



**PRIME ENVIRONMENTAL
CONSULTANCY**

BUSINESS PROFILE

GIS-Based Environmental Monitoring, Powered by Drone & Satellite Analytics



GIS & Deforestation Monitoring | Drone-Based Verification | Agribusiness & Water Analytics | OSH Inspections

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I. About Prime Environmental Consultancy

Prime Environmental Consultancy (P.E.C) is a Tanzania-based environmental monitoring firm built around a simple idea: change on the land should be tracked continuously, not guessed at once a year. Our core offering is GIS-based environmental monitoring, combining satellite time-series analysis with drone-based multispectral verification, to give conservation programs, forestry authorities, and donor-funded projects evidence-backed, ongoing visibility into deforestation, land-use change, and ecological condition.

Around this core, we offer a set of complementary services, water resource monitoring, agribusiness and crop analytics, and occupational safety & health (OSH) inspections, that extend our GIS and field-instrumentation capability to a wider range of clients, from government agencies and NGOs to commercial farms and industrial facilities.

Vision

To be East Africa's leading provider of GIS-based environmental monitoring, turning satellite and drone data into continuous, defensible evidence for conservation, compliance, and sustainable resource management.

Mission

To equip conservation programmes, government bodies, donor projects, and businesses with precision, ongoing environmental monitoring, delivered through satellite analysis, drone verification, and transparent reporting that turns raw geospatial data into decisions clients can act on and defend.

Core Values

- **Precision & Accuracy:** every dataset, map, and monitoring report is built on calibrated instruments, verifiable imagery, and repeatable methods.
- **Evidence, Not Just Imagery:** we don't just report change from space, we verify it on the ground with drone survey, giving clients data they can stand behind.
- **Local Expertise, Global Standards:** regionally grounded teams applying internationally recognised GIS, remote-sensing, and MRV methodologies.
- **Innovation & Technology:** continual adoption of satellite, drone, and sensor technologies to improve the speed and reliability of insight.
- **Client Partnership:** monitoring relationships built for the long term, not one-off transactions, because change is ongoing, so is our engagement.

2. Leadership & Team



Tareeq H. Mangachi

Technical Director | Environmental Monitoring Expert

“GIS-driven environmental monitoring turns data into evidence and evidence into sustainable decisions.”

Mr Mangachi leads P.E.C’s technical delivery, overseeing satellite analysis, drone operations, and field verification. His approach centres on translating raw geospatial and sensor data into clear, decision-ready monitoring reports for conservation, government, and donor-funded clients, as well as agriculture and industrial sectors.



Ibrahim W. Mkude

Managing Director | Environmental Technology Expert

“Protecting environmental integrity through disciplined assessment and evidence-based reporting.”

Mr Mkude leads P.E.C's overall strategy, client and partner relationships, and business operations setting the direction that has taken the firm from general environmental consulting to a focused GIS-based monitoring provider serving conservation, government, and commercial clients across Tanzania.

Technical Team



Ms. Nadya Ngwali
Agronomist



Mr. Alex Levis
Drone Expert

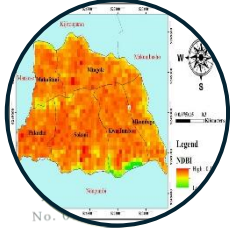


Mr. Lazaro Safari
Geospatial Analyst

3. Our Services

Our services are structured in three tiers ,a primary monitoring offering, subsidiary GIS-based extensions, and a foundational consulting layer that supports both.

PRIMARY, GIS-BASED ENVIRONMENTAL MONITORING



Deforestation & Land-Use Change Monitoring

Satellite time-series analysis (Sentinel-2 / Landsat) to detect and track deforestation, encroachment, and land-cover change across reserves, concessions, and project areas, refreshed on a recurring, not one-off, basis.



Drone-Based Ground-Truth Verification

DJI Mavic 3 Multispectral surveys that verify satellite findings on the ground producing orthomosaics, vegetation health indices (NDVI/NDRE), and terrain models (DEM/DSM) for the areas that matter most.



