



## TERMS OF REFERENCE (ToR)

**Title:** Environmental Monitoring Technology Partnership

**Project / Institutional Counterpart:** National Environmental Authority (NMA)

**Type of Contract:** Institutional / Firm Contract (Framework Arrangement)

**Duration:** 6 Months (with possibility of extension subject to performance and funding availability)

### 1. BACKGROUND

The National Environmental Authority (NMA) is the competent environmental regulatory authority of the Republic of Suriname, established under the Environmental Framework Act (Milieu Raamwet, S.B. 2020 no. 97, as amended in 2024).

The NMA is mandated to regulate, monitor, supervise and enforce environmental protection nationwide. Its statutory functions include:

- Environmental quality monitoring (air, water, soil);
- Environmental permitting and compliance oversight;
- Review and monitoring of Environmental Impact Assessments (EIA/ESIA);
- Enforcement of environmental standards and restoration measures;
- Environmental data management and reporting;
- Monitoring, Reporting and Verification (MRV) obligations under multilateral environmental agreements.

Suriname is experiencing increasing environmental pressures related to extractive industries, land-use change, hazardous substances, and climate change impacts. In addition, emerging international mechanisms—such as carbon markets and climate finance instruments—require robust MRV systems supported by high-quality environmental data.

To modernize its regulatory operations and strengthen evidence-based enforcement, the NMA seeks to establish a structured partnership with a qualified Environmental Monitoring Technology Firm. The partnership will introduce advanced monitoring technologies, geospatial



intelligence tools, environmental sensors, and data analytics systems to enhance national environmental governance.

This assignment contributes to strengthening institutional capacity for environmental regulation and supports Suriname's commitments under international environmental conventions.

## 2. OBJECTIVE OF THE ASSIGNMENT

The overall objective is to strengthen the NMA's regulatory monitoring capacity through the provision of advanced environmental monitoring technologies and technical support services.

Specific objectives include:

- Enhance environmental quality monitoring (air, water and soil);
- Strengthen Monitoring, Reporting and Verification (MRV) systems;
- Improve compliance oversight and enforcement support;
- Provide regulatory-grade geospatial intelligence;
- Build institutional technical capacity within the NMA.

The engagement will function under a framework (call-off) arrangement whereby specific assignments will be commissioned as needed.

## 3. SCOPE OF WORK

The selected firm shall provide services under the following components:

### 3.1 ENVIRONMENTAL QUALITY MONITORING

#### A. Air Quality Monitoring

- Deployment of drone-based and/or fixed ground-based sensors;
- Measurement of particulate matter (PM<sub>2.5</sub>, PM<sub>10</sub>), gaseous pollutants and other relevant parameters;
- Ambient monitoring in sensitive zones;
- Preliminary stack emission screening (where applicable);
- Data validation, calibration and reporting.



## B. Water Quality Monitoring

- In-situ sensor deployment;
- Targeted surface and groundwater sampling campaigns;
- Integration of laboratory results into spatial datasets;
- Source identification and contamination plume mapping.

## C. Soil Monitoring

- Design of sampling strategies;
- Field documentation and contaminant screening;
- Spatial mapping of affected sites;
- Support to environmental damage assessment and restoration planning.

## D. BIODIVERSITY MONITORING

The selected firm shall support the NMA in establishing an integrated biodiversity monitoring component within its national regulatory monitoring framework, including

- baseline terrestrial and aquatic ecosystem assessments;
- deployment of camera traps, acoustic sensors and drone/LiDAR-based vegetation analysis;
- habitat fragmentation and land-use change detection;
- monitoring of bioindicator species and ecosystem health indicators;
- satellite-based ecosystem integrity and deforestation analysis;
- integration of biodiversity data with water, soil and air quality datasets.

### 3.2 Geospatial Intelligence and Remote Sensing

- Drone-based photogrammetry and orthomosaic production;
- LiDAR surveys for terrain and vegetation analysis;
- Satellite imagery analysis (multispectral and radar);
- Change detection analysis;
- 3D modeling and environmental impact visualization;
- Development of GIS-compatible datasets.

### 3.3 Data Processing and Reporting

- Data cleaning, validation and QA/QC procedures;
- Integration of multi-source datasets;



- Preparation of analytical and regulatory reports;
- Development of dashboards and visualization tools;
- Support to compliance case documentation.

