamhong@iucn.org*
- Email Subject Line: *IUCN-VN-TURTLE-2026-02 – Applicant Name*
- All submissions must be in PDF format. If necessary, split large files into multiple emails (e.g., Email 1 of 2, Email 2 of 2).
- Do not use file-sharing links or platforms for submission.

### Additional Information

- IUCN reserves the right to accept or reject any or all applications without providing any reason.
- Only shortlisted candidates will be contacted for further steps.