Protected-Area & Carbon Project (MRV) Monitoring

Ongoing monitoring support for protected areas, forestry concessions, and REDD+/carbon projects, structured to meet MRV and donor-reporting requirements with defensible, repeatable evidence.

SUBSIDIARY, EXTENDED GIS MONITORING SERVICES



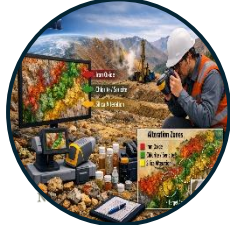
Agribusiness & Crop Health Analytics

Multispectral crop health monitoring, irrigation planning, and precision-agriculture prescription mapping for commercial farms, estates, and agribusiness processors.



Water Resource Monitoring

Satellite and drone-based tracking of water quality indicators, basin/catchment change, and erosion risk, supporting basin water boards, developers, and conservation partners.



Hydrothermal Alteration Analysis for Mine Prospecting

Satellite and drone-based spectral analysis to detect and map hydrothermally altered ground, flagging mineralisation indicators and structural targets, giving exploration teams a data-driven starting point for mine prospecting and drill-targeting.

FOUNDATIONAL, CONSULTING & COMPLIANCE SERVICES



Occupational Safety & Health (OSH) Inspections

Structured workplace inspections covering fire safety, ventilation, lighting, noise, and general hazard identification, documented for compliance and risk reduction.



Acoustic & Photometric Studies

Calibrated noise-level and illuminance assessments supporting environmental and workplace compliance.



Water Sampling & Quality Monitoring

Field-based water sampling paired with GIS mapping to track quality parameters across catchments, coastal sites, and project areas, complementing remote water resource monitoring with on-site verification.



Air Quality Monitoring

Field measurement and geospatial mapping of air quality indicators around industrial sites, urban areas, and project zones, supporting compliance and environmental impact reporting.

These foundational services also serve as an entry point for new institutional relationships, building trust and cash flow while monitoring retainers are established.

4. Who We Serve, B2B & B2C

Our services are structured to serve institutional clients seeking ongoing, contract-based monitoring programmes, and individual or small-business clients seeking accessible, project-based support.

For Businesses & Institutions (B2B)

- **NGOs, donor projects, conservation & government agencies**, environmental impact mapping, land-use and deforestation monitoring, GIS/MRV reporting for carbon and forestry projects.
- **Mining, quarry & extractive operators**, terrain modelling, erosion and rehabilitation tracking, environmental compliance monitoring.
- **Agribusinesses & commercial farms**, crop health monitoring, irrigation planning, yield mapping.
- **Construction & real estate developers**, topographic surveys, progress monitoring, DEM/DSM modelling.
- **Manufacturing & industrial facilities**, OSH audits, noise and lighting compliance surveys.

For Individuals & Small Enterprises (B2C)

- **Smallholder & individual farmers**, single-plot crop health and canopy assessments.
- **Landowners**, boundary and topographic surveys for sale, subdivision, or planning.
- **Small business owners**, basic workplace safety, lighting, and noise checks.
- **Homeowners & estates**, aerial photography for property documentation or insurance.
- **Students & researchers**, access to drone imagery and environmental data for projects.

5. Projects

A selection of engagements demonstrating our GIS-based monitoring approach in practice.

GEOSPATIAL BASELINE & FEASIBILITY ASSESSMENT - MANGROVE RESTORATION PROJECT, KUNDUCHI

Main Objective: To determine the baseline site condition prior to restoration, mapping the extent and density of vegetation cover and assessing the degree of wave-induced coastal erosivity. (30m GSD)



Drone Orthomosaic, Kunduchi project site

ASSESSMENT OF SURFACE WATER HYDROLOGY- KIMARA CORNER

Main Objective: To assess the surface water hydrology of Kimara Corner, mapping drainage patterns and terrain characteristics relevant to runoff and flood behaviour in the area.