### 3.4 Capacity Development

- Technical training sessions for NMA staff;
- Development of monitoring SOPs;
- Hands-on demonstrations of equipment and software;
- Advisory support for institutional strengthening of monitoring systems.

## 4. EXPECTED DELIVERABLES

Deliverables will vary per assignment and may include:

- Environmental monitoring reports;
- GIS datasets (maps, orthomosaics, 3D models, point clouds);
- Contamination assessment reports;
- MRV-supporting datasets;
- Training materials and manuals;
- Data transferred in agreed digital formats.

A detailed deliverable schedule will be agreed upon for each call-off assignment.

## 5. PAYMENT SCHEDULE (INDICATIVE)

Deliverable	Payment (%)
1. Inception Phase: Detailed work plan, methodology, and data acquisition strategy.	20%
2. Data Acquisition & Training: Delivery of training materials, manuals, and completion of field monitoring/sensor deployment.	30%



3. Technical Datasets: Submission of GIS datasets (maps, orthomosaics, 3D models, point clouds) and MRV-supporting datasets.	30%
4. Final Reporting: Final Integrated Technical Report including environmental monitoring and contamination assessment reports.	20%

## 6. INSTITUTIONAL ARRANGEMENT

The selected firm will report to the Director of the National Environmental Authority (NMA) or a designated technical focal point.

All assignments shall be formally commissioned in writing.

A kick-off meeting will define:

- Reporting templates;
- Technical standards;
- Data formats;
- Work plans and timelines.

## 7. DURATION OF WORK

The initial contract period is six(6) months.

Performance will be evaluated at the end of the contract period. Extension will depend on satisfactory performance and availability of funds.

## 8. QUALIFICATIONS OF THE FIRM

### 8.1 Corporate Experience

- Minimum five (5) years of proven experience in environmental monitoring and geospatial services;
- Demonstrated expertise in photogrammetry, LiDAR, satellite imagery and sensor-based monitoring;
- Experience working with governments or regulatory institutions;



- Proven capacity to deliver regulatory-grade data.

## 8.2 Technical Capacity

- Professional/enterprise-grade drone platforms;
- Certified environmental sensors;
- In-house GIS and data analysis specialists;
- QA/QC procedures for environmental data;
- Secure data management systems.

## 8.3 Regulatory Compliance

- CASAS-authorized UAV pilots;
- Valid authorization/exemption from the Ministry of Transport, Communication and Tourism (TCT);
- Valid liability insurance covering UAV operations;
- Compliance with all relevant Surinamese laws and aviation regulations.

## 9. SELECTION CRITERIA (INDICATIVE)

Technical Evaluation (70%):

- Relevant experience – 25%
- Technical approach and methodology – 25%
- Equipment and technical capacity – 20%

Financial Evaluation (30%)

## 10. ETHICAL CONSIDERATIONS AND DATA OWNERSHIP

All data collected under this assignment shall remain the property of the National Environmental Authority.

The contractor shall:

- Ensure confidentiality of sensitive environmental data;
- Comply with UNDP procurement and ethical standards;
- Adhere to environmental and social safeguards where applicable.



## 11. APPLICATION PROCESS

Interested firms shall submit:

### Technical Proposal:

- Company profile;
- Description of relevant experience;
- CV's of key personnel;
- List of equipment and technologies;
- Proposed methodological approach;
- References of similar assignments;
- Proof of regulatory compliance.

### Financial Proposal:

Indicative unit rates for:

- Drone mapping (per hectare/m<sup>2</sup>);
- Sensor deployment (daily/hourly);
- Data analysis and reporting;
- Advisory support;
- Mobilization and logistics costs.

Unit rates will serve as a framework reference. Specific assignments will be costed separately.

## 12. SUBMISSION AND OPENING OF PROPOSALS

All proposals must be submitted to the email address: [info-EMSAGS@nimos.org](mailto:info-EMSAGS@nimos.org), with the subject reading as follows: **“Application for Environmental Monitoring Technology Partnership”**.

- Submission Deadline: Friday, April 17, 2026, 15:00h Suriname Time.
- Please ensure that the Application letter, CV's, Technical Proposal and Financial Proposal are submitted as **SEPARATE FILES** in one email.
- Any proposal that arrives after the deadline for submission shall not be considered.

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