Deliverables: Orthomosaic and Digital Terrain Model (DTM) (2cm resolution)



Drone Orthomosaic, Kimara Corner

TOPOGRAPHICAL SURVEY OF MAWELA VISITATION PARISH- MOSHI

Main Objective: To carry out a topographical survey of Mawela Visitation Parish, Moshi, supporting the development of an accurate GIS data package for the site.

Deliverables: Orthomosaic image, delivered as part of a GIS package in .tiff format (2 cm resolution).



Drone Orthomosaic, Mawela Visitation Parish, Moshi

TOPOGRAPHICAL SURVEY - MVUTI

Main Objective: To carry out a topographical survey at Mvuti, generating accurate spatial data to support GIS-based site mapping.

Deliverables: Orthomosaic image, delivered as part of a GIS package in .tiff format.



Drone Orthomosaic, Mvuti

THE BASELINE AIR QUALITY AND ACOUSTIC ASSESSMENT AT SOFT GOLD MINING COMPANY LIMITED AT MISUNGWI, MWANZA

Main Objective: Establish Baseline site conditions for the expansion of the Pit area and the establishment of a new Heap Leach



Site monitoring at the former Pit area

6. Technical Capabilities

- Satellite time-series analysis for deforestation and land-cover change (GIS/RS)
- Drone-based multispectral mapping and ground-truth verification
- Vegetation health & precision agriculture analytics
- Ecological and environmental impact analysis
- Air quality monitoring
- Acoustic analysis (environmental and occupational noise)
- Thermal safety screening and photometric (lighting) evaluation
- Occupational safety & health (OSH) analysis and risk assessment

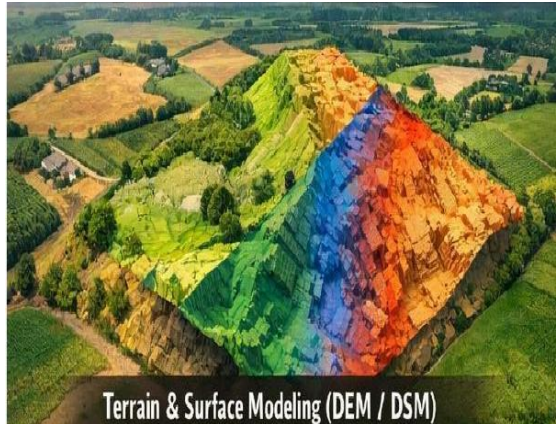
Satellite analysis is performed on Sentinel-2, Landsat, and Planet NICFI tropical-forest imagery via Google Earth Engine and QGIS; drone outputs are processed for NDVI/NDRE vegetation indices, Orthomosaic, and DEM/DSM terrain models.

7. Sample Deliverables

Each engagement results in clear, visual, decision-ready outputs. Monitoring-focused examples lead, with agribusiness and terrain outputs following.



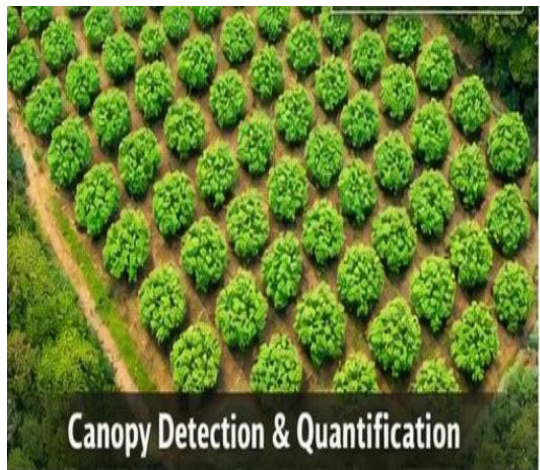
Environmental Impact & Deforestation Mapping



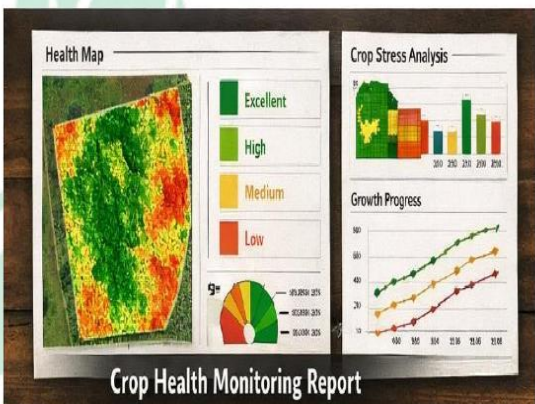
Terrain & Surface Modelling (DEM / DSM)



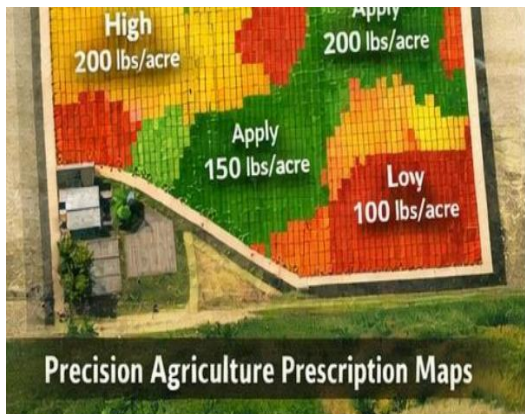
Vegetation Index Mapping (NDVI, NDRE, GNDVI, LCI)



Canopy Detection & Quantification



Crop Health Monitoring Reports



Precision Agriculture Prescription Maps

8. Competitive Advantage & SDG Alignment

- **Satellite + Drone, combined:** we combine satellite time-series analysis with drone-based ground verification most local providers offer one or the other, not both under a single, integrated monitoring service.
- **Built for Ongoing Monitoring, Not One-Off Reports:** we sell continuous monitoring retainers, not just one-off reports giving clients current, defensible data whenever they need it for MRV, compliance, or donor reporting.
- **Precision Instrumentation:** calibrated sensors and professional-grade multispectral drones for reliable, repeatable data.
- **Regional Relevance & Accessibility:** locally based, understanding Tanzanian regulatory and environmental context, with services scaled for institutions, agribusinesses, and individual clients alike.
- **Transparency & Impact:** clear reporting that links monitoring data directly to practical actions and measurable outcomes.

Alignment with Sustainable Development Goals

Service	Related SDGs
Deforestation & Land-Use Monitoring	SDG 13 (Climate Action), SDG 15 (Life on Land)
Drone Mapping & Verification	SDG 11 (Sustainable Cities & Communities), SDG 15 (Life on Land)
Agribusiness & Crop Analytics	SDG 2 (Zero Hunger), SDG 12 (Responsible Consumption & Production)
Water Resource Monitoring	SDG 6 (Clean Water & Sanitation), SDG 13 (Climate Action)
OSH Inspections	SDG 3 (Good Health & Well-being), SDG 8 (Decent Work & Economic Growth)

9. How to Work with Us

Getting started is straightforward:

1. Contact us with a brief description of your site, sector, and what you'd like monitored or assessed.
2. For monitoring engagements, we recommend starting with a scoped pilot, one site or boundary, one reporting cycle, before committing to a full retainer.
3. We schedule satellite analysis and/or a drone survey suited to your site and timeline.
4. Data is collected, processed, and analysed using our GIS platforms and field instruments.
5. You receive a clear, decision-ready report, with the option to convert into an ongoing monitoring contract.

We offer both scoped pilot/project engagements and ongoing monitoring retainers, with packages scaled to suit government agencies and donor programmes as well as individual farms and small businesses.

Our Commitment

We are committed to environmental stewardship, community empowerment, and innovation. Our monitoring work, business initiatives, and educational outreach are aligned with Tanzania's national development priorities and global sustainability goals.

10. Contact Information

Prime Environmental Consultancy

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Service Areas: Dar es Salaam and surrounding regions, with project-based travel across Tanzania for monitoring engagements.